



Possibilities Unbound.

Indiana State Department of Agriculture
Specialty Crop Block Grant Program
Final Report Report
Agreement Number: 12-25-B-0922
Original Submission: January 13th, 2013
Revised Submission: February 19th, 2013
Revised Submission: March 22, 2013
Revised Submission: May 24 2013

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Contents:

<u>Farmers' Market Cost Share</u>	Page 2
<u>Farmers' Market Web Tool</u>	Page 4
<u>Indy City Market</u>	Page 6
<u>Bloomington Kitchen Incubator</u>	Page 8
<u>Local Growers Guild-Back Pack Buddies</u>	Page 13
<u>Slow Food Indy</u>	Page 15
<u>National Maple Syrup Festival</u>	Page 25
<u>Indiana Christmas Tree Producers</u>	Page 27
<u>Taste of Indiana</u>	Page 30
<u>Indiana University-Mrkt. Analysis</u>	Page 32
<u>Pike County Extension Research</u>	Page 36
<u>Purdue University-Drift Research</u>	Page 39
<u>Market Maker</u>	Page 42
<u>BIG CITY Farm Urban Apprenticeship Curriculum and Manual</u>	Page 43
<u>INDY Winters Farmers' Market Voucher Program</u>	Page 86
<u>BIG CITY Farm Apprentice Manual</u>	Page 92
<u>Bloomington Winters Farmers' Market</u>	Page 100

PROJECT TITLE: Farmers' Market Cost-Share Reimbursement Program:

PROJECT SUMMARY:

Most of Indiana's Farmers' Markets are small and lack the financial resources needed to pay for promotional items. To increase consumer awareness and overall appeal of Indiana farmers' markets, ISDA created and implemented a cost-share reimbursement program; with previous years Specialty Crop Block Grant funds, to provide grants to Indiana farmers' markets. The program this year is simply another round of this cost-share and ISDA is requiring all promotions and advertisements to only contain images of fruits and vegetables or other qualify specialty crops to ensure those crops are being featured and recognized. This program was announced at Hort Congress held January 18-20,th 2011 as well as promoted through several Ag Media outlets and ISDA's facebook, twitter and blog accounts. ISDA is pleased to announce that it awarded \$9,245.02 to 15 Farmers' Markets around the state with grant awards ranging from \$84.25 to \$1,000. The use of these funds is timely as consumers are looking to see where their produce and fruits are grown, and meet their farmers.

PROJECT APPROACH:

ISDA advertised the details of the reimbursement program in many ways. ISDA partnered with Purdue Extension and the Indiana Cooperative Development Council to promote the program at the annual farmers' market workshops (five in total) that were held at locations across the state and reached approximately 82 vendors. This program was offered as a reimbursement to markets on a first to apply and present proper documentation, first to be awarded until funds were depleted. We required that only specialty crops be marketed, promoted and advertised and requested documentation to verify that.

Indiana's farmer markets are clearly growing across the State, as Indiana has seen a rise in markets of 47%, which is higher than the USA average for increase. The use of SCBG funding is why Indiana is growing more markets.

GOALS AND OUTCOMES ACHIEVED:

During the previous three years; this program increased consumer awareness of Indiana Farmers' Markets causing them to experience increased visitation and the overall growth of farmers' markets. ISDA has gathered information from all these markets as to how many vendors attend as well as consumers and will compare this year's numbers with previous year's attendance rates in the final report.

While ISDA was expecting 20 market participants we had 15 but three of our metro areas really embraced the local specialty crop production and made good use of the all of the grant dollars available for reimbursements. The outreach that these three metro areas have equals 2.1 million people.

ISDA was expecting a 5% growth in Farmers Markets and according to USDA information a 47% increase was achieved.

As a part of the reimbursement process on our application form we ask for market attendance to be captured and vendor participation. Consumers and vendors both increased for 11 of our markets by 123%. The other markets were new participants.

BENEFICIARIES:

The following groups benefited from the creating of the FM Cost share program. Purdue Extension and the Indiana Cooperative both benefited by ISDA being a speaker at their workshops on the subject of grant funds that may be available to promote a market. This head line of grant money always draws an interest and encourages participation. Local specialty crop producers benefit by having more consumers become aware of the market. It is estimated that over 100 vendors participated in the 15 markets.

LESSONS LEARNED:

This is a great program to promote specialty crops. The process that we as a state entity has to go through to award a grant in the amount of \$84 is a nightmare and takes a considerable amount of time. Yet, ISDA is excited to see markets grow and what appears to be production grow in Indiana. The other challenge when working on a project this small is that often the market masters are volunteers. That means ISDA needs to ensure we do our outreach each year as often the good news of this grant does not get passed on to the next master.

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ADDITIONAL INFORMATON:

We post the application on the ISDA website each year, but remove it during January/February for website updates.

PROJECT TITLE: Indiana Farmers' Market Web Tool

PROJECT SUMMARY:

ISDA has had huge success with the Agri-Tourism Directory and would like to see that expand into a functional web tool where consumers could view detailed information and maps about various farmers' markets and road side produce stands. Before implementing this web tool ISDA functioned with a PDF file on their website that was not user friendly since it only allowed the user to see a few of the market names and addresses. On top of that challenge, many of ISDA's constituents access the Internet through a dial-up connection and could download the file. This Farmers' Market Web Tool was built to be an interactive, up to date, site where consumers can obtain seasonal information about the market in their area or a market they would like to visit while in another area of the state. This project was broken into phases; ISDA used funding from this SCBG to fund the final phase of the project which consisted of development and implementation of the web tool with the Indiana Department of Technology.

PROJECT APPROACH:

ISDA wanted to permanently move the Agritourism Directory to an online system that saved general fund money going forward, as well as creating a system that is maintaining the most recent information and is enhancing usability. Creating a web application tool has reduced the bandwidth needed to access the information therefore making it quicker and easier for users to access.

ISDA's Program Manager for Diversification met with the Indiana Department of Technology for over 3 months to develop and test this site to ensure its user friendliness. Near the end ISDA's Director of Communication was looped into this project as well and was used to launch the tool to the public. The site became public in the Spring and allowed ISDA to fully move away from the printed directory. Producers are only able to enter their information into this program if they raise and sell specialty crop products. In some cases they may offer other items, but they have to offer specialty crops to be listed and ISDA feels that the large majority of items listed in this directory are specialty crops.

GOALS AND OUTCOME ACHIEVED:

The goal of this project was to provide the Indiana Farmers' Market directory to constituents in a cost effective manner. The following are items that were identified for this project that were accomplished by ISDA working with the Indiana Department of Technology; entering Farmers Market Information, functionality to search for Markets', a map view of Farmers' Market locations by county, admin functionality, delete/edit Market information.

In the past ISDA was able to print 20,000 directories; in one year's time the web tool has received over 50,000 visitors. ISDA feels this more than doubles their previous efforts and they anticipate the number of visitors to continue to increase. As for the user capabilities of this tool; Consumers have the ability to search for Markets', view a map of locations by county and learn what other amenities that location offers. Producers using this site have admin functionality and can delete/edit Market information.

BENEFICIARIES:

Obviously the number of consumers who could eventually use this tool is endless, and ISDA is please to have over 500 producers utilizing this tool to update their information.

LESSONS LEARNED:

Developing the web tool was a smooth and easy process. The only issue ISDA ran into for this project was incorporating a blog with this program. Due to issues with the state's contracting process and with the blogger ISDA has originally intended to use, this aspect of the project was left out and funds were approved by USDA to be reallocated to another project. At this time, ISDA does not regret this decision and feels the web tool runs fine and receives enough attention without it.

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ADDITIONAL INFORMATON:

This web tool can now be accessed on the State's website www.in.gov/isda

PROJECT TITLE: Indy City Market-Demonstration Kitchen

PROJECT SUMMARY:

The Indianapolis City Market developed a demonstration kitchen, engaging local chefs and featuring produce from the "Original Farmers' Market" in an ongoing series of educational cooking classes using fresh local Indiana products. Through consumer education and culinary outreach, the Indianapolis City Market encouraged visitors to prepare and consume slow foods, developing a more healthy and sustainable diet.

The need for this type of program in Indianapolis is clear; Marion County Health Department survey shows that Marion County has a combined total of over 60% of adults who are overweight or obese with two of the contributing factors related to types of food and portion sizes. The educational cooking classes, held at the Indianapolis City Market, featured only fresh fruits and vegetables from the farmers' market. Therefore only Specialty Crops received attention through this project. These classes allowed individuals downtown to see the amounts needed and how to prepare the food, as well as purchase the food at one convenient location, increasing the sale of produce at the "Original Farmers' Market."

Additionally, the demonstrations enticed more individuals, especially those with food allergies and special diets, to visit and purchase produce at the "Original Farmers' Market."

PROJECT APPROACH:

It was estimated that every Wednesday, from May through October, approximately 50 farmers set out in their trucks, transporting precious cargo: their fresh-picked, Indiana-grown bounty to the Indy City Market. Due to the renovation work this number started out at 7 farmers and grew to 22 Wednesday Vendors dedicated to specialty crop producers. Then it grew to an additional 18 vendors for the Indy Winter Market.

On our application process to enter in the market with fresh fruits and produce requires a farm site visit so we can ensure that our participants our marketing a fresh product that comes from their farm.

The Indianapolis City Market Corporation, in conjunction with The Chef's Academy, developed a themed monthly educational cooking series that is fun, informative and illustrates the ease and accessibility of cooking with fresh, local product. This work of planning started in January of 2010 to line up chefs who would do the cooking demonstrations. Because we were slow in getting our producers to engage the market promotions were postponed until there was more activity on which to focus. Finally in the spring of 2012 under new leadership and direction the market using media and in house promotions we had great success promoting the use of fresh foods when consumers were able to see live demonstrations taking place. The market averages about 300 visitors during the week and another 150 on the Saturday market.

Within the City Market we have banners that were purchased using the SCB Funds and only specialty crops are being displayed.

GOALS AND OUTCOMES ACHIEVED:

During the first year of this grant award the City Market was off to a slow start with working through getting vendors signed up and market organization. We went through an unforeseeable construction/renovation delaying many of the activities to the 2012 farmers'

market season. We were able to work with the YMCA to bring health awareness and fitness to the market, eating fruits and veggies and staying healthy, including biking to work. This park it at the market initiative brings an additional 100 visitors to the market.

The City Market worked in partnership with Little Red Door Cancer Agency to bring whole, cancer-fighting and specialty crop foods to an “edutainment” setting in the City Market’s state-of-the-art demonstration kitchen setting. These sessions, four during the months of April, June and October were attended by over 23 to a high of 40 people in age from high school to retirement. The number of repeat participants were approximately 10 to 15.

Future Project Plans: City Market management is designing an Eco Plaza transformation to its former East Plaza space that will encompass/feature an Indiana-indigenous grow garden of specialty crops, a micro-transit station concept to boost alternative transportation options, an alternative water management plan, and create spaces to learn about ecology and new ways of living in our city, including bicycle advocacy and vehicle sharing. The Eco Plaza project will meet Indiana State educational standards for History/Economics, Nutrition and Science.

BENEFICIARIES:

The market serves as a cornerstone for downtown Indianapolis. In a City of a populous of one million people plus the market provides downtown dweller and visitors an opportunity to sample, consume and purchase fresh veggies, herbs and fruits. Our outreach program into health and women’s health awareness has been a tremendous success, reaching a participant audience of a total of a hundred plus people. Two of these cooking demonstrations made morning news segments reaching a one million plus audience.

Our growers come from a nine county radius. We believe that now that our renovations are complete will continue to see our numbers of growers increase in the yearly indoor market and in our outdoor markets.

LESSONS LEARNED:

While the City Market in Indianapolis’s longest serving retail place, we had a difficult transition through our renovation period building the confidence of our growers that we would have the facility up and running in time for the farmer markets. Unfortunately we had a slower launch and lower participation level when we not complete with the work. Once the work was finalized and the vendors could plan for their market space our market was able to successfully begin to capture more consumers and participation.

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ADDITIONAL INFORMATION:

The website for more information about the market is found at <http://www.indycm.com/shop/>

PROJECT TITLE: Bloomington Kitchen Incubator

PROJECT SUMMARY:

The Bloomington Kitchen Incubator (BKI) is a non-profit organization that supports farmers and entrepreneurs in the creation of viable small food production businesses. BKI is overseen by the Local Growers Guild which is a cooperative of growers in southern and central Indiana, based in Monroe County that are solely interested in specialty crops. BKI offers business planning and marketing support, specialized information about food safety regulations, mentorship, and access to a certified commercial kitchen. BKI is currently working to identify potential outlets these fruit and vegetables and would like to target small locally owned retail stores such as rural groceries, convenience stores, and gas stations.

BKI is requested funds to conduct market research of locally owned retail stores to understand their needs, their clientele, and their interest in locally grown fruits and vegetables. Based on this information, BKI worked with Ivy Tech students to develop marketing materials tailored to each sales channel. Some materials promoted the concept of local fruit and vegetables while others became templates that can be used to promote specific food businesses and specific produce. Additionally, BKI conducted marketing workshops to help food entrepreneurs and farmers develop their own successful marketing campaigns solely for specialty crops. A local marketing committee launched a larger "Buy Local" campaign encouraging the public to buy from local businesses and encouraging local businesses to buy from each other.

PROJECT APPROACH:

We successfully contacted over 50 retailers in Monroe and surrounding counties and identified 8 who are very interested in locally produced foods. We also worked with two graphic design classes, taught by James Reinhart, at Indiana University. The first class worked with BKI to develop a logo and brochures. The second class focused on 'a dozen reasons to buy locally'. In addition to window posters, a full-sized billboard was produced in partnership with Bloomingfoods that currently hangs in downtown Bloomington.

We supported the creation of a local marketing committee, Local First Indiana that operates as a nonprofit and works to promote local businesses in southern Indiana. Local First Indiana, the Local Growers Guild, and the Bloomington Kitchen Incubator partnered with several other area organizations and businesses to promote a "Going Local" week in September 2010 with many activities involving locally grown food. A similar event was held in September 2011 although without the participation of the Bloomington Kitchen Incubator.

We held one marketing workshop featuring experienced local food producer Steve Spencer, owner of Local Folks Foods, in the spring of 2010. He discussed the options for packaging and successfully working with retailers. Additionally, at the Winter Guild Gathering in January 2011 we sponsored a workshop on designing logos and labels by Graphic Designer George Clegg. George detailed label styles, the key parts of an effective label, the benefits and draw backs of different label materials and costs of producing your own verses hiring out the design or construction.

While we wish BKI could have been more successful as an organization, we are very pleased to have assisted several local food producers in developing and building their businesses. The Local Growers Guild will continue to serve as a clearinghouse of information for prospective food businesses, connecting them with farmers and kitchen space and other resources as requested. The Middle Way kitchen is a wonderful commercial kitchen that is available for rent. They hope to see increased utilization in a few years as farmers and food producers working under the home-based vendor law start to consider expansion to a wholesale level that would require using a commercial kitchen.

While BKI did work with several new small food processors to find kitchens and source local ingredients; please note that only those processors looking to utilize specialty crops were charged against this grant. BKI can confirm that all products were made with at least 50% specialty crop products and were sourced from 3 local producers.

GOALS AND OUTCOMES ACHIEVED:

Our project initially had 4 main goals.

1. Establish a marketing committee to provide guidance for the BKI and its clients on promoting locally produced food as part of a larger “Buy Local” campaign encouraging the support of all local businesses and products. The “Buy Local” campaign was largely achieved by the new group Local First Indiana working in conjunction with the Local Growers Guild.
2. Identify locally-owned small retail stores that could be a potential outlet for local food products and evaluate their willingness to work with BKI. We successfully contacted 50 stores and identified 8 that were very interested; Black’s Mercantile, Oliver Winery, IU Campus Stores, Lost River Coop, Goods for Cooks, Good Earth, Muddy Boots, and Bloomingfoods. Additional stores may have been interested, based on pricing, distribution, etc, but the project was halted due to lack of market-ready products.
3. Develop marketing materials tailored to different clientele that can be used as templates for BKI clients. We developed several sets of marketing materials designed to be used by BKI, the Local Growers Guild, Local First Indiana, retailers, and other organizations promoting local food.
4. Develop marketing workshops for BKI clients and other local food producers based on information gathered through this project. We hosted two formal marketing workshops and provided informal marketing support through one-on-one work with potential clients.

Our expected measurable outcomes had anticipated the continued growth of the Bloomington Kitchen Incubator and a stronger interest from farmers in selling more local food to retailers. However, we did achieve several of our expected measurable outcomes and showed progress towards others.

1. In 2010, at least 5 small food production businesses will be able to expand their sales by working with small retailers in the region. During the grant cycle, several local food businesses have started/expanded their businesses in the area. These businesses specifically worked with BKI to locate Specialty Crop Producers in the area to supply them with their ingredients during the start-up/expansion phase:
 - Picolli Dolci, owned by Maria Carlassare (Italian pastries made with locally grown herbs)
 - Food Works for Middle Way
 - Daddy Bob Peanut Brittle
 - Hope’s Homemades, created by Hope Lukens

· Pepitos, by Patricia Marvin

2. In 2010, at least 3 local growers will sell to new small food businesses. Although most new start-ups find local produced ingredients harder to source and more expensive, we connected Patricia Marvin with local pepper growers resulted in a more flavorful product. We still receive calls and assist new small food processors about finding kitchens and sourcing local ingredients; however, we have stopped tracking the outcomes.

3. In 2010, at least 10 retailers will add local food products to their shelves and utilize the BKI marketing materials. Although we did not complete this goal, due to a lack of new local food products, Bloomingfoods continues to expand their local selection and is using marketing materials, designed by James Reinhart's class.

4. In 2010, the Local Marketing Advisory Committee will help coordinate at least one large "Buy Local" campaign and event to promote small businesses. Local First Indiana, BKI, and the Local Growers Guild coordinated a very successful "Going Local Week" in September, which was repeated in September 2011.

5. In 2010, at least 5 jobs will be created through the creation/expansion of 5 small food production businesses. At least two full-time jobs were created – Maria Carlassare developed a full-time position for herself with Picolli Dolci and Middleway Food Works hired an additional manager in their business expansion. The other businesses choose to keep their primary jobs and supplement their income with their food businesses.

BENEFICIARIES:

Local food and local farmers continue to be heavily promoted by the Local Growers Guild, Local First Indiana, and small businesses such as Bloomingfoods that source local products. Materials developed by the graphic design classes will continue to be used by both. 3 local specialty crop farmers now sell their produce to new vendors because of this grant and 5 small businesses were matched up with these producers. Leftover grant funds from our project were approved by USDA to be reallocated to support the promotion of local food during the winter months as the winter farmers' market continues to expand in Bloomington.

LESSONS LEARNED:

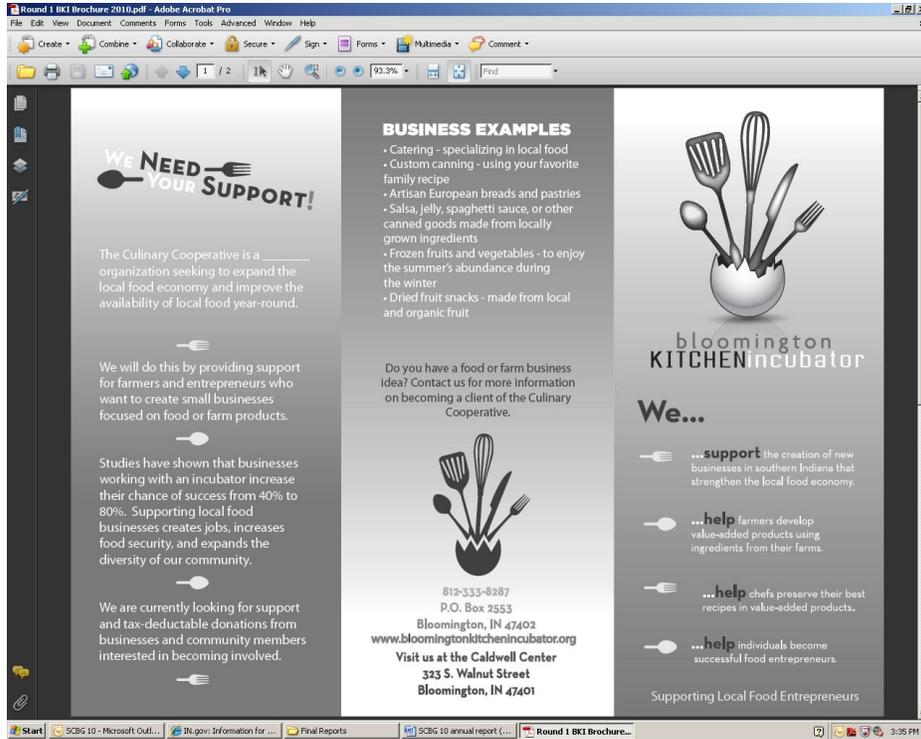
It is always difficult to predict the future. We were very surprised by the Home-Based Vendor law and the huge impact it had on local growers, who could now make many food products at home to sell at the farmers' market. This decreased the interest in a commercial kitchen drastically. We also realized that the surveys conducted in 2000 and 2001 when the Bloomington Kitchen Incubator was first being conceptualized measured the interest level among growers and cooks. Interest is different than commitment. BKI underestimated the number of people who would back out when faced with the actual challenge of starting a business, thus leading to a minimal number of dedicated clients for BKI. Many other changes have taken place on the political level in the last few years, including the redistricting of the Small Business Development Center in our area.

On the positive side, interest in local food continues to grow exponentially and support for local food producers is growing right along with it. While BKI was not successful as an organization, it was very helpful in creating more dialogue between different groups in the area that are interested in local business & the local economy and are ready to support local food producers as integral components of the local business scene.

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ADDITIONAL INFORMATION:



Round 1 BKI Brochure 2010.pdf - Adobe Acrobat Pro

File Edit View Document Comments Forms Tools Advanced Window Help

Create Combine Collaborate Secure Sign Forms Multimedia Comment

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SERVICES WE OFFER

“ Culinary Cooperative offers a variety of services to support food entrepreneurs in all areas of business ”

BUSINESS EDUCATION PROGRAMS
Every small business needs at least a basic understanding of business planning, bookkeeping, and marketing in order to thrive. We help our tenants find the training they need through the SBDC, Purdue Extension, and other local organizations, as well as offering more specialized classes through the incubator. Currently we are working with the SBDC to implement the N4Level business planning curriculum that is designed specifically for food and farm enterprises.

FOOD DEVELOPMENT PROGRAMS
For many entrepreneurs, legalities of food safety is the most complicated part of starting a food business. At this time, we assist our tenants to scale up recipes for larger volume production, write a HACCP plan, ensure that all labeling requirements are met and obtain approval by the Health Department and/or the FDA.

OFFICE SERVICES
As the incubator continues to grow, we will provide office space to our tenants including basic office equipment, access to the internet and more specialized equipment such as label printers and laminating machines. Along with these facilities, we will provide technical training in accounting and design software, email, and using the web as a research and marketing tool.

ONE-ON-ONE BUSINESS CONSULTING
We know that small business owners have many questions concerning the best way to operate. Our office is available to provide one-on-one business consulting and contact information for experienced business professionals such as accountants, lawyers, and SBDC consultants who are prepared to assist with the very specialized needs of food and farm businesses.

COMMERCIAL KITCHEN FACILITIES
The Bloomington Kitchen Incubator was developed as part of a larger project to open a timeshared, licensed commercial kitchen in Bloomington. This facility, located in the New Wang Building of Middle Way House, was specifically designed to allow access for farmers and entrepreneurs to create value-added products for retail or wholesale distribution. The kitchen is scheduled to open in 2009.

SEED MONEY
We work closely with the Small Business Development Center (SBDC), SEED Corp and other local agencies to identify funding opportunities for new or expanding businesses. Sources of funding may include traditional loans, specialized loans, grants, angel investments, or venture capital. We make sure our tenants understand the potential advantages and limitations of each funding option.

STORAGE/WAREHOUSE FACILITIES
All value-added products (frozen, dried, canned, baked, refrigerated, etc.) will need to be stored appropriately until delivered to the consumer. We have identified several potential facilities to expand the storage options for our tenants, whether they require consistent freezer space or simply a shelf in a facility licensed to store canned goods.

DISTRIBUTION CHANNELS
We constantly work to identify new market opportunities for our tenants. Demand for locally produced food is rapidly increasing. In partnership with the Local Growers Guild we maintain strong relationships with area food businesses (groceries, restaurants, schools, cafeterias) that are looking for local products. Some of our tenants may choose to market directly to consumers while others may pursue the wholesale market.

NETWORKING
One of the least tangible but most important benefits of working with an incubator is the chance to network with other entrepreneurs, farmers, and local businesses. We encourage tenants to cooperate in activities, such as sourcing materials (raw ingredients, bottles, cartons, etc.) and coordinating deliveries.

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PROJECT TITLE: Local Growers Guild Backpack Buddies Program

PROJECT SUMMARY:

The Local Growers' Guild (LGG) is a cooperative of growers in southern and central Indiana working to promote locally grown foods. The LGG has been very successful educating consumers about the importance of eating locally grown food, however, children are a group that could be targeted more effectively, therefore, their proposal is to launch a pilot project reaching out to children through the Backpack Buddies program of the Community Kitchen of Monroe County. This program distributes weekend food supplies to approximately one hundred families by sending a backpack of food home with low-income children at five elementary schools.

The Local Growers Guild collaborated with Community Kitchen of Monroe County to educate children about the importance of locally and sustainably grown fruits, vegetables, and other farm products. This was achieved by developing educational materials distributed through the Backpack Buddies program as well as offering locally grown and produced foods throughout the program. The backpacks provide supplemental food to low-income elementary school children and their families over the weekend.

PROJECT APPROACH:

LGG collaborated with eight farms, two farmers markets, and one local seed company to increase access to and create opportunities for low-income families to obtain nutritional, whole food as well as pertinent educational materials. LGG created 22 newsletters and 13 have currently been distributed. The LGG will have a surplus of newspapers that can be used in the future. All newsletters are archived for use in future projects, outreach and education, collaborations with schools, etc. Although less than 90-100 backpacks are distributed each week, over 100 families have been served since January 2010.

Only fruits and vegetables, honey and maple syrup were used in this program. And all newsletters focused solely on these specialty crops.

The educational materials were supported by university students of Professor Victoria Getty of Indiana University's Nutrition Program. Nine students in Prof. Getty's "N401: Issues in Dietetics" developed newsletters that cover nutritional information, recipes, activities, and reasons to buy whole foods and local products.

GOALS AND OUTCOMES ACHIEVED:

LGG distributed 17 products and vouchers redeemable at two farmers markets to eligible children through a total of 1,179 backpacks. This reached over 100 families. As a result of LGG's collaboration with Backpack Buddies Program, grower and producer members of the LGG cooperative became increasingly aware and interested in contributing to the program. There were 11 producers who contributed specialty crops to this project. Additionally, by offering \$10 vouchers to the Bloomington Community Farmers Market and the Bloomington Winter Farmers Market, families of the children that received the vouchers gained a greater exposure to fresh, nutritional and sustainably produced foods directly from local farmers.

Furthermore, in order to accommodate LGG's request to purchase vouchers for the Bloomington Winter Farmers Market (BWFM), the market advisory committee developed a

system for selling and receiving vouchers and gift certificates. The BWFM Advisory Committee views this development as a valuable tool for the future and growth of the market.

BENEFICIARIES:

Due to the reasons described above in the Goals and Objectives, the beneficiaries of the program were three-fold:

1. The children from over 100 families received the weekly supplemental food and educational newsletters – access to nutritional food, increased awareness of local and nutritional food.
2. Eleven Growers and producers – increased market as a result of backpack recipients’ greater awareness of local and nutritional foods as well as vouchers redeemable at Bloomington Farmers Markets.
3. Community Kitchen of Monroe County – Access to fresh produce and locally produced foods as contribution to the backpacks; Development of direct relationships to area growers and producers.

LESSONS LEARNED:

Although the grant support created important opportunities for the above beneficiaries, finding a approach to keep the relationships sustainable was of greater importance to the organizations and farmers involved. Local Growers Guild worked closely with the program coordinator of Community Kitchen’s Backpack Buddies Program so that community resources for obtaining local, fresh food could be identified and used once the grant is complete.

One identified solution is to collaborate with Hoosier Hills Food Bank, a food security organization that obtains thousands of pounds of fresh, often organic, produce annually through a variety of methods (e.g. gleaning at area farms, food bank garden at nearby organic farm, donations from vendors at the farmers market and other community sources). Additionally, Community Kitchen is encouraged to continue relationships with local growers and producers and to budget for purchasing wholesale produce whenever possible.

Furthermore, the program emphasized the importance of education when introducing new concepts to a particular demographic. The newsletters provided an opportunity for the children and their families to learn about new concepts regarding local food issues and nutrition in an easy-to-read and interactive approach. Without the newsletters, the significance of the contributing products would have been lost.

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ADDITIONAL INFORMATION:

The Local Growers Guild’s collaboration with Community Kitchen of Monroe County’s Backpack Buddies Program involved eight farms, two farmers markets, and one local seed company as a means to increase access and opportunities for low-income families to obtain nutritional, whole food. The need for continued access and education is vital for Bloomington’s children and families in need. Although LGG cannot support Community Kitchen in the same way without

continued funding, LGG and Community Kitchen have identified ways to seek out and obtain similar access to fresh, nutritional and local food from area agencies and programs.

The collaboration benefited not only the children and their families that received the supplemental food, but also the farmers that gained a larger market through increased education, and subsequent support systems for farmers (i.e. Bloomington Winter Farmers Market). Furthermore, the collaboration built relationships between farmers and Community Kitchen of Monroe County. As a result, any intermediaries (i.e. Local Growers Guild) are no longer necessary for providing fresh, nutritional, and local foods for the Backpack Buddies program.

There are no other sample materials or links to provide

PROJECT TITLE: Slow Food Indy

PROJECT SUMMARY:

The Growing Places Indy Slow Food Garden was established at White River State Park in March 2010. In year one, the garden was created with the help of volunteers, and maintained through a combination of two grant-supported contract positions, monthly community education workdays/workshops, and a 10-week summer Urban Farming internship program. Additional volunteer opportunities and group tours were organized on occasion by request. Food from the garden was sold to area restaurants and producers, sold at City Market Farmers Market, distributed by donation at an on-site farm stand, and excess was donated to Second Helpings. All tours, workdays and workshops included informative discussion of the specialty crops grown in the garden, the role of urban agriculture in promoting specialty crop production in Central Indiana, the relationship between the Slow Food vision for sustainable food and farming systems and increased specialty crop production.

PROJECT APPROACH:

In 2011, the garden was renamed the *Wishard Slow Food Garden*, as part of a partnership with Wishard Health Services, the public hospital and healthcare network in Indianapolis, to further urban agriculture and food access initiatives in Indianapolis. Based on lessons learned in 2010, some changes were made and new partnerships established. Volunteer and workshop opportunities were offered through a set weekly schedule, and we invited guest leaders in order to increase awareness of other organizations and individuals involved in increasing specialty crop production through urban agriculture in Indianapolis:

Summer 2011 Work & Learn Sessions in the Wishard Slow Food Garden @ White River State Park

Each Wednesday, 4-6 p.m. from June through August, Growing Places Indy hosted Work & Learn sessions in the Wishard Slow Food Garden. In addition to having the opportunity to volunteer, participants had the opportunity to learn from a workshop or guest speaker.

June 8 - Five Ways to Eat Local & Soil Blocking for Seed Starting – Growing Places Indy

June 15 – Trellising and Pruning Tomato Plants – Growing Places Indy

June 22 – Rain Barrel Demonstration for water collection – Circle City Rain Barrels, Andy Cochran

June 29 – Building a Lasagna Garden – South Circle Farm, Amy Matthews

July 6 – Soil Testing – Why, How & Results-based Actions – Center for Urban Health, IUPUI, Gabe Filippelli

July 13 – Planting Seeds of Change & Appreciating Diversity – City-County Councilor Maggie Lewis

July 20 – Eating for Health, Eat Your Colors: Understanding Nutrients in our Food (Eat Your Colors model teaches people how to diversify and increase vegetable and fruit consumption based and understand some nutrient benefits based on the color of the fruit/veggie) – Wishard Health Services, Registered Dietitians, Barb Amermand and Brandy Hauser

July 27 – Urban Bee Keeping – Center for Urban Ecology, Marjorie Hennessy

August 3 – Composting & Vermiculture – Castaway Compost, Keith O'Dell

August 10 – How to Plan A New Garden, Internship Final Presentation – 2012 Garden Plan

GOALS AND OUTCOMES ACHIEVED:

Our goals to operate a successful market garden, promote urban farming, promote specialty crops, promote sustainable agriculture, and to host a summer urban farming internship were all achieved. We are continuing this work, and adding a new urban farm site (8,000 sq ft) in 2012.

- Increase in overall specialty crop production and sales:

In 2010 our most popular products were husk (ground) cherries. We saw these for sale in very limited quantity at one other market (Broad Ripple) in Indianapolis the entire season. We also sold artichokes, celery stalks, salad mixes of specialty greens including: orach, endive, nasturium leaves and blossoms, edible cysanthimum leaves, salad amaranth leaves, parsley, fennel fronds and cilantro (mix varied during the season), multi-color/variety carrot bunches, yellow and albino beets, and malabar spinach all of which was either not available at all, or only from one or two in very limited quantity from other vendors at farmers markets in the area.

In 2011, our most popular products were kale, swiss chard, Jerusalem artichokes, husk/ground cherries, scallions, onions, fennel and artichokes. We sold more kale (multiple varieties) and celery than any other item. Our most profitable products were Jerusalem artichokes, onions and fennel. We also sold nasturium leaves and blossoms, herbs (parsley, cilantro, rosemary, chives, thyme, mint), radishes, lettuce, garlic, lavender, kohlrabi, multi-color/variety carrots and beets, broccoli, cucumbers, heirloom pole and bush beans, eggplant, hot and sweet peppers, all of which was either not available at all, or only in very limited quantity from other regional farms for farmers markets or restaurants. Interestingly, the rate of production of these types of specialty products and diversity of varieties is growing fastest from urban and peri-urban farms in the Indianapolis area.

We had an increase in gross sales from \$2,963.50 in 2010 to \$3,670.27 in 2011, growing on the same amount of land and with the same intensity of planting. The increase was the result of CSA membership sales, selling at a smaller farmers market with less competition from other produce vendors, adding the food coop as a customer, and increased restaurant sales. It is worth noting the Wishard Slow Food Garden is slightly less than 6,000 sq ft of growing space, our primary sales take place during a 10-week period, our goal is to serve an education and demonstration garden as much as to actively sell produce.

- Identify new specialty crops that local consumers are interested in:
In 2011 we expanded our sales market from one farmers market, a farm stand and restaurant sales, to a new farmers market, a 10-member 10-week CSA program, a new food coop and a new food truck. During the winter (2010-11), we met with the produce buyer from the food coop and the food truck chef, as well as a few chefs who bought from us in 2010, to determine specific crops that they wanted us to grow for the 2011 season. We polled CSA members to determine their preferences in relation to crops that we offered, and crops they would like to see included in the CSA in the future. We also kept detailed purchase records in order to know what products sold best, and preferred buyers (e.g. what products are popular with chefs, but not CSA members, or which items sell well at the farmers market, but are not preferred by chefs.
- Determine viability of the pilot garden as a sustainable method of food production as well as the viability of Slow Food Urban Farm Project as a replicable model for a local

food system.

The “Slow Food Urban Farm Project” became part of and known as “Growing Places Indy” in 2010 and the garden was renamed the Wishard Slow Food Garden in 2011 due to sponsorship by Wishard Health Services.

We are not able to measure the effect the Wishard Slow Food Garden may have had on the growth of specialty crops products regionally, but we can report on growth in urban agriculture. Due to the public visibility of the Wishard Slow Food Garden at White River State Park, we were offered land and the opportunity to start new urban gardens frequently. While Growing Places Indy did not have the staffing capacity to farm additional sites, we were able to consult the development of new urban farms and to advise on specialty crop selection based on our experiences selling at a farmers market, farm stand and to restaurants. Growing Places Indy directly supported the development of the following urban farms in Indianapolis in 2011:

- South Circle Farm – this diversified vegetables and cane fruit farm was started in February 2011. Growing Places Indy helped to identify and recruit a farmer for the site, which is owned by a community development corporation. In the first year, this farm added an acre of specialty crop production to the urban food shed, and sold to four farmers markets, a food coop, and several restaurants including some that had not previously purchased from local suppliers.
 - Sprouts Farm – a for-profit diversified vegetable farm/market garden (>1/4 acre) started by a young woman who had worked with Growing Places Indy and the Indiana Humanities Council in 2010. Grew for a small CSA and farmers market.
 - Indy Parks Urban Farm – a non-profit 3-acre diversified vegetable farm growing produce for Indianapolis food banks. Growing Places Indy consulted Indy Parks on the development of the farm site, assisted in recruiting a farmer, and selecting first year crops.
 - Butler Campus Farm – Throughout 2010-11, Growing Places Indy advised the farm on topics including crop selection, season extension, wash station and on-site produce storage systems, and helped connect the farm into sales outlets such as a campus CSA and restaurant sales. In 2010, two Growing Places Indy interns applied what they learned about urban farming at the Butler Campus Farm. While the farm is owned by a non-profit, the farm manager position is intended to transition to self-sustenance through the sale of produce within three years.
 - Big City Farms – the head farmers served as the farm manager for Growing Places Indy in 2010. In 2011, he expanded the size of this for-profit farm to increase the production of specialty crops to nearly 2 acres.
 - We continue to talk with other individuals and organizations interested in establishing urban farms and market gardens.
- Determine success of Farmin Summer Youth Employment Program.

The “Farmin Summer Youth Employment Program” became part of and known as Growing Places Indy, and was renamed “Sustainable Local Food Systems Summer Internship” in 2011.

The Growing Places Indy Urban Farming Internship was established in 2010, and hosted the first round of interns over a 10-week period from June through the first week in August. Five interns

participated and were paid through key community partnerships with IUPUI, Butler University and the Indiana Humanities Council. The Solution Center at IUPUI provided one intern position, the Center for Urban Ecology at Butler University provided two part-time interns, and the Indiana Humanities Council provided two positions for Herron High School students. Each intern position required completion of an additional project or hours with the funding organization.

Interns worked with Growing Places Indy staff four days a week: Tuesday, Wednesday, Thursday and Friday (see work schedule below). Every Tuesday involved harvesting and delivery of restaurant orders. Wednesdays were dedicated to harvesting for an on-site farm stand or vendor booth at City Market Farmers Market. Thursdays were dedicated to an enrichment activity, such as field trips to other area farms (Traders Point, Wild's Apple Farm), urban garden/farm projects (Felege Hiywot, Devington Acres, Big City Farms, Butler Campus Farm), restaurants (City Cafe, RBistro, Goose the Market, Pure Eatery), culinary schools (Chef's Academy) and Second Helpings. Fridays involved general garden care and related projects for developing signage, building bicycle veggie trailers, and other communication and promotion projects. The goal was for interns to come away from their experience with 1) transferable understanding of how to operate an income-producing urban "market garden" or farm; 2) a more connected and conscious understanding of food systems, the local food community/movement, sustainable and urban agriculture, and how food culture and agriculture relate. Intern feedback, IUPUI, Butler and Indiana Humanities Council feedback, our own observations, responses from the community and locations we visited all indicate the intern program was a success. We had two students join informally and without pay after hearing about the programming.

Intern Work Schedule:

College students 10 weeks - Tuesday, Thursday, Friday 8:30 a.m. - 12:30 p.m.; Wednesdays 8 a.m. - 2:30 p.m.

High School students 8 weeks - Tuesday, Thursday, Friday 9:30 a.m. - 12:30 p.m.; Wednesdays 8 a.m. - 2 p.m.

The internship program was revised for 2011, based on the 2010 experience. While some interns were directly interested in pursuing further work in market gardening and farming, interest in the internship was more generally oriented toward understanding sustainable and local food systems, the emerging role of urban agriculture, and the relevance of agriculture and concepts like "specialty crops" to their lives and the general public. With this understanding the internship was adapted to the *Sustainable Local Food Systems Summer Internship*. Growing Places Indy wanted to ensure the internship experience provided interns with opportunities and support for personal development. In addition to broadening the scope of Work & Learn workshops (open to public), fieldtrips (restricted to interns) were designed in a Work & Learn manner in which interns participated in some type of educational work project or discussion as part of each fieldtrip. Personal development was incorporated through daily check-ins and weekly themes to be explored on personal level as well as in relation to the activities and garden work of the week.

For example: "Diversification" – This is an important concept in the conversation of increasing production of specialty crops. Growing Places Indy educates interns (as well as volunteers and tour participants) about the benefits of crop diversification and biological diversity in creating a financially and environmentally sustainable farm system. Specifically, how diversification

through specialty crop production can help build financially and environmentally sustainable farms. We then relate the concept to the benefits of racial, ethnic, economic and ideological diversity in creating businesses, schools, governments, neighborhoods, cities and other types of institutions and social structures that are robust, adaptive, innovative and otherwise healthy and sustainable.

The internship was 10 weeks for all participants in 2011, with a total of 20 hours per week plus writing for the newsletter and other “homework” activities. Three college and one high school student were contracted as interns, in addition to one assistant farm manager. These positions were paid through a combination of funding sources. One other individual chose to participate in the complete internship program as a volunteer when we did not have funding for an additional position.

Weekly Schedule:

Monday – 9a.m. - 3p.m. (6hrs)

Tuesday – 8:30a.m. -2:30p.m. (6hrs)

Wednesday – 8:30a.m. -12:30p.m. & 2:30 -6:30p.m. (8hrs)

Summer 2011 Internship Work & Learn Field Trips

Similar to the Work & Learn Sessions, intern field trips were intended to expose participants to other urban farms growing specialty crops, consumer markets that present growth potential for local growers (such as institutions and grocers), and other ways to promote the expansion of local food systems through public education.

June 6 – Pogue’s Run Green Grocer – visit and learn the history of Indianapolis’ first food coop and the low income neighborhood in which it is located; Big City Farms – visit and learn about the history of Indianapolis’ first for-profit urban CSA farm; Urban Berry Foraging – experience and learn about food foraging in urban areas. (Potential growth market.)

June 13 – Wishard Health Services – Dr. Lisa Harris, Matt Gutwein. Michael Kaufmann & Ken Meter – Discussion about the past, present and future initiatives of Wishard Health Services to support urban agriculture and improved food equality in the promotion of community health. (Potential growth market and public education to increase local specialty crop – fruit and vegetable – consumption.)

June 14 - South Circle Farm – assisting in the creation of new beds for planting. (For profit specialty crop farm.)

June 15 – Indiana State Museum – Art of the Nation tour and discussion of how the policies initiated during WWI and WWII relate to the present day food system and food policies (Public education.)

June 28 – Felege Hiywot Center – tour & assisting youth workers in weeding and other garden work, discussion of the history of the organization and the impact the addition of a garden has had on the individual youth served by the Center, as well as the surrounding community. (Non-profit specialty crop garden, public education.)

July 12 – Garden to Table Lunch – picked, prepared and plated by Growing Places Indy internship team. (Experiential education – have to know how to prepare specialty crops in order to be interested in purchasing them.)

July 20 – Safe Soils & Urban Gardening Guide Meeting @ MCHD with Purdue Extension, Center for Urban Ecology & Center for Urban Health – discussion of elements of an Indianapolis specific how and why to garden guide. (Public education.)

August 8 – Second Helpings – Tour and Conversation with Board President Jerry Adams and CEO Jennifer Vigran about the challenges and opportunities for hunger relief agencies and the local food movement to better communicate and work together. (Potential growth market and public education.)

We believe the internship program was a success. We had more applicants than positions in 2011. We had one intern from 2010 return for a second year because she has a genuine interest in urban farming and found the programming both years prepared her better to pursue that goal than any other opportunity in Central Indiana. We had an individual participate unpaid due to the quality of the educational components of the internship. Follow-up communication has found interns both years are committed to buying locally grown fruits and vegetables whenever possible, despite being in high school, college or one year out of college. They also report encouraging family members and friends to purchase more locally grown fruits and vegetables. Several interns have gone on to participate in other campus, community initiatives, or jobs (including working on rural farms) related to urban agriculture and local food systems.

BENEFICIARIES:

Our mission is to empower individuals and communities to Grow well, Eat well, Live well and Be well. In the pursuit of this mission, Growing Places Indy will continue to engage the community through the Wishard Slow Food Garden, the internship program, Work & Learn opportunities for volunteers, other workshops and events, and informative and educational tours related to 5 Ways to Eat Local, Sustainable and Urban Agriculture, and the concept of Slow Food.

Additionally we will continue to grow specialty crops to sell through a CSA membership, farmers markets, to restaurants and local grocers, and we will continue to donate any excess produce to local hunger relief organizations. We are actively exploring achievable new educational projects, programming and partnership, primarily related to encouraging vegetable gardens and small farms in urban areas, as well as increased fruit and vegetable consumption from Central Indiana farms.

In addition, Slow Food Garden Adventures were offered at the Wishard Slow Food Garden in a partnership with the Indiana State Museum (ISM). The ISM promoted and scheduled the opportunity as part of an exhibition called Art for the Nation that included historic WWI War Garden and WWII Victory Garden propaganda posters. Growing Places Indy offered a guided working garden experience include harvesting, general care and planting for the Slow Food Garden Adventure. The ISM is located on the grounds of White River State Park, adjacent to the Wishard Slow Food Garden.

Growing Places Indy also partnered with the Eiteljorg Museum of American Indians and Western Art, which is located on the grounds of White River State Park, within view of the Wishard Slow Food Garden. The Eiteljorg organized for an expert on food traditions of the Miami people (indigenous to Indiana) to lead three activities, which Growing Places Indy promoted and hosted. The first was a planting of Miami varieties of corn, squash and beans (specialty crops) in the Miami tradition. This planting took place in the Wishard Slow Food garden (June 1, 2011), and Growing Places Indy is now responsible for saving the seeds to share back with the Eiteljorg for educational purposes. The second was an end of season harvest of the corn and beans (Sept. 21, 2011). Volunteers participated in both experiences, and information about both experiences was shared on the Growing Places Indy web site and facebook page. The final event was a potluck dinner at the Eiteljorg, preceded by a tour of the Wishard Slow Food Garden (Oct. 7, 2011). During the dinner, the Miami food traditions expert passed around and talked about different plants that were/are important to the Miami people for food and other purposes.

Other partnerships and educational tours included but were not limited to:
Herron Summer Art Camp – Growing Places Indy provided the Herron Summer Art Camp with a sustainable agriculture fact related to each letter of the alphabet. Growing Places Indy spoke to each summer camp group (5 groups) about Slow Food, Sustainable Agriculture and Five Ways to Eat Local, and campers drew pictures associated with the sustainable agriculture alphabet facts. (June 15, 22, July 13, 20, & 27, 2011)

Center for Urban Ecology Summer Intern Tour (July 25, 2011)

Goshen University Agro-Ecology Tour (July 27, 2011)

Purdue University, Environmental Engineering Summer Researchers Tour (August 4, 2011)

National Garden Writers Association Tour (August 29, 2011)

Future Farmers of America (FFA) Career Success Tour – Urban Agriculture Tour including Wishard Slow Food Garden, South Circle Farm and Big City Farms (October 20 & 21, 2011)

During the summer of 2011, Growing Places Indy consulted on the development of a partnership between a local urban farm and a local health care provider to create a Community Supported Agriculture vegetable distribution program to provide a box of vegetables to participants in a program that works to promote healthy lifestyle choices primarily for obese and overweight persons seeking care from the health care provider. The program was so successful at increasing vegetable consumption that the program's dietitians and wellness coaches involved in the summer CSA program are now distributing Veggie Bucks vouchers for redemption at the Indy Winter Farmers Market to patients to encourage them to increase vegetable consumption.

LESSONS LEARNED:

- A. Direct conversation about “specialty crops” did not engage people as effectively as conversation about local farm networks and how to enjoy increased vegetable and fruit consumption by eating local. In year two (2011), we adopted the theme “Five Ways to Eat Local” and put up corresponding educational signage in the garden. We selected 5 ways, because there are five sections built into the Wishard Slow Food Garden. The goal was to plant each section for a different “client” representing one of the 5 ways to eat local:
 - Grow your own – we grew specialty crops selected specifically for donation to a nearby neighborhood food education effort.
 - Farmers markets – we grew specialty crops selected specifically to sell at the Wishard Farmers Market.
 - Community Supported Agriculture (CSA/Vegetable Subscription Program) – we grew specialty crops selected specifically to be distributed through a CSA membership program.
 - Neighborhood Grocers – we grew specialty crops selected specifically to sell to a local food coop (including pre-planting consultation regarding products they would like to purchase in small quantity from an urban farm).
 - Restaurants & Food Trucks – we grew specialty crops selected specifically in consultation with a local food truck chef for sale to her throughout the season.

The “Five Ways to Eat Local” approach was an easy way to create an interactive conversation by asking people to guess the 5 ways represented/served by the Wishard Slow Food Garden. It also provided easy action steps for individuals looking for opportunities to become more involved in the local food system. We encouraged them to seek out these 5 ways to eat local in their

community/city/region, and to ask about the origin of fruits and vegetables for sale or in meals at farmers markets, grocers, and restaurants. If they could not find locally grown specialty crops in their area, the 5 ways gave them a simple model for encouraging the creation of a local food system – be it by growing their own, or something more ambitious like starting a farmers market or food coop, or asking grocers and restaurateurs to seek out sourcing from local growers.

B. Sales Models:

- We learned it was of great benefit to sell in the CSA membership model, as it was more dependable both for revenue generation and produce distribution than farmers market and farm stand sales.
- While there were benefits to pre-season meetings with the food coop produce buyer and local chefs, it did not always work out that the chefs would follow through in their buying commitment, or crop failures would make it difficult to meet a chefs order if items intended for chefs were needed for the CSA or simply unavailable. We also found that with some products, the price difference between what the food coop could pay wholesale and what the same product could bring at a farmers market or restaurant sales was too great to justify sales to the food coop. We learned what crops we could grow for wholesale clients in the future, and what crops we would reserve for CSA, farmers market and restaurant sales.

C. Urban agriculture is highly effective at engaging the city-dwelling population in conversation, consideration and direct action related to specialty crop consumption. People are more willing to try new fruits and vegetables, are willing to pay a higher price for produce than the typical grocery store price for the freshness provided at a farmers market or in a CSA, and are more interested in eating more fresh produce when they can engage in one of the following ways:

- Visit the farm
- Work/Volunteer on the farm
- Meet the farmer
- Read a sign or have a conversation at the point of sale (market stand, menu) indicating that the produce was grown in an urban market garden/farm

This was exemplified to us in a number of ways:

- Restaurants expressed a desire to purchase as much from urban farms as could be provided.
- CSA members reported willingness to try eating new fruits and vegetables when they have the opportunity to talk with the farmer (us or otherwise).
- Growing Places Indy assisted with a free CSA program between a local healthcare provider and another urban farm, in which the participants reported eating more vegetables and subsequently desiring more vegetables in their daily diet. After the CSA, participants requesting gardening education to learn how to grow their own vegetables and fruits. Members (most of whom were low-income) became notably more interested when the farmer came to speak and told them about his urban farm and the different vegetables they'd be receiving.
- Consumers at farmers markets would stop, inquire and then buy in response to a sign on the table reading, "These vegetables were brought to market by bicycle" or "These vegetables were grown less than a mile away."
- Interns and volunteers in the Wishard Slow Food Garden were more interested in trying new vegetables when they had done work related to the care or harvest of

those vegetables. The interns were especially motivated to be able to tell CSA members and farmers market customers how to prepare more unusual vegetables, so they wanted to prepare them to try themselves first.

CONTACT PERSON:

Laura Henderson

Executive Director, Indy Winter Farmers Market

laura@growingplacesindy.org

ADDITIONAL INFORMATION:

In addition, we worked hard to label crops growing in the garden, so visitors could identify them when no one was working in the garden.

PROJECT TITLE: National Maple Syrup Festival

PROJECT SUMMARY:

According to the Indiana Maple Syrup Association (IMSA) there are approximately 150 maple syrup producers in the state and total reported production in 2008 was 9,800, up 95% from the

previous year and the highest production since 2005. According to some producers, Indiana's actual annual production is considerably higher than the numbers reported on the annual IMSA survey and that Indiana producers likely produce (or have the capacity to produce) 40,000 gallons per year.

In 2009 one producer closely associated with the National Maple Syrup Festival, began marketing their product in the Indianapolis and Chicago markets. Key components of their marketing strategy included connecting their product closely to the National Maple Syrup Festival, building a brand that capitalizes on "Indiana" as home to quality agricultural and specialty crop products, and by packaging their syrup as a specialty gourmet product. The difference between the sale prices reported in the ISMA survey and what this particular producer was able to charge is staggering. If more producers begin marketing their syrup as a high-end product significant gains in revenues will be realized. This is a prime opportunity to impact the Indiana maple syrup industry by (1) expanding the Indiana Maple Syrup Festival, and (2) promoting Indiana as home to premium maple syrup products. As a result, the profit margins for Indiana maple syrup producers have the potential for significant increases.

1. Large signs, promoting the National Maple Syrup Festival, were constructed and placed among well-traveled highways. Yard signs were produced to promote the festival and were placed in various surrounding areas. Many directional signs were created in efforts of providing the exact location of the festival.
2. Through the funding of the SCBG, we were able to produce a mass quantity of "Rack Card" brochures promoting the festival in various locations throughout the state of Indiana. Brochures were shipped to the many rest areas along the Indiana interstates, advertising to Hoosier's as well as visitors of the Hoosier state.

PROJECT APPROACH:

With the SCBG, a commercial was produced and posted on the National Maple Syrup Festival website. We also posted on several web based sites which encompassed the states of Indiana, Ohio, Illinois, Minnesota, Wisconsin, Michigan, Pennsylvania, Virginia, West Virginia, New Hampshire, New Jersey, New York, Connecticut, Vermont, Massachusetts, Maine for a better return on a large market.

A data base was acquired containing all Indiana, Ohio and Kentucky radio station with email addresses for the Station Manager, News Room, News Director. This allowed us to send our radio commercials in a timely manner to promote the National Maple Syrup Festival.

GOALS AND OUTCOME ACHIEVED:

Through the efforts of our mass media distribution, we were able to increase our attendance by 25% from 2009. By demonstrations of the tapping of maple trees, witness the collection of maple sap and watch the sap boil down to the final product, we were able to promote the probability of increasing the numbers of maple syrup producers in the state of Indiana. Through efforts of the festival, we were able to "showcase" maple syrup as well as make the public aware of maple syrup being a specialty crop in the state of Indiana. Those producers who participated in the festival saw an increase in prices of their products of 10% per gallon.

We kept our web site, www.nationalmaplesyrupfestival.com, up to date and included pictures of the "happenings" of the festival. The web site address was included on all festival advertising.

Website hits were tracked and compared to those prior to this grant award and advertising and found a 350% increase in page hits. Free samples of 100% pure Indiana maple syrup was offered to all attendees, in hopes of increasing the likelihood of future purchases. A select sample of attendees were surveyed after the festival and found there to be a 45% chance of likelihood of purchasing Indiana Maple Syrup in the future. Because of our mass media efforts directly resulted in the announcement of the National Maple Syrup Festival on NBC's nationally televised program "Late Night with Jimmy Fallon".

BENEFICIARIES:

Education was everywhere at the National Maple Syrup Festival. While watching the production of maple syrup, questions were encouraged from the attendees and various educational methods were exercised to answer all inquiries. There were several historical re-enactors providing verbal education as well as demonstrations of the production of maple syrup, maple sugar and maple candy. Some of the methods used in the demonstrations were the use of hot rocks dropped in maple sap which would boil the sap without the use of an open fire; boiling maple sap in a large metal pot over an open fire, until the sap crystallized to form maple sugar; using open fire pit to boil the maple sap, which was poured into wooden bowls and constantly stirred until the sap turned thick, making a form of maple sugar to make candy. Hundreds of grade-school aged children were able to have hands on experiences tapping maple trees, collecting maple sap and watch the making of maple syrup. We also had an educational speaker in the children's tent, which used a puppet show to teach the children about the history and production of maple syrup. Educational audio CD's were produced and played on the school buses on the way out to the farm which every event attendee was able to hear. The narrative CD's provided historical highlights of maple syrup production as well as a brief explanation of local history.

LESSONS LEARNED:

We will produce more detailed signage for the 2011 National Maple Syrup Festival, offer more educational "hands on" activities for children attending the festival, we are reserving needed items much earlier for the 2011 NMSF so we can ensure they be available to us when the time of the festival arrives, continue to encourage all maple syrup producers to attend and showcase their product.

CONTACT PERSON:

Kelly Turner, President
Co-chair of the National Maple Syrup Festival
812-966-2761

ADDITIONAL INFORMATION:

www.IndianaMapleSyrupFestival.com

PROJECT TITLE: Indiana Christmas Producers

PROJECT SUMMARY:

Indiana ranks twelve on a national scale based on the total number of Christmas trees harvested in the state, with nearly 200,000 trees harvested in 2007 (www.agcensus.usda.gov). The 2007

Census of Agriculture shows that the number of Indiana growers has decreased since 2002 by 24% and the total acreage in Christmas tree production in Indiana has decreased by 44%. Much of this decline is due to the ability of retail merchants to promote artificial trees manufactured offshore. Consumers need to be made aware of the environmental and economic benefits that “Real Trees are for Real Christmas Memories.” The association believes this decline in the Indiana industry is due to several factors.

Consumer preferences for species changed substantially. Although Scotch pine remains the preferred tree in Indiana, various fir species are now in high demand. The various fir tree species usually have a value of at least twice that of Scotch pine trees. Third, the industry has been severely damaged by the artificial tree industry. Artificial trees are heavily promoted by the retail industry because they come in a box, are a manufactured sterile item and do not have a shelf life.

Indiana’s industry is composed mostly of relatively small choose-and-cut operations. The average size of a farm is about 15 acres. The Indiana industry simply does not have the resources to promote the positive attributes of “Real Trees” and counter big name retailers that are promoting and marketing artificial trees.

Eight news releases were written to be published about many facets of the Christmas tree industry. Titles of the new releases include: Ready for Christmas 2016, Grooming Your Indiana Fresh Brand Christmas Tree, Preparing for a Busy Season, Selecting an Indiana Fresh Christmas Tree, A Real Tree – The Environmental Choice, Real Christmas Tree Season in Full Swing, Keeping Your Christmas Tree Fresh, and Recycling Your Indiana Fresh Christmas Tree.

PROJECT APPROACH:

A Media directory list was purchased to distribute the news releases throughout the state of Indiana. All media news releases were distributed electronically to print, radio and TV media.

A 30 second TV commercial entitled *A Real Tree for a Real Christmas* was professionally produced and aired from November 15 – December 15 on TV stations throughout the state of Indiana.

A 30 second radio commercial was professionally produced and aired from November 15 – December 15 on TV stations throughout the state of Indiana.

The ICTGA website was redesigned and online by November 1, 2010.

GOALS AND OUTCOMES ACHIEVED:

1. Improve public awareness of the environmental-friendly benefits of the real Christmas trees.
2. Increase sales in Indiana by 10% and thus reduce imports of Christmas trees from other states and sales of artificial trees. This will, in turn, expand the local industry and economy.
3. Increase the visibility of the ICTGA and its benefits to both members and non-members. Part of this was done through the group’s website <http://indianachristmastree.com/>

The ICTGA website was totally redesigned and online by November 1 for the 2010 selling season. The new website includes consumer information including a map to locate local tree farms, Christmas tree care tips and environmental benefits of a real tree. It also includes a

members section about ICTGA activities and membership. Page hits were measured on this site from November-December 2010 and were compared against number in November-December 2011. This webpage saw an increase in 23% from one year to the next.

All news releases, TV/radio commercials directed consumers to the website to learn more about the environmental benefits of a real Indiana fresh Christmas tree and to locate a tree farm in their area.

Members of the ICTGA were asked to survey customers about the media exposure. The consensus was that most new customers found Indiana tree farms online by searching the internet or being referred to the ICTGA website.

Overall the results of the membership survey on 2010 tree sales compared to 2009 sales indicated that most farms had an increase in business. Of the 34 survey responses, 21 indicated an increase in sales, 3 stayed the same as last year, and 10 reported a decrease in sales. The average increase in sales was 12.3%. Of the individuals reporting a decrease in sales, three were weather related and one was due to biological problems with their trees. In addition to increased awareness of the Indiana Christmas Tree Association by consumers we have signed up eight new ICTGA members since the start of our membership drive in January 2011. 73% of current members had renewed their membership by the end of February.

BENEFICIARIES:

The Indiana Christmas Tree Growers Association felt that the media campaign and website redesign was very successful in increasing the awareness and purchase of a real Christmas tree in Indiana. We need to continue with our efforts to promote the sale of real Christmas trees to support the industry, local economy and family traditions. The trend is toward social media networking. Now that we have a consumer-friendly website we need to expand our presence in social media through better utilization of Facebook, blogs, YouTube and other internet based avenues. Educating our members on the use of social media in their own marketing efforts is another goal of the association.

LESSONS LEARNED:

It is difficult to get a real percentage for the change in tree sales because the increase or decrease in sales is so dependent on uncontrollable factors such as the weather and tree issues. There is also the issue of growers currently selling their maximum available trees so there is no opportunity to grow in numbers of Indiana grown trees unless they are able to increase the acreage to be able to offer more trees. We needed to do better at the management/timing of the grant funding in relationship to the grant expenses.

It is difficult to be "fair" with media coverage throughout the state when some areas have several ICTGA tree farms and other areas have very few ICTGA farms. The cost effectiveness of being fair had to be evaluated in relation to the number of farms in different media areas.

CONTACT PERSON:

Kerry Dull
ICTGA Secretary/Treasurer
dulltree@bremc.net

ADDITIONAL INFORMATION:

ICTGA Website: <http://www.indianachristmastree.com/>

A Real Tree for a Real Christmas Commercial

http://www.youtube.com/watch?v=q7Z4LLwo2ds&safety_mode=true&persist_safety_mode=1&safe=active

PROJECT TITLE: A Taste of Indiana

PROJECT SUMMARY:

In an effort to introduce Indiana grown produce to Indiana consumers, the Indiana State Department of Agriculture (ISDA) partnered with the Indiana Humanities Council as well as some other various non-for-profit agencies in the state to develop and implement a day devoted to highlighting Indiana specialty crops at local restaurants. In order to sell Indiana produce to Indiana consumers, the general public must develop an understanding of why they are

important, what they do for the local economy, and how to use them in their own kitchens at home. ISDA outlined the steps to be taken to establish the continuation of consumer outreach and communication associated with this event, and continues educational programs throughout the year leading up to the 2010 event.

PROJECT APPROACH:

ISDA, in conjunction with the Indiana Humanities Council, Indiana Office of Tourism, the White River State Park, IN Shape Indiana and educators located throughout the state, held a very successful campaign kick-off to promote the Taste of Indiana in August of 2009, hosted the first Dig IN in 2010.

Dig-IN allowed consumers to start to associate with the fresh, quality produce in their area, they also learned how to connect with chefs, restaurants, farmer's markets, CSA's and other resources through which they can buy local and make dishes in their own kitchens. Local restaurants featuring seasonal menus, and the assessments from various industry publications regarding 'local' as one of the primary trends in food right now, we believe that this event helped provide a new avenue for specialty crop producers around the state to showcase and directly market their products to a captive audience in an environment that will allowed them to both educate and establish relationships that will lead to repeat business and industry growth. Many producers were on hand to discuss their farms, location and produce with visitors.

ISDA's Program Manager worked with ISDA's Communication Department as well as select members of the Indiana Humanities Council and to develop print materials for the promotion of the Taste of Indiana including banners and signage around event to highlight the producers and produce who are there.

GOALS AND OUTCOME ACHIEVED:

Surveys were conducted after the August 2010 event from chefs and the beer and wine vendors. All of the chefs at the event were surveyed and were pleased with the quality of Indiana grown produce they received. And the beer and wine vendors surveyed state that this event was great exposure for them and figured about 33% of the people in attendance were new to sampling their wine therefore increasing their products consumer awareness.

ISDA also tracked website hits once the site was launched, and received over 11,000 page hits. This was very similar to last year's page hits.

ISDA engaged approximately 75 specialty crop producers (including farmers' markets, locally-focused restaurants and specialty crop producers). While this number is the same as the previous years it does account for more specialty crop producers than in the past. ISDA anticipates producers having an increase in sales through the visibility and recognition of their products at this event and will be better able to gauge their success next year when the growing season is finished.

ISDA anticipated 10,000 attendees and while we missed that market by 5,000 we believe that was due to the extremely hot weather 95 degrees plus the day of the event.

BENEFICIARIES:

Groups that benefited from this event include Indiana farmers' markets, locally-focused restaurants and specialty crop producers. There were 75 specialty crop producers involved in

this event. They benefited from having their products showcased by local chefs and having event attendees learn where they can go to purchase their products. The citizens of the state of Indiana also benefited and were given an opportunity to connect with where their food comes from, and how to support their local, food economies. This event also increased business opportunities for producers and local chefs to do business together.

LESSONS LEARNED:

ISDA did learn that picking your partners for such an event was a crucial aspect to the success of the event. In the beginning there were other partners who ended up not being a good fit for this project so based off the Food for Thought initiative that the Indiana Humanities Council has for exploring ideas on all things food related. This seemed to be a natural fit and compliment Dig-IN nicely.

Attendance to the event was not as high as ISDA would have liked but for an In-Augural event we were pleased with the effect the event had on those who attended and the buzz the event generated.

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Additional Information

The Dig-IN website can be found at <http://digindiana.org/2011/index.html>

PROJECT TITLE: Indiana University – Market Analysis

PROJECT SUMMARY:

Currently, in the United States there is a boom in the demand for direct agricultural markets for specialty crops via local food systems (DeLind, 2006). Embedded within this movement are two main venues for local specialty crop consumption, Community Supported Agriculture (CSA) and farmers' markets (Hinrichs, 2000). CSA programs are direct farmer-to-consumer relationships in which the consumer invests time and money into a local farm in exchange for a weekly share of the farm's bounty. Farmers' markets, alternatively, are venues where local farmers transport

their produce to a centralized point in order for the public to select from the many options at their disposal. Generally, proponents of local food systems that promote specialty crops trumpet the ecological and economic benefits, while only giving cursory attention to nutrition, and rarely addressing issues of social justice and equity in local food availability (DeLind, 2002; Conner, 2004). Further, recent research has shown that CSAs have a high turnover rate primarily due to members' lack of knowledge of and motivation for seasonal cooking and eating (Durrenberger, 2002; Goland, 2002; Wells, Gradwell, and Yoder, 1999). The current project will investigate the factors that contribute to local food consumption (CSAs and farmers' markets) of specialty crops, addressing four primary questions:

- 1) Why do people participate/not participate in local food systems?
- 2) What are the realized benefits and perceived benefits of consuming specialty crops and participating in local food systems?
- 3) What solutions exist to high member turnover and increasing CSA membership for long term consumer retention and consumption of specialty crops?
- 4) How do the specialty crop consumption habits compare between participants of local food systems and local food system non participants?

This project included the assessment of participation in farmers markets and community supported agricultural programs, as well as the assessment of why individuals do not engage in either activity.

PROJECT APPROACH:

The process included four primary phases. Phase 1 entailed interviewing farmers market, CSA, and non-participants to explore the variables affecting participation in local food systems. Based on the outcomes of Phase 1 and the current peer-reviewed literature, three questionnaires were developed and used to solicit data in Phase 2. In total, 712 individuals participated in Phase 2. Phase 3 included 40 follow-up interviews among participants from Phase 2, which allowed the researchers to gather greater depth of information and explore questions arising from Phase 2. Finally, Phase 4 entailed the project team developing two marketing tools based on the findings of Phases 1-3. These include a poster to promote farmers' markets and an informational brochure for CSAs to distribute. A comprehensive list of CSAs in Indiana was developed and each has been mailed 75 of the educational brochures. The project team has finished mailing 20, 11"x17" posters to farmers' markets throughout Indiana. A technical report of the project has been developed and is posted at <http://science.marshall.edu/farmerj/INlocalfoods.pdf>. This address is being provided to all CSAs, the farmers' markets being mailed, and to any other interested parties.

GOALS AND OUTCOMES ACHIEVED:

The goals of this project were to develop an understanding for consumption of specialty crops via CSA programs and farmers' markets and to disseminate the results to CSAs and farmers' markets throughout Indiana. Specifically, this project sought to comprehend why people elect to consume local specialty crops and what they gain from such consumption.

Original Measurable Outcomes (Status in italics)

☐ Identification of variables promoting and inhibiting participation in CSA programs and farmers' markets,

Based on the findings of the project, the following variables appear to affect participation in farmers' markets and CSAs. Greater discussion is given in the technical report.

- o Convenience of times venue is open*
- o Convenience of location of venue*
- o Knowledge concerning the existence of the venue*
- o Vendors acceptance of credit/debit cards*
- o Income level*
- o Proximity to venue*
- o Values for locally grown foods*

☒ Identification of outcomes from participation in CSA programs and farmers' markets,

Based on the findings of the project, the outcomes for participating in a CSA include:

- o Sense of community*
- o Knowing where your food comes from*
- o Knowing how your food was grown*
- o Active protection of the environment*
- o Access to nutritional and fresh food*
- o Access to sustainably grown food*

Based on the findings of the project, the outcomes for participating in FM include:

- o Recreational opportunities*
- o Access to nutritional and fresh food*
- o Community development*
- o Sense of belonging*
- o Access to safe food*
- o Knowing how the food was grown*

☒ Development and dissemination of market promotion material to CSA programs and farmers' markets and by CSA programs and farmers' markets,
o CSAs have been mailed 75 brochures and the project team is still trying to identify viable mailing addresses for farmers markets. See enclosed marketing material and that on pages 50-52 of the technical report.

☒ The development and dissemination of a detailed final project report will be provided to the Indiana Dept. of Agriculture and all agricultural entities with interest in the projects outcomes.
o The project report web address is being mailed to farmers' market directors and CSA operators. It can be found at the following link: <http://science.marshall.edu/farmerj/INlocalfoods.pdf>

BENEFICIARIES:

The results of this project suggest five salient ideas. First, the results indicate that members of the local food system must educate potential consumers of specialty crops on the benefits, including food qualities, supporting the local community, and sustainable agriculture and the environment. Word of mouth continues to be the most effective mechanism for promotion; however, it can be enhanced through internet social media. Secondly, based on findings from Phase 1 and observations made throughout Phase 2, recreational experiences incorporated into farmers markets appear to draw a greater number of consumers. These individuals utilize the

market as both a venue for food purchases, as well as a venue for leisure behavior and socializing. Third, according to the results on marketing, CSA marketing is dominated by grass roots involvement that most notably uses word of mouth and internet networks to attract new customers. Fourth, data from the non-participants suggest that farmers markets on days other than Saturday may prove fruitful in providing access to specialty crops for those whose schedules do not permit Saturday morning visits to the market. Finally, data from non-participants also indicates that getting specialty crops in venues where people commonly shop would bolster the consumption of local-specialty crops. This project directly impacted 17 Farmers' Markets and 13 CSA's. However the amount of people and programs the results from this study could benefit are innumerable.

LESSONS LEARNED:

A plethora of lessons were learned concerning this project. The most notable lesson includes information on the average participant for each venue. The majority of participants for farmers' markets and CSAs were female, Caucasian, had a higher than average level of income and education, and whose values for locally raised specialty crops include concerns for the environment, the nutrition of the food, and supporting the local community/farmers. Additionally, we learned that the internet is a viable marketing option, especially for CSAs. Other information gleaned from this project is included in the technical report and highlights the following:

- ☒ Common specialty crop purchases
- ☒ Buying habits
- ☒ Cooking habits
- ☒ Motivations for participation
- ☒ Constraints to participation
- ☒ And a multitude of other findings.

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ADDITIONAL INFORMATION:

CSA Brochure.pdf - Adobe Acrobat Pro

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Community Supported Agriculture and Your Family

Do you know what a CSA is? Are you ready to take the next step in getting local foods and supporting local farmers? Is your schedule making the farmers' market inconvenient for you? Would you like to learn more about local agriculture and how the food you are eating is produced? Consider a CSA!

What is a CSA?

A Community Supported Agriculture (CSA) program is a subscription program in which the consumer pays a fixed and generally one-time up front fee in exchange for a weekly allotment of the farm's bounty over a given period.

Fresh.

Ripened by the sun and picked with caring hands, the fruits and vegetables produced from your local farmer's fields is the next best thing to growing it outside your kitchen door. The items coming from your CSA farmer were generally picked within 1 or 2 days of delivery, not 3 to 4 weeks. Additionally, how often do you get to chat with the person who spent years tending the apple orchard for your pies or grow the luscious red vine-ripened tomatoes that you are about to enjoy on your sandwich? Subscribing to a CSA provides you with the opportunity to meet the people who grow your food, while having access to the freshest foods around.

Eat Local. Eat Seasonally.

Local seasonal eating simply means that you are consuming produce that is grown locally, in season for your climate. The season particularly dictates produce items availability, rather than most animal products, and value added products such as honey, eggs and cheese, which may be available throughout the year. For instance, the early growing season will support lettuce, spinach, and peas, while the height of summer will provide tomatoes, sweet corn, and melons. Based on the year's CSA, different products will be available at different times, making it easier to acquire quality nutritious local foods at the peak of their season and flavor.

Support local farms and the local economy. Join a CSA

Good for Us, Good for You.

Buying products in season, and from local farmers, saves on fossil fuel consumption. Products purchased through a CSA are most often grown with fewer or without synthetic chemicals, and made with less or no salt, refined sugar, or preservatives. Local CSAs are also great places to find organic foods. Many of the CSA farms are small, independent, family owned businesses that are doing their best to reduce their environmental impacts. That delicious sugar you are savoring might just be coming to your table by the efforts of a local high schooler picking sweet corn to raise money for college.

Gourmet Food at Hometown Prices.

This mutually supportive relationship between local farmers and community members helps create an economically stable farm operation in which the customers are assured the highest quality products, often at below retail prices. In return, farmers are guaranteed a reliable market that allows them to grow a selection of diverse crops.

Taste and Variety.

Purchase varieties grown for their taste, not because they can endure to be shipped hundreds or thousands of miles, or sample unique foods you cannot grow in your own garden or purchase at the mega store. CSAs provide the chance to taste unique foods you may not think to try on your own.

Why should I choose a CSA?

- Weekly allotment of farm products that are pre-paid for the season
- Opportunity to get fresh, nutritious, and high quality local food
- You get to know who is producing your food, and how they do it
- Food travels fewer miles to your table
- The social benefits of a CSA community
- Knowing that you support the local economy and local farms
- Great tasting food

Learn More

www.localharvest.org/csa
www.nal.usda.gov/fsc/pubs/csa/csa.shtml
www.farmerspal.com
www.localgrowers.org

From your local CSA

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CSA Brochure.pdf - Adobe Acrobat Pro

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CSA Indiana Harvest Season

Common CSA subscription foods

Vegetables

- Asparagus
- Beans
- Broccoli
- Cauliflower
- Cucumbers
- Peas
- Peppers
- Spinach
- Tomatoes
- Sweet Corn
- Squash
- Winter Squash

Fruits

- Apples
- Blueberries
- Strawberries
- Melons
- Peaches

Meat/Animal Products

- Eggs
- Poultry
- Beef
- Pork
- Lamb

Value Added

- Honey
- Cheese
- Jams
- Flowers
- Milk

Harvest times can vary year to year, but this chart will help determine when produce is available in Indiana.

Reference: The Urban and Community Grower: Understanding the Economics and Social Benefits of Local Food Systems. National Center of Urban and Community Food Systems Research.

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PROJECT TITLE: Pike County Extension Research Fungicide Use on Cucurbits:

PROJECT SUMMARY:

A team of four Purdue Extension Educators from Daviess, Knox, Gibson and Pike counties and three Purdue Specialists started an organic vegetable research plot in 2006 at the Southwest Purdue Agriculture Center (SWPAC) in Vincennes, Indiana. In 2010, this group planed to complete a fungicide study to control foliar disease on cucurbits in organic vegetable production. The fungicide products evaluated were, Liquid Copper, Mycostop, Oxidate and Serenade, which are approved by the Organic Materials Review Institute (OMRI).

PROJECT APPROACH:

On 20 May, muskmelon seedlings were transplanted to a field at the Southwest Purdue Agricultural Center in Vincennes, IN, which was managed for the 5th consecutive year organically. Individual row plots consisted of 30 ft rows on 6-ft centers. Muskmelon was seeded in the greenhouse on 12 Apr using polystyrene transplant trays filled with OMRI (Organic Materials Research Institute) approved Sunshine soilless mix (Sun Gro Horticulture Ltd., Bellevue, WA 98008). Muskmelon seedlings were transplanted 30 inches apart with 10 plants per plot. Each row was mulched with 4 ft wide x 0.16 in. black plastic mulch (Visqueen 4020). The experimental design was a randomized complete block with four replications. Treatment plots were separated in the row by 10-ft unplanted buffers. K+Neem was applied on 7 Jun for aphid control. OMRI listed fungicides were applied weekly from 12 Jun to 29 Jul with CO₂ backpack sprayer with 4 flat fan nozzles Tee-Jet 8002VS spaced 19 inches apart applying 10 gal per acre at 30 psi. A Horsfall-Barratt ratings system was used to evaluate severity of powdery mildew and Alternaria leaf blight on muskmelon leaves on 13, 23, 29 Jul, and 6 Aug. Muskmelon fruit were harvested 14, 16, 19, 21, 23, 26, 28 Jul.

On July 12, zucchini were direct seeded into a field at the Southwest Purdue Agricultural Center in Vincennes, IN, which was managed for the 5th consecutive year organically. Individual row plots consisted of 30-ft rows on 6-ft centers. Zucchini were planted 30inches apart with 10 plants per plot. Each row was mulched with 4-ft wide x 0.16 in. black plastic mulch (Visqueen 4020). The experimental design was a randomized complete block with four replications. Treatment plots were separated in the row by 10-ft unplanted buffers. OMRI (Organic Materials Research Institute) listed fungicides were applied weekly from 22 Jul to 31 Aug with a CO₂ backpack sprayer with 4 flat fan nozzles Tee-Jet 8002VS spaced 19 inches apart applying 10 gal per acre at 30 psi. The plots were examined for symptoms of disease on 20, 27 Aug and 3 Sep using the Horsfall-Barratt ratings system. Zucchini were harvested on 19, 20, 23, 25, 27, 30 Aug and 1 Sep.

GOALS AND OUTCOMES ACHIEVED:

Our teams overall goal is to find the most effective OMRI registered products (Milstop, Champ DP3, Oxidate and Serenade) for use in disease management in organically produced specialty crops specifically cucurbits.

Both powdery mildew and Alternaria leaf blight spread into the plots naturally and were first observed on 13 Jul. No yield significant differences in yield were observed in any harvest date or in total yields. The only significant differences in disease severity levels are shown below. Muskmelon plants treated with Champ DP or Milstop had significantly lower levels of powdery

mildew than plants treated with Serenade Max. All products tested except Oxidate had significantly lower levels of Alternaria leaf blight than the untreated check.

Treatment, rate/A ^z	Disease severity 23 Jul (%) ^y		Number of muskmelon/A
	Powdery mildew	Alternaria leaf blight	
Serenade Max 3 lbs.	13.4 a ^x	2.9 b	5,639
Oxidate 90 fl oz ^w	6.4 ab	4.1 ab	5,518
Untreated check.	6.4 ab	7.7 a	4,792
Milstop 2 lbs.	4.7 b	3.5 b	5,155
Champ DP 3 lbs.	4.1 b	2.3 b	4,792
<i>P-value</i>	0.0719	0.0496	0.6375

^z Fungicides were applied approximately weekly from 12 Jun until 29 Jul, except Oxidate which was applied twice weekly.

^y Plots were rated for severity of powdery mildew using the Horsfall-Barratt scale and converted to percent using the ELANCO tables.

^x Means within each column with a letter in common are not significantly different (Fisher's Protected LSD), P=0.1 for powdery mildew and 0.05 for Alternaria leaf blight.

^w Oxidate was mixed in a dilution of 1:100 with water, the resulting rate per A appears above.

Symptoms of powdery mildew were first observed in the zucchini plots on 20 Aug. Only data collected on 27 Aug are shown below since this is the only date on which significant differences were observed. The only harvest date for which significant differences were observed was 1 Sep. Only Champ DP and Milstop treatments had significantly lower levels of powdery mildew than the untreated check. While the total number of zucchinis harvested was not significantly different between treatments, on 1 Sep zucchinis treated with Champ DP had significantly more fruit than any other treatments except Serenade Max.

Treatment, rate/A ^z	Disease Severity 27 Aug (%) ^y		Number of zucchini/A	
	Leaf top	Leaf bottom	1 Sep	Total
Untreated check.	18.8 a ^x	37.5 a	968 b	12,269
Serenade Max 3 lbs.	15.0 ab	37.5 a	1,041 ab	11,132
Oxidate 90 fl oz ^w	12.0 ab	30.3 ab	653 b	10,333
Milstop 2 lbs.	5.7 bc	12.0 c	726 b	11,543
Champ DP 3 lbs.	2.3 c	18.8 bc	1,525 a	14,593
<i>P-value</i>	0.0125	0.0525	0.0965	0.1189

^z Fungicides were applied approximately weekly from 9 until 31 Aug, except Oxidate which was applied twice weekly.

^y Plots were rated for severity of powdery mildew using the Horsfall-Barratt scale and converted to percent using the ELANCO tables.

^x Means within each column with a letter in common are not significantly different (Fisher's Protected LSD), P=0.05 for disease severity leaf top and P=0.1 for disease severity leaf bottom and number of zucchinis on 1 Sep.

^w Oxidate was mixed in a dilution of 1:100 with water, the resulting rate per A appears above.

The results of this study (shown above) were presented to organic producers at a field day at Purdue which also involved Purdue Extension specialists and educators which consisted of 135

people. This information was also presented at the Indiana Hort Congress which consisted of about 75 specialty crop producers. Summaries of this information was handed out along with surveys. The surveys asked attendees about organic production techniques such as cover crop, pest and fertility management. Results of the survey showed that 72 % were familiar with and used cover crops in their operations, 2% used pest control and 16% used a combination of cover crops and fertility management.

BENEFICIARIES:

In both Muskmelon and Zucchini crops, there were no significant yield differences. The amount of disease fluctuated based on the treatment. As stated above the Muskmelon plants treated with Champ DP or Milstop had significantly lower levels of powdery mildew than plants treated with Serenade Max. All products tested except Oxidate had significantly lower levels of Alternaria leaf blight than the untreated check. Only Champ DP and Milstop treatments had significantly lower levels of powdery mildew than the untreated check. While the total number of zucchini harvested was not significantly different between treatments, Zuchinis treated on 1 Sep with Champ DP had significantly more fruit than any other treatments except Serenade Max.

The results of this study (shown above) were presented to organic producers at a field day at Purdue which also involved Purdue Extension specialists and educators which consisted of 135 people. This information was also presented at the Indiana Hort Congress which consisted of about 75 specialty crop producers.

LESSONS LEARNED:

The most significant lesson learned was weather can take a year's worth of planning away. Our first crop of zucchini was devastated with one wind storm that destroyed more than 50% of our plants.

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ADDITIONAL INFORMATION:

There is no additional information to report.

PROJECT TITLE: Purdue University - Drift Research:

PROJECT SUMMARY:

During spring of 2009, the Lagrange County extension educator identified a stakeholder group that produced specialty crops who would benefit from registering and having their fields displayed through the Driftwatch.org website, but these populations shun personal engagement in computer technology. This proposal was created as a result of that effort.

Driftwatch.org is a voluntary pesticide sensitive crops and habitats registry website that facilitates communication of sensitive specialty crop and habitat locations to pesticide applicators so additional precautions can be taken to reduce potential drift to these areas, thereby protecting sensitive natural resources and reducing economic losses to specialty crops. The website was designed for individuals to register on-line, and subsequently map sensitive specialty crop fields or habitat areas. For communities who do not use the internet, this approach must be modified to fit their cultural practices.

PROJECT APPROACH:

Our approach: Using a trusted intermediary, organize and perform 4 face-to-face meetings/workshops with stakeholders. These 4 meetings/workshops totaled 125 people in attendance; all of which were specialty crop producers. During this meeting the team replaced the internet-access used for normal DriftWatch sign up with a paper-based map sign-up process.

(1) Increase registered pesticide sensitive specialty crop and habitat acres managed by the identified stakeholder group by 500 acres.

(2) Increase awareness of registered pesticide sensitive specialty crops and habitats to local pesticide applicator communities (row crop, aerial, and right-of-way) to prevent unintended drift residue impacts that affect yield and marketability of produce. This was done by meeting with 116 applicators.

GOALS AND OUTCOMES ACHIEVED:

The goals of this project were to expand awareness of DriftWatch in the specialty crop business of Northeast Indiana.

Objective 1: Increased registration of pesticide sensitive specialty crop and habitat areas managed by the identified stakeholder groups who shun personal engagement in computer technology in Lagrange County, Indiana area. There were 125 specialty crop producers who attended this event; and 500 acres were added.

Secondly, once a successful registration method is developed and demonstrated for communities like this one, this technique could be extended to similar stakeholder communities with similar interests in a state-wide campaign.

Objective 2: Facilitate communication between the identified stakeholder specialty crop producers, pollinator habitat stewards and the pesticide applicator communities. Due to the making of the Driftwatch Powerpoint presentation and a "how to register" demonstration video; page hits on the website are up 200% from where they were prior to this grant award.

Beneficiaries:

Two groups of immediate beneficiaries were quantified. One group was specialty crop producers who receive the benefit of being included on the DriftWatch map. The sign-up phase of the project netted an additional 500 acres of specialty crop from 125 specialty crop producers in the DriftWatch database. Their benefit was the reduced risk of a pesticide drift incident that impacts the yield and/or marketability of their specialty crop produce, so there was a clear benefit to these producers.

The second group of direct beneficiaries was the pesticide applicator community. The local county extension educator, Steve Engleking hosted training that explained the DriftWatch process and map to 116 local applicators during the pesticide applicator recertification programs (PARP) during 2010.

LESSONS LEARNED:

- Confirmed that paper map format is simple and yet sufficient to collect registration information when working with small groups without internet communications.
- Confirmed that the use of laptop and oversized monitor is effective way to present purpose, elements and visualize expected outcomes of Driftwatch.org website registration activity.
- Project team appreciated the use of satellite-based internet communication that enabled demonstration of producer registration and immediate display of DriftWatch.org mapped field areas. The demonstration allowed stakeholders to confirm their comfort with the purpose and display of DriftWatch.org registry outputs, as the general public would see them on the internet.
- Stakeholders confirmed that the introduction and promotion of DriftWatch.org during local extension education programs held March 2010 was an effective to raise awareness and name recognition of DriftWatch.org initiative.
- Producers appreciated Steve Engleking's direct mail correspondence encouraging the stakeholder group to participate in Driftwatch.org registry workshop.
- The distribution of "No Drift Zone" field signs motivated the stakeholder community to participate in the March 2010 DriftWatch specialty crop registry workshops sponsored by the Indiana State Department of Agriculture.

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ADDITIONAL INFORMATION:

This project was successful in reaching the assigned goals. In addition, lessons were learned that will benefit the statewide application of the DriftWatch program.

- A DriftWatch Power Point presentation was developed by Leighanne Hahn and Roy Ballard (*Feb 2010*) and distributed for use by local extension educators. The information was presented during March 2010 specialty crop producer

workshops and pesticide applicator recertification programs (PARP) in LaGrange County.

ftp://ftp.ecn.purdue.edu/abegis/driftwatch/indiana/Driftwatch_overview.ppt

- A DriftWatch “how to register” demonstration video was developed by Larry Theller (*Feb 2010*). The video may be accessed online at DriftWatch producer webpage and/or downloaded as a .zip file. The video was presented during pesticide applicator recertification programs (*PARP*) in LaGrange County.

http://driftwatch.agriculture.purdue.edu/movies/producers/crop_producers.html

PROJECT TITLE: Market Maker

PROJECT SUMMARY:

The Market Maker interactive web tool connects consumers, agricultural businesses and farmers, providing a one-stop shop to locate locally grown food products. As well as local food buyers, retailers and restaurants will all be able to quickly locate Indiana fruits and vegetables. MarketMaker was developed as an online marketing resource to give specialty crop farmers greater access to regional markets by linking them with processors, retailers, consumers and other food supply chain participants. Since its inception, it has expanded tremendously and is currently one of the most extensive collections of searchable food industry related data in the country, containing nearly 500,000 profiles of farmers and other food related enterprises in Arkansas, Colorado, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Mississippi, Nebraska, New York, Ohio, Pennsylvania, and South Carolina.

PROJECT APPROACH:

MarketMaker has been made possible in the past by a collaboration of the Indiana State Department of Agriculture, Purdue Extension, Indiana Cooperative Development Center and the U.S. Department of Agriculture Rural Development. Through these partnerships we were able to reach out to new resources such as new farmers' markets, new specialty crop producers and start up small businesses. It was through these agencies partnerships that we were able to locate and connect with these groups.

Market Maker was presented during the tradeshow at the Indiana Hort Congress in January 2010. This event was attended by over 300 people and the majority of those were specialty crop producers.

ISDA worked closely with the Indiana Certified Organic agency to make sure all specialty crop growers who were registered with them were aware of this program. This was done through e-mails and word of mouth during the yearly recertifications.

It was ISDA's hope that continued support of this website would encourage more producers to register on this site and be an effective tool to give to fruit and vegetable producers. ISDA included a link to Market Maker on its online Agri-tourism directory. ISDA monitored the number of hits this website received and encouraged producers to sign up and partake in this program.

ISDA's Communication Staff did several Press Releases to the Ag. News Media in the state about this web tool as well as promoting throughout the year on Facebook and twitter.

GOALS AND OUTCOMES ACHIEVED:

After endless promoting through group talks, social media, press releases and trade shows ISDA doubled the amount of producers on this site from 6,000 to 12,000. Consumer hits on the website have increased by 18%.

BENEFICIARIES:

Consumers, agricultural businesses and farmers have a one-stop shop to locate locally grown food products, as well as local food buyers, retailers and restaurants are all able to quickly locate Indiana fruits and vegetables

LESSONS LEARNED:

Therefore ISDA finds this website to be an extremely effective tool to give to fruit and vegetable producers. ISDA will continue to monitor the number of hits this website receives and encourage producers to sign up and partake in this program.

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ADDITIONAL INFORMATION:

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PROJECT TITLE: BIG CITY FARMS URBAN APPRENTICESHIP CURRICULUM AND MANUAL

PROJECT SUMMARY

Big City Farms (BCF) is an urban farm in Indianapolis Indiana focused on rare and specialty crops. BCF is owned and operated by Tyler Henderson and Matthew Jose. In addition to farming, BCF aims to fill the gap between interested public and private businesses/organizations and individuals who are looking to develop or expand urban farming initiatives. These initiatives are focused on small-scale, hand-based specialty crop production (primarily fruits, vegetables and cut flowers), these initiatives recognized the lack of trained urban farmers, and thus developed curriculum for its *Urban Farming Apprenticeship Program* (a separate SCBG program).

In addition, BCF produced *Urban Farming Apprenticeship Manual* which will project and summarize the work of the *Urban Farming Apprenticeship Program*, and will provide a template for other urban farming endeavors in Indianapolis (and elsewhere) to use in the development of their own apprenticeship programs.

This was the first time this project requested SCBG funds.

PROJECT APPROACH

The specific issue Big City Farms (herein after called BCF) aimed to address with the development of the urban farming apprenticeship curriculum and manual is a severe lack of trained urban farmers who are qualified in the intricacies of hand-based, small scale, organic urban agriculture, as well as the unique opportunities for distribution in urban settings. There is a need to leverage the current interest of Indianapolis (and other similar non-dense urban population centers) to continue to incentivize urban farming by bringing trained urban farmers into the marketplace. The City of Indianapolis is keenly interested in urban farming initiatives, perhaps made most obvious by the 100 lots the city has made available for for-profit and non-profit farming initiatives. Attendance at farmers markets in Indianapolis (and elsewhere) is at an

all time high, but there remains a lack of farmers to supply specialty fruits and vegetables to the marketplace. This detailed urban farming curriculum and manual that was created will start to fill this gap between production and market need, and also start to slowly address the realities of “food deserts” that exist in our urban centers by bringing future urban farmers and urban farming guidelines to the market.

GOALS AND OUTCOMES ACHIEVED

The manual was created!

The initial draft of the Urban Farmer Training Manual was informed by a wide range of the Big City Farms’ staff experiences. These include multiple season-long apprenticeships at a specialty crop farm in Massachusetts, two years’ worth of employment with the Marion County Extension Service, multiple years of operating a small scale specialty crop farm in Indianapolis, as well as brief visits to other working farms around the United States.

The depth of these experiences enabled BCF staff to create an initial draft that would address key topics related to starting and maintaining a specialty crop farm in Indianapolis. This draft was completed in April 2011, at which point it was utilized to inform the apprenticeship program BCF operated during that season. The experiences of that season’s apprentices directly impacted the revision of the manual by providing insight into which particular areas needed expansion and/or further explanation. Over 100 copies of the manual have been distributed using the Extension offices as the conduit. We also have the manual as a download on our website and have received over 350 hits to the website but we do not know if that was print of the manual.

The manual was adjusted further during the end of 2011 and the beginning of 2012, as BCF staff was able to visit urban farms around the country. These fact-finding trips (funded by another grant through the SCBGP) enabled BCF to create a manual that begins to establish a ‘best practices’ approach to urban farming - inspired not only from existing projects in Indianapolis, but also from new and established farms whose experiences and operations offered significant learning opportunities.

There have been 23 individuals who have actually contacted us to use the curriculum at our farm program. We know that the extension office used the curriculum in their program and had 18 participants. The response that we had from those engaged in our urban farm methods has not been necessary a change in practice but a change in the understanding of the selection of crops, the timing of the crops and the markets and level of production to take crops to the market.

BENEFICIARIES

We worked and work with several local neighborhood organizations and individuals seeking to grow fresh vegetables. Two organizations that we are excited to partner with who are looking to create programs within their organization is LISC and the John H. Boner CC.

Local Initiatives Support Corporation (LISC) Indianapolis is the local office of a national organization that helps resident-led, community-based development organizations transform distressed communities and neighborhoods into healthy ones -- good places to live, do business, work and raise families.

The John H. Boner Community Center is comprised of staff that is a collective group of passionate and dedicated individuals whose goal is to improve the quality of life on the Near Eastside of Indianapolis.

We know the 23 individuals benefited by having a guide to help them first understand what urban is and what it involves and then helps to work through a plan of either becoming a business or becoming a consumer of their own production (verses going to market). We also know that at least 42 backyard producers who are not pursuing retail markets but are growing specialty crops and eating healthier.

LESSONS LEARNED

Putting together a manual takes a lot of time and research and we probably underestimated the value of our cost while trying to run a farm operated, hands on business. We did learn that there are many partners and organizations who were looking for this type of information, so we know we did valuable work.

We learned that trying to estimate the number of people who are urban farming is not as simple as we thought and trying to tag a three hundred percent increase was too vague of a goal. We did reach into three urban dense neighborhoods and had success bringing participants into the program at a level of 42 small backyard producers, who are more knowledgeable about food production on a small scale for at least family consumption.

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ADDITIONAL INFORMATION

Urban Farming in Central Indiana
A Training Manual Prepared by Big City Farms to Support the Development of Emerging Urban Growers
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Created and published with the generous support of the
Indiana State Department of Agriculture, Specialty Crop Block Grant Program

Table of Contents
Introduction
1. Land Use
2. Site Assessment
3. Bed Building
4. Managing soil fertility
5. Composting
6. Seed Selection and Crop Planning
7. Seed Starting
8. Transplanting
9. Cultivation
10. Tools
11. Insects

12. Harvest/Storage
 13. Marketing and Distribution
 14. Crop Extension
 15. Putting Farm to Bed
 16. Time Management
- Conclusion and Acknowledgements

Introduction

The ways in which we grow food are integral to the health of our bodies and our communities. Farming is an activity that offers a clear window into our values and desires. Over the last hundred years, our food system has veered decisively from its original focus on small-scale, regionally specific food production, to one that is primarily concerned with its capacity to compete in the global marketplace. The result has been well documented in a wide range of sources: ecological devastation, market-driven abandonment of family farms, gutted local food economies, and a loss of food literacy that will, despite our best efforts, haunt us for generations to come.

In the face of this dominant mentality to ‘get big or get out,’ people around the country have been presenting an alternative to such a food system. They have been working hard to cultivate the land in the best way possible and make the case that good food and healthy communities are each dependent upon the vitality of the other. These farmers are in rural and urban areas alike, raising livestock, tending crops and, in the process, demonstrating the excitement and joy that is inherent in any thriving food system.

Big City Farms has, over the course of its existence, been committed to the idea that all communities, even urban ones, have the capacity to actively participate in their own food production. Numerous individuals have volunteered at the farm, excited to see how growing food in a highly urban area might work. Some of these volunteers have been interested in learning how they might create a thriving home garden, others are exploring ways to incorporate gardens into an educational setting, and still others have been excited by the idea of running their own urban farm.

With these people in mind, and with the support of the Indiana State Department of Agriculture, Big City Farms staff spent a significant part of the 2012 growing season creating this training manual for urban growers. We have tried to distill our experiences and opinions as best we can, so that other members of our community might be able to pursue their own agricultural dreams in an informed manner.

To be sure, we will have inadvertently ignored or omitted various pieces – including different methods of cultivation or pest control or crop selection and, most notable, livestock management. We have tried to focus on areas with which we are most familiar and practices that are integral to the operations of Big City Farms.

The farming knowledge that exists within our own community is vast and under-explored and we hope this manual will continue to be a work-in-progress. Instead of thinking of this as the final word on urban farming, think of it as an invitation to participate in the evolving

conversation about what a healthy food system might look like, and what steps we can take to get there.

1. Land Use

There are an array of options and issues to consider when researching what land might be available and deciding what land to utilize for urban agricultural purposes. This section attempts to provide factors that could/should be considered when trying to acquire land, options that are currently available and options that might be made available in the future in Indianapolis.

Each future urban farmer should consider several factors when contemplating land use. These include, but are not limited to:

- *Size.* It is important that each farmer focuses on “right sizing” their operation. Many farming operations start and fail quickly because they start out too big. Before pursuing land options, take plenty of time to consider what type of operation will fit you best. You can start to focus by deciding how much time you can devote each day/week/month/year to farming, by deciding if the growing space is income generating or for personal use and by deciding if you anticipate help in the form of paid labor and/or volunteers. Once these decisions are made, you can feel more comfortable in deciding what size growing area fits your needs and goals.

- *Soil content and health.* Heavy metals are a major concern in urban farming. Any potential farm site should have a soil test for heavy metals to determine what type of mitigation might be required before growing food. Detailed information on soil testing is available in the Site Assessment section of this manual.

- *Length of use.* Will the land be made available for one season, multiple seasons, indefinitely or permanently? Are there near/mid/long term plans for development on the site in question? These are vital questions to ask and finalize in advance of any land use agreement, as it is difficult to relocate a farm. The potential farmer should decide a minimum length of time they feel comfortable committing to in order to develop the type of farm they imagine.

- *Cost.* Is the land being made available for free, for rent or for trade? What monthly/yearly costs can the farmer incur on land and still have a financially viable farm? The current reality in urban agriculture is that land use likely needs to be “subsidized” by the private, public or institutional owner of the land, as urban land is typically too expensive to both purchase and realize a return on investment for agricultural purposes.

- *Zoning.* Are there any zoning restrictions that would limit or prohibit agricultural use of the land? Zoning should be investigated not only in relation to growing food, but also for temporary structures including hoop houses, greenhouses and storage units. Though these structures may not be in the initial plan of the farmer, as the farming operation matures, they may be of interest.

- *Water.* Is there currently a watering infrastructure on the land? If not, what are the possibilities to tap into a hydrant, run a utility line and/or utilize neighboring structures for rain catchment? A watering infrastructure is absolutely essential for a farm to thrive (this point cannot be made strongly enough), and figuring out water in the planning stage of the farm will save the farmer time, money and energy when building out the farm.

- *Location.* Consider current and future living situations to determine whether the location of the farm site is amenable to daily travel to and from work. One must consider that farming often requires activities at very early and very late hours (i.e. – turning on/off water, laying out row cover, etc.), so the location should accommodate the unpredictable schedule of farming. Each farmer should also consider whether his or her farm size and model is best served on one single location or can be spread among several locations. If spreading the farm out, for example by

farming on residential lots, consider the maximum distance between lots that will still allow the farm to run efficiently and commit to stay within this footprint.

- *Storage.* What are the possibilities for storing tools, supplies and harvested vegetables on/near the farm site? If refrigeration and/or frequent power tools will be required, what possibilities are there for an electrical hookup? It is advisable to figure out storage needs and possibilities in advance of the farming season to save time, money and energy.

- *Distance to distribution.* The farmer should consider the proximity of the farm to their customer base. Whether the distribution model is CSA, farmers market, restaurant sales, etc., the farmer should determine how important proximity to their end market is for distributing product and marketing the farm.

Land Use Options

Although the land use options below do not necessarily fit neatly into only one specific category presented, we have attempted to organize options by providing three broad categories for consideration when searching for urban farm land.

Public

Larger projects on public parkland typically require an organizational structure (and frequently grant support) to build out and maintain the farming operation, as well as non-profit status. For individuals who want to focus on growing in smaller spaces and gear their operation for profit or personal use, an option is the Indianapolis Office of Sustainability – Indy Urban Garden Program. Through the Indianapolis Land Bank, more than 100 lots have been made available for free for farming purposes. Individuals must apply to farm the lot(s) and if approved for use, the land can be used for a minimum of five years

(www.indy.gov/eGov/City/DPW/SustainIndy/Life/Garden/Pages/IndyUrbanGardenProgram.aspx).

One example of a large project on public land is the Indy Urban Acres Farm at 21st Street and Shadeland Avenue which began in the 2011 growing season. The farm is funded by Indiana University Health and is a project of the Indy Parks Foundation located on Indy Parks land. The farm will grow up to eight acres, and the crops grown by a grant-funded farm manager will be provided to Gleaners Food Bank

(www.indyparksfoundation.org/site/what_we_do/indy_urban_acres_farm). A second public land project is the Wishard Slow Food Garden at White River State Park which is a project of the non-profit Growing Places Indy. The farm is on 6,000 square feet and is designed to encourage residents of Indianapolis and visitors to the city to consider how they might be able to eat from a local food system. The farm is partially grant-funded and sells its produce to restaurants, at farmers market and through a CSA, as well as donates crops to a downtown neighborhood. In addition, Growing Places Indy runs a ten-week summer internship program for high school and college students (www.growingplacesindy.org).

Private

Despite more than one million residents in the Indianapolis metro area, the city is not particularly population dense and potential farmland can be found in any corner of the city. Within the sector of privately owned land there are many possibilities and options.

Privately Owned Lots

An increasing number of farming operations are sprouting up on privately owned residential lots, or privately owned commercial lots. Arrangements such as these are typically born out of conversations in neighborhoods with neighbors. Lot owners are often extremely amenable to farming operations on their properties as it passes maintenance responsibilities onto the farmer, beautifies the lot and has the potential for the lot owner to earn some money on the land (through a rental agreement) or trade for vegetables grown on the property. Big City Farms has operated using this model since the 2009 growing season.

Backyard Gardens

In many locations around the country, farmers utilize a series of backyards to earn income. Arrangements can take many different forms from contract growing for individual families, to simply utilizing the land for a farming operation.

Restaurant Gardens

With the increase in the number of restaurants focusing on local sourcing, restaurants are increasingly interested in having their own on-site gardens. R Bistro and Goose the Market currently have on site gardens that are tended by contract growers or hourly employees. Restaurants benefit from such arrangements not only in the use of the produce, but also in the way that such sites can serve as a useful marketing tool and a location for restaurant patrons to spend time while waiting for a table or after their meal.

Personal Yards

For small-scale growers, the personal front and/or back yard is a great location to learn how to garden. Growers will benefit from having their farming activities on the same site where they live. Personal yard gardening is a great way to decrease one's food budget, as well as having the chance to sell small amounts of product overages to earn additional income. If a grower can learn important lessons on a small, personal scale it may make the prospect of scaling up to a small farming operation much less intimidating and much more achievable.

Community Gardens

Community gardens take many different models depending on the organization that is administering the garden itself. The most common model is that growers rent a small plot on a yearly basis for their own use. Much like a personal yard garden, a community garden plot is a great way to start to learn how to grow vegetables and a way to sell overages for additional income.

A current list of gardens and farms in Indianapolis is available in Appendix A.

Institutional

The term institutional here is being used to describe land and farming options that are part of, or in partnership with, a larger public or private organization.

Hospitals and Health Centers

Public and private health care providers are increasingly paying attention to the prevention possibilities resulting from healthier food choices in their populations. The logic is that fewer diet-related illnesses will occur if patients' diets improve. This will reduce the occasions that a patient has to seek health care, resulting in a cost savings for the health care provider over the long term.

As mentioned in the private land use section above, Indiana University Health has funded an eight-acre farm with produce being donated to a food bank. In addition, Wishard Hospital will have its own 6,000 square foot “Sky Farm” on the roof of its new hospital, which will open in 2014. The goal of the Sky Farm is to provide both educational experiences for patients and families and to provide fruits and vegetables to the hospital’s food service. Hospitals and health centers often have the benefit of on-site land that is typically underutilized. A scenario can be imagined where hospitals and health centers have on-site farms and on-site farmers that provide educational experiences and fresh food for staff and patients. Such arrangements could be “subsidized” by providing free land to farmers in exchange for educational programming and/or some amount of produce. This would allow the farmer to be a benefit to the health center and devote a portion of the growing space to a for-profit endeavor while getting healthy food onto the plates of those whose health is most at risk.

Colleges and Universities

The Butler University Center for Urban Ecology has developed a two-acre campus farm (www.butler.edu/urban-ecology/urban-farm). The farm has employed a grant-funded farm manager for three years, which will allow the farm manager to build out the farm and develop a sustainable for-profit farming model over the three years. After that time, the arrangement will be similar to the one mentioned above, with the for-profit farmer being “subsidized” by the university in the form of free land in exchange for continuing to run educational programming for the university.

In addition, IUPUI has developed an on-campus community garden called DIGS (www.iupuidigs.com) with the dual objectives of promoting and teaching the process and benefits of sustainable urban gardening. Like many institutions, land is frequently available at colleges and universities and if the farming project can benefit both farmer and institution, and an ethic of agriculture and sustainability is made to be institutionally important, then more models like the Butler CUE farm and DIGS could develop.

Community Development Corporations

In Indianapolis, Community Development Corporations (CDCs) are typically asked to assist with affordable housing, job creation and neighborhood revitalization. As neighborhood partners who have a vested interest in increasing the health of neighborhoods and to find contributing land use models, urban farming is a natural fit for such organizations.

An example is South Circle Farm (www.southcirclefarm.com) in the Concord neighborhood on the near southside, which started in the 2011 growing season. The Concord CDC purchased a three-acre site with the intention of developing an urban farm. Through grant and stimulus money, the farm infrastructure was established under the consultation of the farm’s first private farmer. The arrangement benefits both parties in that the CDC, which has no expertise in farming but wants a farm on-site, gets the farm they desire and the farmer receives a subsidy in the form of a consulting fee to build the farm and free use of the land moving forward. In exchange, the farmer has agreed to run educational programs and sell subsidized vegetables in the Concord neighborhood. The Concord/South Circle Farm collaboration is a good model that could be replicated to bring additional farms to many neighborhoods.

Schools

The schoolyard garden movement, which gained traction in 1995 with Alice Waters in Berkeley, California at Martin Luther King, Jr. Middle School, is starting to take hold all over the country. Schools are seeing the benefits of serving school-grown vegetables in their cafeterias and integrating their gardens into various parts of their curriculum (science, math, art, physical

education, etc.). Many schools, particularly in suburban areas but also in urban areas, have the benefit of sufficient land that goes almost unused for any purpose other than growing grass. There is a great opportunity for future farmers to partner with schools for the development of farming initiatives and schools such as Herron High School and The Project School have already started with initiatives on their campuses.

Churches

Once again, church campuses often have the great advantage of large pieces of land that goes unused for any purpose other than growing grass. Here again is an opportunity for potential growers to make a strong argument for an arrangement that benefits both grower and institution. An example would be developing a private farm on church property where land use could be exchanged for a portion of the harvested produce.

Land Use Summary

Urban farming is still very much in its infancy, and many of the forms it could take have not yet been imagined and are certainly not presented here. The limits are only in the imagination of future farmers. Experience shows us that good farming models can be executed in infinite ways and sometimes the only barrier to land use (including free land use) is asking permission and working hard towards a mutually beneficial goal.

2. Site Assessment

Once a geographic location has been selected, the next step in designing a successful farm system is to analyze the site in regards to its soil quality, potential contamination, sun exposure, water supply, and physical layout considerations that should be factored in to the assessment and planning process. This sort of thorough site assessment is key to understanding exactly what one is working with, and how it might be improved upon to best suit your farm's needs. This is a critical stage in the farm planning process, as many of the decisions made here should be considered permanent. It is easy to get swept away with new possibilities and the excitement of an upcoming growing season and, in the process, cut corners in the planning and physical layout of the farm. However, it will always be more efficient to set aside sufficient planning time, determine the best course of action and pursue that goal rather than make decisions that will be regretted and must be corrected in the future.

A Quick Word on Soil Types

Soil composition can vary significantly from one site to the next, even within a single site. Additionally, the productive capacity of a particular site can depend greatly upon materials present within a given soil, and the role they play in the cultivation of fruits and vegetables. Much of the soil in central Indiana is dominated by clay – a material whose densely packed particles are able to hold water well and can contain significant stores of nutrients. Clay soil can also be difficult to cultivate, due to this high density and the resulting heaviness of the material. Sandy soil is composed of loosely packed particles that circulate water and air very easily. Silt is a soil classification that is somewhere between clay and sand. Ideal soil composition for vegetable production would include a mixture of all of these types, and can be achieved through conscientious planning and bed preparation, almost regardless of the original soil's character.

Soil Tests

The first step in a site assessment should be a comprehensive soil examination. Healthy plants need healthy soil, without fail, and anything you can do to improve the soil conditions will be rewarded in future harvests. To start this process, soil samples need to be taken from the

selected site. There are numerous soil labs around the country that conduct testing, for a modest fee.

Big City Farms has used the Soil and Plant Tissue Testing Laboratory at the University of Massachusetts, Amherst (www.umass.edu/soiltest/index.htm) over the past three years, with positive experience. The soil tests that the university performs can be customized to focus on specific aspects of a soil's characteristics, including available organic matter, soluble salts, soil texture, and total nitrogen. An example of a UMASS soil sample is included in Appendix B. A more local service for Indianapolis residents is offered by Dr. Gabriel Filippelli of the Center for Urban Health at Indiana University-Purdue University, Indianapolis (www.urbanhealth.iupui.edu).

With both of these testing services, the results will be accompanied by a detailed breakdown of existing nutrients, micronutrients and pH levels, along with general recommendations on steps one might take in order to achieve ideal growing conditions for the selected crops. A thorough explanation of soil sampling instructions can be found in Appendix C (www.hort.purdue.edu/ext/HO-71.pdf).

Soil Contamination

One thing to pay special attention to, in regards to using urban land for agricultural purposes, is the possible presence of hazardous contaminants due to human-related activities. These contaminants might include lead, petroleum hydrocarbons, arsenic, and residual insecticides. A thorough soil test from one of the previously mentioned services will screen for such contaminants in regards to their presence and relative quantity.

The presence of lead and other hazardous materials should not necessarily be viewed as an insurmountable obstacle for a successful farm. This simply means that one has to be significantly more conscientious about specific land use and bed construction than if one were working in clean, fallow ground. Recent studies have shown that there is greater risk associated with surface exposure than with absorption of such chemicals by plants.

What this means, in practical terms, is that one should be careful to provide a significant (6-18 inches) layer of clean (uncontaminated) organic material on top of contaminated soil (the depth of this added layer will be relative to the amount of contaminants within the soil). This clean organic matter might consist of wood chips, topsoil, compost, leaves, straw, etc. The goal is to provide a solid barrier between the eventual growing layer and the original layer, so that one's harvesting or cultivation practices do not disturb contaminated soil particles.

These techniques, often associated with growing in raised beds, are discussed in greater depth in the section related to bed building. The following websites contain excellent information about soil contamination and the steps one can take to mitigate the risks associated with farming on contaminated land:

www.aiswcd.org/IUMPDF/appendix/u03.pdf

www.cepm.louisville.edu/Pubs_WPapers/practiceguides/PG25.pdf

Sunlight

Adequate sunlight is crucial to a plant's growth – the process of photosynthesis (which depends upon available sunlight) is the only way that plants are able to produce food for themselves and thrive. As such, the availability of sunlight over the course of the year should be monitored when determining the layout of any future growing site.

Nearly all food crops require full sun (a minimum of six hours of unimpeded sunlight per day), so it is important not to locate growing areas alongside potential obstructions. The sun's impact will change over the course of a year, as the tilt of the earth will affect the sun's path. From the late fall through early spring, this path will be predominately in the south, as the sun rises in the

southeast and sets in the southwest. This reduced arc will make growing areas along the southern edge of a property particularly susceptible to shadows from possible obstructions on the southern perimeter.

The impact that such surroundings might have on production capacity should be taken into account when one is laying out a growing space and creating a crop plan. For example, if there is a building that borders the southern edge of the farm, it would be unwise to grow winter greens within the southernmost beds as they might not receive sufficient sunlight during the winter months.

Water

Water is another key element to a plant's survival and success. There are certainly regionally-adapted plants that might require less water than others (as is the case for plant varieties indigenous to the southwestern region of the United States), but the vast majority of vegetables common to the American consumer require an average of one inch of water per week for healthy growth and production. This need should not be ignored in the planning stages of a farm, as the logistics of ensuring adequate irrigation can be complicated and time-consuming. It is best to explore available options and decide upon an informal irrigation 'protocol' prior to planting any seeds.

There are often several watering options available to urban growers, largely due to the fact that many urban areas have established infrastructure to provide residents with safe, clean drinking water. The complexity of the situation is largely due to how a grower is best able to access that water supply and apply it to the growing area.

Big City Farms has employed a variety of techniques to ensure that its plantings receive adequate water during dry periods – particularly in late summer/early fall. The farm has utilized existing spigots on neighboring houses to access city water, running hoses from the house onto the growing area. These hoses are then used to hand-water plants or, more frequently, will be connected with common yard sprinklers that are able to cover a large area and can be easily moved, according to needs.

When growing in a city where there is often a tremendous amount of material available for the taking, it may be reasonable to think of a neighbor's spigot as a source of free water. Using such resources, though, should always be discussed and cleared with the appropriate owner, to maintain positive relations with neighbors and potential partners. To this end, always volunteer to compensate the homeowner for any water that might be used for irrigation purposes.

Another approach that Big City Farms has taken is to rent a temporary hydrant meter from the local water company. This is a straightforward process that requires the purchase of a hydrant wrench (for unscrewing the hydrant caps) and signing a contract with the water company in exchange for the meter. There is a small daily rental fee, in addition to a usage fee per 100 cubic feet of water that is used. While this process might seem expensive or time-consuming (attaching the meter, relocating it to another site if necessary, etc.), it is probably the best way to ensure a steady supply of clean water for an urban farm. More information about renting temporary water meters in the Indianapolis area is available at:

www.citizenswater.com/My-Service/TemporaryHydrant.aspx

The choice of irrigation method is often dependent on the availability of a permanent water source, and the costs associated with purchasing and installing a full-fledged irrigation system. At the outset, it is advisable to wait to purchase irrigation materials, such as drip tape and elaborate sprinkling devices, until at least one season has passed. The experience of using a particular plot of land, as well as the experience of marketing a wide range of vegetables to a discerning public, will help inform the decision-making process and might convince the grower

that a complicated irrigation system is simply unnecessary for the types of crops that will be grown.

Layout Considerations

Due to the fact that every farm is different in its goals and operations, it is difficult to prescribe a farm design plan that will be applicable to every one. There are, however, some basic factors that should also be considered in these initial, planning stages. These include:

☒ *Bed Placement and Orientation.* In order to maximize available sunlight, vegetable beds should be laid out running east to west. This will help insure that taller plants do not, inadvertently, block the sunlight from reaching lower-growing plants.

☒ *Compost Bin Placement.* Whether or not the production and application of compost is a major factor in your particular farm, it is inevitable that there will be food waste (whether it is leftover produce that did not sell and is now inedible, or the remains of plants whose edible portions have been harvested) created on-site, and it is helpful to have a dedicated spot for such materials. It should also be easily accessible and of a manageable size, to facilitate use and upkeep.

☒ *Wash Area.* A clean, functioning wash station is an important part of any farm that is specializing in fresh produce. Once harvested, fruits and vegetables need to be rapidly cooled in order to preserve their appearance and maintain their shelf life potential. A functioning wash area will go a long way to ensuring that your customers are happy with vegetables that might have been picked up to twenty-four hours before the point of sale. If there is a particularly shady area within a chosen site, this would be an excellent spot to locate a wash area. It should have ready access to clean water, include multiple bins for washing and/or soaking numerous types of vegetables, and have an elevated area where vegetables can be cleaned. Simple wooden tables with a wire mesh top work well for this – the mesh ensures that the dirt attached to the vegetables has somewhere to go after being sprayed off, and the washed vegetables are able to dry properly.

☒ *Tool Storage.* This does not necessarily have to be on-site, but it is certainly convenient if there is an easily accessible storage place where frequently used hand tools can be kept. If it is financially and aesthetically feasible, a used shipping container is an excellent option for a storage shed – it is dry, secure, stable, and can provide a convenient backdrop for any farm signage that might be necessary and/or desirable to post.

The question that you should ask yourself throughout the planning process is ‘How can I make this process more efficient?’ Farming is hard work that demands a high level of competency across a wide range of tasks. The fewer obstacles there are to completing one of these tasks means that it will be less tiring, it is more likely to be completed, and it will take less time to complete. Despite customer excitement and support for well-grown vegetables, there is a limit to the price people will pay for produce. You will have more time to pay attention to growing the best possible produce at a reasonable price by increasing the efficiency of your operation.

3. Bed Building

Advantages of Using Raised Beds

A raised bed is ideal for the urban farmer interested in maximizing limited space and keeping that space aesthetically pleasing. On plots where soil is contaminated or where drainage is a concern, raised beds can help improve the overall growing environment. Instead of battling poor soil conditions, raised beds are built above ground, where a farmer can have more control over the soil texture and ingredients. Sometimes when building a raised bed the native soil is incorporated, sometimes not.

A frame, which is optional, will contain the soil and can be constructed of wood (avoid painted, or stained wood), hay bales, brick, stone, concrete block, or any number of found materials. A raised bed can be a free form shape, with soil and amendments piled several inches high. Ideally the bed will consist of six inches or more of compost-enriched soil, a mixture of available topsoil (if not contaminated), manure, compost, and any other necessary soil amendments (based on the results of a reliable soil test). In regards to soil, start with what is available and add to it as often as you can.

Once the growing area is established, the working bed itself becomes more of a system in flux, the surface of it changing throughout the season as organic matter is routinely added. In most cases these soil materials will have to be outsourced, but can probably be acquired locally. Aside from avoiding the issue of poor soil, raised beds warm more quickly in spring and allow a farmer to work the soil earlier. The soil in a raised bed drains better, and is less likely to become compacted. Constructed with accessibility in mind, a raised bed can cause less strain on the bodies of those working in them. After the initial construction process is completed, raised beds require less maintenance than conventional garden beds.

www.organicgardening.about.com/od/startinganorganicgarden/a/raisedbed.htm

Determining the Size and Shape of Raised Beds

It is smart to design the layout of your beds and to mark them off before you start digging or adding any composted growing material. You can use string and stakes and adjust them until you get the size and shape you want. Rope or a garden hose might be a good option for beds with curved borders, or simply mark your borders in non-toxic paint. Keep in mind, a simple layout is much easier to manage and is equally functional as an elaborate one.

The dimensions of the bed will vary depending upon the space available and how many beds can be constructed on the plot. Make sure that you can access all parts of the bed without stepping into it. Being able to reach the middle of the bed from either side is important for planting and harvesting activities. In other words, keep half the bed's width within an arms length.

It is also important to consider the spaces surrounding the bed space as this is the site of all foot traffic on your farm. Wheelbarrows, wagons, carts, lawn mowers, tillers, and multi-purpose equipment will need to navigate this system of raised beds using these walkways, and the easier it is to do so, the better. If it is a natural space (lawn, soil, cover crop, or wood chips) weeds, insects, mold, fungi, and any number of detriments can live here and directly affect the health/productivity of the crops. This space can also be designed with slate, gravel, concrete, brick, and many other types of material.

www.organicgardening.about.com/od/startinganorganicgarden/a/raisedbed.htm

How to Make a Raised Bed

☞ *No-Dig Method.* This “no-digging” method of building a raised bed from scratch takes more time and will be ready for planting by the following season. First, spread six inches of manure over the area to be planted. Add any type of compost (dry leaves, weeds, wood shavings, hay, or vegetable matter) that you can find.

It may be helpful to spread limestone (not quick lime) over the area at a rate of fifty pounds per 1000 square feet. In the late summer or early fall, cover the area with a material that is impervious to light and is heavy enough to hold all of the additives close to the earth, such as unopened hay bales (which can be opened and used as mulch throughout the next season, hopefully loaded with earthworms and mycelium), black plastic anchored with rocks, or metal roofing anchored with rocks. This will help the organic matter and soil mix together, and also help break down the sod. Uncover the area in the spring- the longer the cover is left on, the

better. The finished soil will be loose and loaded with microbes. It will need little further preparation other than tilling.

☒ *Dig Method.* Another method for building a bed requires less time but more labor. If getting plants into the ground is your highest priority this may be the better method. This method does little for adding microbes into the soil, but after two or three years it should be as fertile as the previous method.

Whether it is grass, gravel, or an existing planting, you will need to completely clear the area, which is the hardest part of the entire process. First, turn the soil to get rid of the sod. With a flat shovel, cut through the sod making six to twelve inch squares. With a sharp spade shovel, or garden fork, dig out each square and put it in a wheelbarrow or garden cart. When all of the sod has been removed, add several inches (or as much as you can) of ready manure, compost, organic matter and/or lime (at a rate of fifty pounds per 1000 square feet. Incorporate the compost with a tiller or shovel (the double-digging method can be applied at this point). If time allows, plant a cover crop such as clover, forage beets, alfalfa, or other tap rooted crops to help break up the subsoil and to pull minerals up into the root zone.

- *Homesteading In The 21st Century. George Nash and Jane Waterman, p. 165*

☒ *Double-Dig Method.* The double-dig method for building a bed is a simple way to incorporate compost and manure into the existing soil once the sod has been removed. First, dig a trench about one foot wide and about as deep as the shovel blade (six to ten inches deep). Place the soil on a tarp just to one side of the trench. Loosen the subsoil at the bottom of the trench using the tines of a garden fork or a broadfork. Rock them back and forth as deeply as possible. Spread manure and compost over the aerated and loosed subsoil. Next, dig another trench alongside the first, turning the removed soil into the first trench and spreading it over the top of the added compost and manure. Once the second trench has been dug, loosen the subsoil at the bottom, add compost and manure, and cover it with the removed soil of the first trench. - *The Backyard Homestead. Carleen Madigan. p. 39*

☒ *Building a Raised Bed and Frame.* You can choose from a variety of materials to construct the frame of your raised bed. Wood is a very popular choice, because it is easy to work with and it is inexpensive. Concrete blocks, natural stone, or brick are also nice options, but there is an added expense and labor to consider in using them. Some farmers simply place bales of hay or straw in whatever configuration they desire then fill the defined space with good soil and compost. This solution will only give you a year of use because the straw will decompose, but it is worth trying if you do not mind replacing the bales annually, or if you are still developing a more permanent solution.

If you choose to use lumber, use rot-resistant lumber such as cedar, one of the newer composite lumbers made from recycled plastic or pressure-treated lumber to construct your bed frame. Two by six boards are a good start as they are easy to work with and will give you six inches of soil depth above ground. Cut your pieces to the desired size then attach them together to make a simple frame. You can attach them in a variety of ways. Either make a simple butt joint at each corner, pre-drilling and then screwing the corners together with galvanized screws, or use a small piece of wood in the corner and attach each side to it. Using a level, make sure your frame is level in all directions. This is a necessary step because if your bed is not level, water will run off of one part of the bed or sit in another. If part of your frame is high, just remove some of the soil beneath it until you have a level frame.

The whole point of a raised bed is that it gives you the opportunity to grow in ideal soil. Take this opportunity to fill your bed with a good mixture of quality soil, compost, and decomposed manure. Once they are filled and raked level, you are ready to plant or sow seeds.

www.organicgardening.about.com/od/startinganorganicgarden/a/raisedbed.htm

☐ *Lasagna Gardening or Layered Bed Method.* Lasagna gardening (or sheet composting) is an efficient, no-dig, no-till growing method for making a new bed that utilizes a practice of composting directly into the bed space. To make a lasagna bed, organic matter is added in layers (hence the term "lasagna garden," coined by garden writer Patricia Lanza) that break down over time, into a nutrient-rich, fluffy soil right where you need it.

The first layer of your lasagna garden consists of either brown corrugated cardboard or three layers of newspaper laid directly on top of the grass or weeds in the area you have selected for your bed. Wet this layer down to keep everything in place and start the decomposition process. The grass or weeds will break down fairly quickly because they will be smothered by the newspaper or cardboard, as well as by the materials you are going to layer on top of them. This first layer also provides a dark, moist area to attract earthworms that will loosen up the soil as they tunnel through it. Anything you would put into a compost pile, you can put into a lasagna bed. The materials you put into the garden will break down, providing nutrient-rich, crumbly soil in which to plant. Alternate layers of "browns" (fall leaves, shredded newspaper, peat, and pine needles) with layers of "greens" (vegetable scraps, garden trimmings, and grass clippings) to achieve a suitable mix. In general, you want your "brown" layers to be about twice as deep as your "green" layers, but there is no need to get finicky about this. Just layer browns and greens, and a lasagna garden will result. What you want at the end of your layering process is a two-foot tall layered bed. It will shrink down in a few weeks.

Fall is an optimum time to start your lasagna bed because of the amount of organic materials you can get from fallen leaves and general yard waste. You can let the bed sit and break down all winter. By spring, it will be ready for planting. Also, fall rains and winter snow will keep the materials moist, which will help them break down faster. If you choose to make a lasagna bed in spring or summer, you will need to consider adding more "soil-like" amendments to the bed, such as peat moss or topsoil, so that you can plant right away. If you make the bed in spring, layer as many greens and browns as you can, with layers of finished compost, peat, or topsoil interspersed in them. Finish off the entire bed with three or four inches of finished compost or topsoil, and then plant. The bed will settle some over the season as the layers underneath decompose. When it is time to plant, just dig down into the bed as you would with any other raised bed. If you used newspaper as your bottom layer, the shovel will most likely go right through, exposing nice, loose soil underneath. If you used cardboard, you may have to cut a hole in it at each spot where you want to plant something. This layer of newspaper and/or cardboard will act as a weed suppressant. Add mulch to the top of the bed in the form of straw, grass clippings, bark mulch, or chopped leaves to retain soil moisture.

"Greens" for Lasagna Garden

Fruit and vegetable scraps

Grass clippings

Coffee grounds, tea bags, tea leaves

Seaweed

Weeds that have not set seed

Trimmings from the garden

"Browns" for Lasagna Garden

Shredded paper, newspaper

Pine needles

Straw

Peat moss

Fall leaves

www.organicgardening.about.com/od/startinganorganicgarden/a/lasagnagarden.htm

Growing on Industrial Land

For the urban grower who is attempting to grow on a site which might be severely nutrient deficient or contaminated additional back-fill material may be required, acting as a barrier between the actual growing medium of the raised beds and the contaminated soil on site. Raised beds can be built on top of a foundation consisting of layers of flattened cardboard (which may be obtained locally from recycling centers and other institutions) and woodchips (which can be acquired locally as well). This layered foundation can be built up as tall as is needed. Sometimes three feet or more is necessary to keep the tap roots of crops from drawing nutrients up through the barrier of woodchips and cardboard from the contaminated soil below. A method similar to this has been successfully utilized at the South Circle Farm in Indianapolis.

Managing Mulch

Cool mulches such as straw, pine needles, and newspaper can help control weeds by blocking visible light from reaching the soil while allowing rainwater to penetrate. They minimize the rate of evaporation thus keeping the plant roots moist even in the driest times of the season.

Temperatures beneath a cooling mulch can be several degrees cooler than that of the ambient air temperature.

Warm mulches, such as black polyethylene mulch, black landscape fabric, and IRT-100 help warm and hold the temperature of the soil. Unfortunately, none of these types of mulch are biodegradable and can be difficult to remove from a bed without tearing, at which point they are unusable and are normally discarded. Mulch can also be a beneficial method of weed control, moisture retention, and soil improvement. Avoid using mulch in very wet seasons as it can harbor slugs and serve as an incubator for a plethora of unwanted fungal, bacterial, or viral diseases.

Some people believe in tilling mulch under in the fall to prevent insect pests from overwintering, then planting a green-manure cover crop, which will be tilled under in the spring. Others decide to wait until spring to till the mulch under, but pulling any over-wintered mulch to a side as soon as snow melts to hasten soil warming and drying.

-The Backyard Homestead. Carleen Madigan. p. 35

4. Managing Soil Fertility

This section will present various methods of, and some of the ideology behind, building and maintaining healthy soil. Understanding and nurturing life in the soil is an important aspect in growing high-quality produce. It may take some experimentation to find the combination of methods that work best for your specific needs.

Crop Rotation

A well-conceived crop rotation is one of the most effective tools for managing soil fertility on a multi-cropped farm. A grower can avoid soil depletion, intense weed problems, pest infestations, and prevent disease by practicing a simple crop rotation. Planting the same crops into the same location, year after year, will result in that particular soil being overworked. To avoid this, a common approach on many multi-vegetable farms is to rotate plantings of

vegetable crops by family. Another strategy is to alternate vegetable crops with forage crops, cover crops, or green manure, such as small grains, alfalfa or clovers. By changing the crop that is planted in a particular place every season, or even multiple times in one season, less harm is done to the soil.

A plan for crop rotation can be designed if a grower knows how a specific crop affects his or her specific soil. He or she can plant a crop with properties that neutralize or compliment the effects of the previous planting. An example of crop rotation in large-scale conventional farming is corn, then soy, and then corn again. Though this example does not promote long-term health of the soil, just planting corn year after year would destroy the soil completely. The basic introduction of soybeans into this crop rotations mitigates the damage that might be done if only corn was planted year after year. When cover crops and green manure are added to your crop rotation plan, immediate affects are often unnoticeable. With persistence, however, it has been proven to be an effective way of growing successful crops while not depleting the soil of necessary nutrients.

The best way to start developing an effective crop rotation for your farm is to pay close attention to the growing area. Experience and research is your best guide, so take careful notes. Plants will leave clues as to what nutrients they may or may not need. Too many growers rotate their crops by relying on memory and making snap decisions when planting. To make the most of crop rotation you need detailed records of where crops were grown in the past as well as a written plan for how crops will be arranged in the future. When making a crop rotation plan, a grower must consider many variables. The number of beds, number of crops, amount of space in the beds for each crop (e.g. – one squash plant occupies more bed space than one carrot), and the amount of time are all important factors to consider when designing your crop plan. Start by making a map of your farm. Label the beds, including their dimensions or square footage. Make photocopies of the map and at the end of each season fill one in and date it, noting any serious pest or soil problems in a field. Prior to the growing season, fill in a new map with your best guess as to where crops will be planted, depending on growing conditions, etc. Try to develop a plan that results in the most number of years between planting similar crops in a given location. A free online version of a crop rotation manual is available at:

www.sare.org/Learning-Center/Books/Crop-Rotation-on-Organic-Farms

A practical example of a crop rotation is one designed and used by Elliot Coleman in *The New Organic Grower*. His goal was to feed sixty people, using one and one-half acres, and a separate garden for salad greens. He has found the following crop rotation to be successful, and it is an excellent starting point for beginning farmers:

☐ *Potatoes* follow sweet corn because corn can most benefit the yield of potatoes.

☐ *Sweet corn* follows the cabbage family because corn shows no yield decline when following brassicas, and cabbage can be undersown to a leguminous green manure which, when turned under the following spring, provides the most ideal growing conditions for sweet corn.

☐ *The Cabbage Family* follows peas because the pea crop can be finished and cleared by August 1, allowing a vigorous winter green manure crop to be established.

☐ *Peas* follow tomatoes because they need an early seed bed, and tomatoes can be undersown to a non-winter-hardy green manure crop that provides soil protection over winter with no decomposition and regrowth problems in the spring

☐ *Tomatoes* follow beans because this places them four years away from their close cousin, the potato.

☐ *Beans* follow root crops because they are not known to be subject to the detrimental effect that certain root crops such as carrots and beets may exert in the following year

☒ *Root Crops* follow squash (and potatoes) because those two are both good “cleaning” crops (and can be kept weed-free relatively easily); thus there are fewer weeds to contend with in the root crops, which are among the most difficult to keep cleanly cultivated. Also, squash has been shown to be a beneficial preceding crop for roots.

☒ *Squash* follows potatoes in order to have the two “cleaning” crops back to back prior to the root crops, thus reducing weed problems in the root crops.

-*The New Organic Grower. Elliot Coleman, p.66*

Cover Crops

A cover crop is a crop which is planted in a bed not currently being used for market crops to help prevent erosion of the bare soil. The biomass produced from growing a cover crop can be incorporated into the soil, increasing its organic matter content. This biomass is biological material created from living or recently living organisms and is a nutrient rich food for plants. Planting a cover crop can help prevent soil problems that affect plant growth, improve soil texture, and increase the soil's ability to hold nutrients and moisture. Deep-rooted cover crops can penetrate heavy clay, opening up passages for increased water and air flow. Leguminous cover crops are able to increase the amount of nitrogen available in the soil, a process known as *nitrogen fixation*. Legumes contain symbiotic bacteria called *rhizobia* within the nodules of their root systems that produce nitrogen compounds. Plants use these compounds to grow. When the plant dies the fixed nitrogen is released into the soil, becoming available to other plants. Many cover crops can suppress weed growth by producing thick canopies that prevent light from reaching the surface of the soil. This can weaken competing weed and suppress weed seed germination. Cover crops have also been reported to exhibit allelopathic effects. Allelopathy is the beneficial or harmful influence of one plant on another plant by the secretion of a chemical or toxic substance. For example, annual rye releases a chemical through its roots that prevents certain seeds from germinating.

It may be helpful to take soil tests before cover crops are planted. These tests may provide a baseline of information regarding the nitrogen, phosphorus, potassium, organic matter content, and pH level of your soil. This information can be used to evaluate crop fertility requirements and to help track the progress of a preventative/restorative cover crop program. There are generally two different categories of cover crop, warm-season cover crops which grow during the warm months of the year, and cool-season cover crops which grow during the cool months. Cover crops can be further classified as legumes and non-legumes. The distinct difference between the two is that legumes can fix nitrogen in the soil whereas non-legumes are used primarily for weed suppression and for increasing organic matter.

www.georgiaorganics.org/ForFarmers/CropProduction/CropPlanning/CoverCropsforSoilImprovementinHorticulturalCrops.pdf

The Midwest Cover Crops Council has substantial information related to Midwest-specific cover cropping practices at their website:

www.mccc.msu.edu

Cover Crop Manual (free online version)

<http://www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition-Green-Manure>

Green manure is a term used to describe the practice of planting nonmarket crops, including those used as a cover crop, for beneficial purposes between and during plantings of market crops. The practice is useful for nurturing the soil (even during winter), keeping weeds down, and attracting beneficial insects. A green manure crop can be seeded around an established

market crop in the bed at the same time. This practice is known as undersowing, overseeding, and companion planting. The concept is that the under sown green manure crop offers assistance in some way to the neighboring market crop. This assistance can be in the form of shade, nutrients, depth of roots, water requirements, or pest control.

Another advantage of undersowing a green manure crop is that it will be established by the time the market crop is ready to be harvested, eliminating unproductive time between plantings and, thus never exposing the soil. By giving the market crop a four to five week head start the undersown green-manure crop poses little competition for soil nutrients, and is therefore not a threat to the market crop. Some growers will also manage a green manure crop specifically as a compost ingredient because their extensive vegetable production requires that the soil be amended more frequently.

Many leguminous green-manure crops have deep-rooting abilities that help open and loosen soil that has been compacted, such as the clay-rich soil of Indianapolis, and can benefit the following planting by making it easier for the roots to reach nutrients and moisture. Lupines, sweet clover, and alfalfa, are a few examples of a leguminous green manure. They also help make nitrogen, already in the soil, available to future crops.

Green manure crops that are useful when planted with taller crops are sweet clover, vetch, red clover, or alsike clover. Dwarf white clover is useful as a sod-like cover. It also has a resistance to being matted down by foot traffic, similar to vetch.

Other green manure options include:

- ☒ Planting soybeans or sweet clover before potatoes, both will work beneath corn, as does red clover.
- ☒ Between rows of root crops, plant sweet clover or dwarf white clover.
- ☒ Spring oats and spring barley will offer soil protection through the winter, and die off before spring.
- ☒ Winter wheat and rye can withstand the winter months and may be seeded in the late fall.
- ☒ Soybeans can help protect potatoes from scab, when planted as a preceding crop.

There is an extensive selection of green manure varieties and, further, they can be planted in combination, integrating their influences and effects into one planting suited to your specific growing area.

www.sustainable-gardening-tips.com/companion-planting-vegetable-list.html

5. Composting

Composting has been an integral part of farming throughout recorded history because it accomplishes two essential tasks: dealing with farm waste products and producing a soil amendment that enhances crop production. The breakdown of dead plant and animal materials is a natural process that is happening all around us. The act of composting is, essentially, monitored decomposition. In the process, bacteria and fungi alter the organic material to make it usable for plants. The ideal compost creates a stable, nitrogen-rich, pH balanced mixture of dark, moist material ready to be incorporated into the growing area.

- *Homesteading In The 21st Century*. George Nash and Jane Waterman, p. 163

You can buy compost in bags or by the truck load from local farm and garden supply stores including Greencycle (www.greencycle.net), Indiana Mulch (www.indianamulch.com) and Tiffany Lawn and Garden (www.tiffanylawnandgarden.com) or make it yourself from a mixture of natural materials such as decomposed food scraps, grass trimmings, plant stalks, leaves,

wood chips, saw dust, straw, and horse or chicken manure. Material for compost can be obtained from a combination of local sources such as your own kitchen, restaurants, neighbors, and friends. It is advisable to keep perennial weeds, pesticide treated material and diseased plants out of your compost. Most every other form of plant material is fair game. All manure must be completely broken down before it is incorporated into a soil that will be planted immediately with a food crop. Some materials, such as wood chips, may take up to a year to break down. (or longer, depending on the type of wood and thickness of the actual chip), at which time they are ready to be incorporated into the soil.

The quality of your existing soil is the primary consideration in determining whether or not adding compost is necessary. If your soil is relatively low in organic matter and available nutrients, the addition of compost will go a long way towards boosting productivity and long-term soil health. Beds that are continuously cropped will need regular applications of compost to maintain balanced levels of organic matter, whereas beds where green manure crops are part of a rotation may not need additional compost.

The Composting Process

In a compost heap, organic materials containing carbon and nitrogen in the ratio thirty parts carbon to one part nitrogen are mixed together. The raw compost will transform into a much smaller pile of humus. The nutrients originally present in the mixture remain in the humus, but in a form that can be easily accessed by plants. The amount of time that this decomposition process takes can be manipulated by using different composting techniques.

Hot/Active Composting

The easiest way to build compost is to designate a spot in, or near, your growing area and form a heap. As material is accumulated from the various sources add it to the heap. This is known as 'passive' composting. To speed up the decomposition process build the heap in layers, covering each addition of chopped food scraps or manure with a layer of chopped straw, grass clippings, shredded leaves, shredded plant stalks, woodchips or sawdust. This will help insulate the center of the heap allowing it to stay warm. This heat is what stimulates the decomposition process and helps to kill most unwanted bacteria. At the center of the heap temperatures of more than 120 degrees Fahrenheit can be reached. Most forms of composting, such as this, are "hot" composting methods. This process is maximized when the right balance of carbon and nitrogen materials, roughly 30/1, are layered together, kept moist, and turned every two to three days until cool. This process takes more monitoring than passive composting, but can reliably result in finished compost within a month of 'active' composting time.

Composting bins can be used when farming in urban areas where neighbors may be exposed to the unsightly, odorous heaps and can also help prevent unwanted animal-pests from infiltrating the growing area. Multiple bins can be used in unison, maintaining one for a raw stockpile of material, another for an active pile, and another for the finished product. It is common to use wood pallets, used in the freight industry, to contain three sides of a compost heap. The fourth side is left open for access to the pile. Composting bins are sold in many designs, all having their own set of pros and cons. Some roll and make turning easier, but might make it more difficult to access the end product. Others end up being homes for critters and foraging pests. You may need to experiment a little before you find the method that best suits your needs and situation.

Cold/Passive Composting

Cold composting is a fungal process (instead of the process of bacteria as in hot composting) and requires a different mix of materials and different management than hot composting. The Carbon to Nitrogen ratio is different: 60/1. Fungi require a diet high in complex carbon compounds, or woody material. This includes wood chips and dry stalks from crops. These are

moistened, mixed, and piled just like a hot pile but take longer for the fungal population to reach the point at which the maximum temperature of the pile is reached. This maximum temperature should be approximately 10 degrees F above the air temperature. Piling fresh wood chips from live trees will mean a faster and higher initial temperature. This is caused by bacteria flourishing until the easily metabolized sugars and carbohydrates are exhausted, then the temperature will slowly drop. Managing a cold compost pile is much simpler than managing a hot pile. Management consists of monitoring the temperature and adding water occasionally. When the temperature of the pile drops to the air temperature, it usually means that the pile is too dry. Adding water should cause the temperature to increase again slowly. The pile is finished when its contents are dark brown to black and mostly broken down.

Vermicomposting

Vermicomposting uses worms to decompose the material. Worm beds are constructed to contain the material and worms. The worms produce high quality compost that contains plant nutrients through their excrement, which is known as “worm castings.” Using worms to compost requires an investment of time, money, and skill development. Initial cost includes beds, worms, and protective coverings. The worms thrive in cool, damp, and dark environments and will breed most successfully when these conditions are maintained. They will tolerate temperatures from 40 F to 80 degrees F. This means when temperatures exceed 80 degrees, some type of shade must be provided. When temperatures are 40 degrees, the beds should be enclosed in a heated shelter. For this reason, most commercial worm composting operations are indoors.

Bedding in a worm bin is both the living medium for the worms and a food source. Material that is high in carbon is used as bedding, mimicking the worms' natural habitat, the forest floor. The bedding needs to be moist (often described as having the consistency of a wrung-out sponge) and loose to enable the earthworms to breath and to facilitate aerobic decomposition. A wide range of bedding materials can be used, including newspaper, sawdust, hay, cardboard, or peat moss. The worms can be fed a variety of available materials from manure to crop residues. Any coarse material added should be shredded to encourage rapid breakdown.

Using Compost

Compost is primarily used as a soil amendment to increase or maintain the organic matter in the soil. Another use is to prepare “compost tea” for use in a sprayer.

☐ *Soil Amendment.* Finished compost added to the soil maintains or increases the amount of organic matter, depending on the amount used. It also adds to the diversity of the soil life and provides food for the soil microorganisms. Contrary to most advice on the subject, compost should be added to the surface of the soil. The action of tilling in or mixing compost into the soil can do more harm than good. The mixing action harms the soil in two ways. The first is through the destruction of any existing structure that has been built by the soil life. The second is that the mixing action introduces an abundance of oxygen. This stimulates a population explosion among the bacteria. The bacteria feed on the foods present, resulting in a net decrease in soil organic matter. The mixing action also kills off beneficial fungi. This is especially important to avoid when adding compost to soil used for herbaceous plants that are dependent on a fungal-dominated soil community. The soil life will be able to utilize any food spread on the soil surface and incorporate the organic matter into the soil, working from the surface downward. This is the way it happens in nature. The plant and animal debris accumulates on the surface and is used as the soil structure and quality is improved from the top down.

☐ *Compost Tea.* Compost tea is a liquid extract of compost made by “brewing” compost in a container with water for three to seven days. Chemical-based pesticides, herbicides, and some

synthetic fertilizers kill a whole range of beneficial microorganisms (along with the non-beneficial), whereas compost tea improves this microbial life. It is used to suppress foliar fungal diseases and can be added directly onto the plant and soil surface as an inoculant to increase biodiversity. By inoculating the area with beneficial microorganisms, compost tea encourages the beneficial microorganisms already present in the soil and on plant surfaces, instead of destroying them.

Compost tea contains the soluble nutrients extracted from the compost, but also all of the species of bacteria, fungi, protozoa and nematodes which might exist within the compost. Therefore, making sure that only beneficial species are present in the compost is critical. Additives are included as “food” for the bacteria or fungi present in the tea. Sugars, simple proteins, and carbohydrates can be added to a bacterial tea, while more complex foods, such as plant material (oatmeal, soybean meal and flour) can be added as food when a fungal tea is desired. The key to producing high quality compost tea is keeping the oxygen content of the brew high to promote the growth of aerobic microorganisms. This can be done using a purchased mechanism or by constructing one from common materials. It should be used within 24 hours after brewing and can be applied directly to the plants and soil. Compost tea also increases foliar uptake as beneficial microorganisms increase the time stoma stay open, while at the same time reducing evaporative loss from the leaf surface.

www.georgiaorganics.org/Curriculum/Unit%206/LessonText.doc

Detailed instructions on brewing compost tea can be found at:

www.finegardening.com/how-to/articles/brewing-compost-tea.aspx

6. Seed Selection and Crop Planning

There are a number of factors to consider when selecting seeds for the upcoming growing season. Not only will you need to know what you want to grow but also what type of seed to use: open pollinated seeds or hybrid, local or non-local. These topics have many details that can allow you to customize your garden or farm, enabling you to save your own seeds, have disease resistant plants, or cultivate plants that have been bred to your specific climate. This section we will go over open pollination, hybrid, and local seeds so that you may be more equipped to make decisions. Open Pollination Open pollinated seeds are ones that can be pollinated naturally without human intervention. There are two ways these seeds can reproduce: through cross pollination between two plants by insects, wind, water or animals, or self pollination between male and female parts on the same flower. Open pollinated seeds often have “true to type” offspring which means the offspring will resemble the parent plant keeping the genetic composition stable and allows seeds to be saved from one year to the next. Saving seeds is one of the best features of open pollination. If done correctly you can save money by reducing the need for future seed purchase, you will know the type of plant you will be getting the next year, and you can help keep that particular seed from extinction.

Hybrid Hybrid seeds are created by cross-pollinating two different, but compatible, varieties in order to achieve a particular desired trait. These seeds can be bred to work well in marginal soil or varying climates, even to possess resistance to particular diseases. Because the second generation of a hybrid seed will revert back to the original variety, seed saving is not an option. Seed savers have found ways to stabilize some hybrid seeds so they can be openly pollinated, but it takes several generation of performing the same cross from the same original varieties. Because of this, there are a handful of hybrid varieties that are also considered openly pollinated. www.garden.org/subchannels/care/seeds?q=show&id=293&page=2 Local and Non-

Local Seed Sources There are multiple reasons to purchase locally-sourced seeds. First, the seeds will be adapted to your regional climate, season length, and general soil characteristics. Second, buying local seed supports seed savers in your area, keeping a diverse and healthy seed supply for your region. Nature's Crossroads in Bloomington, Indiana is the best source available for seeds adapted to the climate of Central Indiana (www.naturescrossroads.com).

It might not be possible to source all of your seeds locally. Here is a short list of seed companies located outside of Indiana that Big City Farms has used, with success, over the years.

- Seed Savers Exchange – Iowa (www.seedsavers.org)
- Fedco Seeds – Maine (www.fedcoseeds.com)
- Johnny's Selected Seeds – Maine (www.johnnyseeds.com)
- Seeds of Change – California (www.seedsofchange.com)
- Baker Creek Heirloom Seeds – Missouri (www.rareseeds.com)
- Territorial Seed Company – Oregon (www.territorialseed.com)

When to Buy Seeds

When selecting seeds, be prepared to order early. Seed companies will start sending out their catalogs in the winter for spring and summer plantings. You can order fall seeds during this time, or you can wait until early spring. The first information you will see on a seed packet is typically the type of plant, a picture, the cost, the seed company's name, and possibly some information on what type of seed it is (hybrid, open pollinated, organic, or heirloom). Below is a list of items that should be on a seed packet and in a seed catalogue. This information will help you create a planting calendar.

- ☐ Description of the plant (sometimes, even in it is different stages)
- ☐ Cold season or warm season plant. (spring and fall plant, or summer plant)
- ☐ Instructions on how to plant (when to start, indoors or outdoors, planting depth)
- ☐ Germination temperature and number of days to germination
- ☐ Days to maturity (number of days between seed planting and harvest)
- ☐ When and how to transplant
- ☐ Spacing and thinning
- ☐ Location (for optimal light and proper soil)

Crop Plan

Planning is critical to any business, and especially for a diversified farming operation. We all know that weather and temperatures dictate what can get done in the field, but a good plan will allow you to make adjustments as needed. Planning is a cyclical process, and by comparing what actually happens back to your plan you are able to make adjustments in order to improve future production.

A crop plan is essential for creating and maintaining efficiency and timeliness in order to meet harvest goals and provide a greater diversity of produce each week to your market throughout the season. It should give you an idea of what needs to be prepared, seeded, transplanted, and harvested. Any cover crop seeding and management should be incorporated into this plan as well.

Basic Considerations when Developing a Crop Plan

A map of your farm is a good thing to have, and a fine place to start making your crop plan. The Natural Resource Conservation Service will provide you with an aerial digital map of your farm

and digitally outline your fields.

www.georgiaorganics.org/farmers/CropProduction/CropPlanning.aspx

Other questions to consider are:

- ☐ What types of crops will be grown?
- ☐ What part of the season is the ideal growing period for these crops?
- ☐ What is the total number of plants required each week (if applicable) to supply the amount of produce necessary?
- ☐ What is the total number of plants required for the season?
- ☐ Will the crop be transplanted into the field or direct seeded?
- ☐ Using the beds available, how can I most efficiently arrange successive plantings, determined by the rate of maturity for the specific crop?

Advanced Considerations of Developing a Crop Plan

After your farming operation is successfully established, you may consider some of the following questions:

- ☐ How much of each crop (in pounds, bunches, heads, etc.) do you need to harvest and how frequently?
- ☐ Is the yield storable and distributed incrementally over time? (For example: potatoes, garlic, onions, winter squash, dry beans, some varieties of tomatoes.)
- ☐ Is the crop to be planted in successive pattern, requiring regular and repeated sowings to ensure a continuous supply? (e.g. lettuce, broccoli, cabbage, cauliflower, celery, leeks, Asian greens, carrots, beets, spinach, cilantro, radishes, salad mix, arugula, bush beans, and corn)
- ☐ Does the crop have an extended harvest period? (e.g. strawberries, summer squash, green/red peppers, basil, cucumbers, fresh beans, chard, kale, collards, some varieties of tomatoes)
- ☐ What are the first sowing date and last harvest dates possible based on climate? (e.g. soil and air temperatures). This will determine the first distribution day and the possibility of a season extension.
- ☐ How many days (on average) are required for the crop to reach maturity?
- ☐ What is the appropriate timing/frequency of sowings? Each successive sowing date should allow for a small overlap in the peak harvest period to allow for an uninterrupted harvest.
- ☐ What is the total number of sowings needed for each crop for the season?

Crop Planning Software

Although it is not necessary to use computer software to help make a crop plan, it may be useful and options can be found at:

www.code.google.com/p/cropplanning

www.georgiaorganics.org/ForFarmers/CropProduction/CropPlanning/CSACropPlanning.pdf

7. Seed Starting

The working definition of seed starting here simply means starting fruit or vegetable seeds in trays and transplanting into the ground once the plant has reached sufficient size. When considering seed starting, a farmer should ask themselves two initial questions. First, given the size, scope and infrastructure of the farm is it better to start seeds or purchase transplants from another grower? Second, if starting seeds, what types of plants will the farmer need and what number of each type of plant will be needed to execute the type of growing planned? Once

these two questions are answered, the picture will become clearer regarding if/how to start seeds.

Seeding/Planting Calendar

Every farm, no matter the size, should have a detailed calendar which outlines the dates the farmer plans to start, transplant and direct seed all crops for the entire season. This calendar is best developed in the winter (when there is more time for such activities) so that during the growing season the farmer can rely on a well-planned calendar to remain proactive. Farming is inherently reactive, so the more planning each grower can do in advance the more frustration will be avoided. Of course, the calendar will need to be adjusted year to year based on conditions and observations, but over the years the farmer will be able to define their growing calendar to best fit their needs. An example of the Big City Farms planting calendar can be found in Appendix D.

Seed Starting vs. Transplanting

In the long term, it is likely more cost effective for farms to start their own seeds. However, in the short term this will require infrastructure development (all of which will be addressed below) and will increase the farmer's growing season by several weeks (i.e. – in many cases, seeds must be started six to eight weeks prior to the first direct seeding of the season). Each farmer should decide for themselves in the short, medium and long term the benefits of starting their own seeds versus purchasing transplants. There are several farmers in central Indiana who have large seed starting operations and start seeds for smaller farms in the area. For those needing to buy transplants, this is the preferred arrangement, as it keeps farming dollars in the local community and allows the purchasing farmer to work directly with the seed starting farm to grow preferred varieties.

Determining Number of Plant Starts

It is prudent for farms to develop a crop map each year, which plans and outlines specific beds throughout the growing season. This allows the farmer to determine (more or less) the number of plants starts he/she will need of each crop. For example, if a farmer plans to grow 500 row feet of tomatoes and knows that spacing should be 24 inches between plants, the farmer should plan to start at least 250 tomato plants (a vegetable planting guide is included in Appendix E and shows appropriate spacing for most vegetables grown in the area). Farmers should plan for at least 10% more starts of each type of vegetable, as some starts will die in the pot or in the ground, and extra plants will allow the farmer to fill in gaps. In addition, the farmer could start even more plants to sell to other local farmers or gardeners, or at farmers market. Plant starts tend to sell well at market and this provides the potential for early season income for the farm. Plants starts, depending on type, will sell from between \$0.50 and \$4.00 at market.

Many vegetable and herb varieties can be started or direct seeded and the farmer should determine his/her preference on starting versus direct seeding each varietal they are growing. Starting seeds gives a significant jump on the growing season, but also requires additional time and materials. We encourage growers to sample with both starting and direct seeding the same varieties to determine their preference and how each method is impacted by their growing conditions.

Potting Mediums

Seeds should be started in a potting medium rather than soil, as potting mediums significantly lighter, retain ample moisture and typically have the nutrient and material balance that are most amendable for seeds in pots. For convenience, many farmers will purchase pre-mixed potting medium at garden or farming stores. We have found Sunshine Organic Potting Medium to be quite effective. It is available locally at Carl Brehob & Son (3821 Brehob Road, on the near

southside of Indianapolis). Some farmers will mix their own potting medium and Eliot Coleman, a highly-respected organic farmer in Maine, has created a commonly used homemade potting medium that includes peat, lime, sand or perlite, blood meal, colloidal phosphate, greensand, soil and compost. Creating one's own potting mix can save money in the long term and also allows farmers to tweak their potting mix over time to respond to their specific growing conditions.

Seeding Trays and Soil Blocks

Farmers will need to decide the best set-up for their seeding operation and one decision that needs to be made is whether to use seed trays (called cell trays from here forward) or soil blocks. Cell trays tend to be 10"x20" but have different sized cells to accommodate as few as 36 plants per flat to as many as 200 plants per flat. Of course, a greater number of cells will result in a smaller amount of potting medium in each individual cell. The advantage of cell trays is that they allow for a large number of plants per tray. The disadvantages are that they need to be watered very frequently and are made from plastic that can be easily damaged. However, if a cell tray is treated carefully it can be used for several years.

An alternate to cell trays is a soil block maker (or soil blocker), which is essentially a soil mold that compresses wet potting medium into its own cell. Soil blockers come in various sizes, as small as ¾" per block to as large as 4" per block. The advantages of soil blockers are that they only require a seed tray to hold the blocks, but without any additional plastic. In addition, soil blockers are made almost entirely from metal and could last for decades. The disadvantages of soil blocking are that in order to get the block to hold together, the potting medium needs to have the appropriate moisture level (a process that takes some trial and error) and soil blocking will require much more potting medium than using cell flats.

In order to assist with seed germination, some farms will utilize seed starting domes (plastic hoods that cover the top of the tray and help to retain moisture) and heating mats (electric heating sheets that are placed below the seed trays). Though both are useful to assist with germination and growth, they can be rather expensive (particularly heating mats) and are typically only used by those with smaller seed starting operations.

Seed starting supplies are available from many places. Carl Brehob & Son (3821 Brehob Road) is an excellent source for potting medium, trays and greenhouse hardware. Johnny's Selected Seeds (www.johnnyseeds.com) also has a wide array of options.

Grow Lights

In order to get a jump on the growing season, some farmers will begin starting seeds indoors under grow lights in mid-winter. For example, in central Indiana, onion, leek and scallion seeds can be started inside in early/mid-February before being transplanted outside in mid-April. Indoor seed starting has the advantage of a controlled environment that allows for temperature regulation and consistent watering. However, indoor environments can sometimes result in mold and fungus problems on plant starts, so growers should check their starts regularly for diseases. If you notice extreme problems with mold or fungus, a hydrogen peroxide spray on effected plants is a sound organic treatment.

Grow lights can take many different shapes; typically, they contain four-foot long fluorescent light tube pairs. Farmers seed trays in their preferred manner and then place seed trays under grow lights. Lights should be placed on a timer, with about eighteen hours of light per day and six hours of dark. In addition, lights should be placed as close to the soil level as possible (within one to two inches is best at the start). Small starts tend to stretch quickly to their light source, and the farther the light is from the soil the more "leggy" (a term used to describe tall plants with weak trunks) plants will become. This is a problem because when it comes time to

transplant, the start will not have the strength to hold up to wind and other environmental factors. Grow lights should be able to move up and down; as plants grow, the lights will need to be adjusted so as to keep the plants from touching the actual light bulbs.

Hoop Houses and Greenhouses

Many farmers elect to start plants in hoop houses (unheated greenhouses with plastic stretched over hoops) or greenhouses. For farmers who are not trying to stretch their growing season as far as they possibly can, starting seeds in one of these structures tends to work well. The primary benefit of such a system is to avoid the costs associated with an indoor seeding operation.

Watering

It is important to neither over nor under water plant starts, an obvious challenge for new farmers. Overwatering can yield high levels of mold or fungus and sometimes even drown a plant, while under watering causes plants to become parched and die. A general rule of thumb is to allow the potting medium to dry almost completely before watering again, which can be determined by looking at and feeling the bottom of the tray. Perhaps the most important tip we can offer is to water deeply less often instead of lightly watering every day. For convenience in watering, it is best to grow as many plants as possible in the same size cell or soil block so that all plants will more or less moisten and dry on the same schedule.

Fertilizing

Pre-made or homemade potting medium will typically have a solid nutrient balance; however, young plants might require additional nutrients to become established, survive and thrive. There are many options for fertilizing plant starts, and sustainable farmers tend to use fish emulsion, worm castings and/or compost tea. We encourage new farmers to try various fertilizers to see what works best for them in their farming operation. In general, fertilizers should be applied while watering and fertilizing once every seven to ten days should be sufficient. If you notice signs of a lack of nutrients, often by extremely slow growth or leaf discoloration, increase fertilizing in the short term to help plants recover. Paying close attention to the health of starts should pay strong dividends, as the healthier the start is the healthier the plant will be once it is in the ground.

Potting Up

Potting up is a term that describes moving starts to larger containers as they increase in size. Depending on the amount of time until the plant will end up in the ground, farmers may need to pot up plants one to two times. Although potting up requires additional materials (e.g. – larger pots and additional potting medium) and time, there comes a point when plant starts become so over sized and root bound in their block or tray, that the farmer will lose their starts if they do not take this step.

Hardening Off

As the time arrives to start transplanting, farmers will need to “harden off” their transplants. Whether under lights, in hoophouses, or in greenhouses, plant starts tend to live a charmed life. They receive regular doses of fertilizer and water, and are out of the wind and driving rains. Hardening off plant starts simply means gradually introducing them to outside conditions. Farmers will often only move their starts outside for three to four hours the first day, five to six hours the second day, seven to eight hours the third day and then leave them outside from the fourth day forward. Of course, this requires a lot of extra work in the form of moving trays each day, but with the amount of time the farmer has spent working on the starts he/she can easily justify this effort. Before actually transplanting the plants into the ground, the farmer should be certain that the starts have been fully acclimated to the outdoors.

Spring, Summer and Fall Seed Starting

Many new farmers imagine that they will start seeds only in late winter or early spring. For diversified farms trying to grow through much of the year, seed starting will be a consistent activity they return to week after week throughout the season. We tend to seed spring/early summer starts each week from February 1 to May 15 and fall starts are seeded weekly from August 1 to September 1. This allows us to have a variety of vegetables maturing in the ground each week, and a further variety of vegetables maturing throughout the growing season. Once again, a Big City Farms planting calendar is included in Appendix D for your reference.

8. Transplanting

There is typically a wide gap in farming between the ideal and the reality. What is meant by this here is that there is an ideal time when farmers should be transplanting in order to give starts the best chance to survive. Ideal conditions would be in late afternoon on a cool day, after a recent rain, with some rain and cloudy skies in the forecast. The reason for this is that cooler temperatures, a lack of sun, and wet soil provide the most amenable conditions for young and fragile plants. However, the reality is that sometimes transplants need to get in the ground, no matter the conditions because of time, schedule, and/or availability of labor. Farmers should monitor recent transplants closely to make sure they have the necessary water and soil conditions to survive.

Bed Preparation

It is advisable that growers completely clear beds of weeds, rake beds flat and clearly define growing beds and walking paths in advance of transplanting. These activities are recommended at this point in the growing process as there will be no plant obstructions in the way of tools and bed preparation to this extent is unlikely to happen during the growing season if it does not happen now.

Watering and Soil Preparation

Once again, to give transplants the best chance for survival, they will need plenty of water upon initial transplanting and in the first days they are in the ground. On particularly warm transplant days when the soil is dry, it is recommended that growers take a systematic approach to watering. First, the transplants themselves should be watered in the cell trays or soil blocks so that the potting medium is as saturated as possible. Second, the soil where plants will be placed should be pre-watered (by sprinkler, drip tape or hand watering) and each transplant should be “watered-in.” Watering in simply means heavily watering each hole or trough where transplants will be placed in order to have as much water in that defined area of soil as possible.

Some growers will also provide plants with an initial nutrient boost at the time of transplanting in order to set them on a healthy course. In generations past, small farmers have taken on various strategies including placing a fish head in the transplant hole. A more modern version is for farmers to use a banana peel or eggshells in the transplant hole. The most common scenario these days is to place a shovel full of fresh compost in the hole as an initial amendment.

Although this step is not necessary, it can be helpful, particularly on farms where the soil is worked heavily throughout the year.

Transplant Spacing

When deciding where to dig transplant holes (typically using a hand trowel), the farmer should determine ideal spacing for each vegetable variety, which will depend both on the mature size of the plants and the tools that the grower plans to use to weed around the plants as they grow in size. A spacing chart is included in Appendix E and can be used as a guide for new farmers to determine a comfortable amount of spacing for transplants. When growing on a small scale, it is as important to make sure that plants have the necessary space to grow to full size, as it is to maximize growing space. Once again, the type of tools that will be used for weeding including hoes (stirrup, collinear, trapezoid), hand weeding tools or simply using hands for weeding, should be considered so that the tools can slide easily between transplants without disrupting root systems.

Final Notes on Transplanting

Transplanting often occurs during periods of the farming season when many activities are occurring and time is limited. Despite this, farmers should be well prepared to look after their transplants in the initial days. This will include deliberate watering, should the weather turn hot and dry, as well as having shade cloth on hand for the same reason. This will also include being prepared with row cover, particularly for early spring and late fall transplants, should the weather turn very cool with the potential for frost in the forecast. Row cover can increase soil temperature by as many as fifteen degrees, which can often make the difference between transplants surviving or perishing in a frost. Finally, growers should plan to have extra transplants available as inevitably some transplants will not survive (for a myriad of reasons described above) and growers will likely want to fill in gaps to maximize growing space.

9. Cultivation

Cultivating land simply means to prepare the soil for the coming crops, but cultivation includes much more. Before planting your crops, cultivating involves such things as tilling or broadforking rows, and then, after planting, it involves maintenance such as weeding, hoeing, and hilling. In this section, we will talk about when to do these types of cultivation and with what tools. We will also include pruning in this section because, like cultivating, pruning can encourage plant growth. Timing Never cultivate the soil until it has been tested and you know what is necessary to improve your soil. Deep cultivation should be done only in preparation for a new crop rotation or when first building out your farm. After you have established rows, turning over the soil or cultivating deeply is primarily only used to prepare the beds for plantings or to mix in compost. It is unnecessary to cultivate before the winter because the plants will not be in the ground to take advantage of the nutrients being released. Instead, it is better to improve the soil by applying compost and mulching rows. Keep in mind that beneficial microorganisms and earthworms are at work in the soil and it is best not to disturb them.

There still needs to be some cultivation done throughout the season, but it is important to minimize excessive soil disturbance. This is achieved through surface cultivation and it is done with a rake, stirrup hoe, collinear hoe, or broadfork. The idea is to keep weeds down by cutting off their tops from their roots and doing so when they are small so as not to damage your crop roots by going deep. When a plant is finished for the season, pull it up and compost it, use a stirrup hoe to kill weeds and apply mulch for the winter, saving deeper cultivation for spring. (www.growveg.com/growblogpost.aspx?id=166)

Cultivation also includes hilling. This refers to building up the soil around the plant to protect the roots from being exposed. The best examples are with potatoes and corn. As potatoes get larger, they often start to come up out of the soil. Simply covering them with soil or mulch will prevent sun damage. Corn grows brace roots before they start producing. These are to support

the stock against wind and the coming crop. Still, farmers often find that corn still has issues staying upright so they might employ hilling as a way to help. They often plant corn in a small trench and, as the stock grows, they periodically hill the plant.

No till gardening is gaining popularity and involves minimal disturbance to the soil so that earthworms, organic matter, and good soil structure can be established. It involves surface cultivation to keep the weeds down without breaking into deeper soil. Tilling the land not only disrupts the soil ecology but it also can cause too much aeration and erosion of the soil. To begin reducing your reliance upon tilling, you will need to have a good amount of nutrient-rich soil already in place, with the plan of adding to it as you use the land from year to year. Throughout the season, use surface cultivation as the plants are growing, leave spent plants to decompose in the field, and add compost and organic material when putting a bed to rest. Some aeration may be needed and can be done with a broadfork without disturbing the soil too much. The best rule to follow is to avoid turning the soil upside down and tread lightly or not at all on planting areas. (www.no-dig-vegetablegarden.com/no-till-gardening.html) Tools

Primary cultivating tools include:

☒ Stirrup Hoe - Looks like a stirrup for a saddle and moves back and forth, enabling it to work in both directions. It goes just below the soil to cut the roots of weeds but does little damage to the basic soil structure.

☒ Collinear Hoe (short or long handle) – Performs a similar task as a stirrup hoe by removing weeds just below the soil and avoiding any further damage to the soil. This hoe, however, does not work well in compacted soil.

- Broad Fork - This is a large horizontal bar with several metal tines attached. The tines are long and evenly-spaced along the bar. The tines are inserted into the ground and used to gently aerate the soil. Some people use this instead of a rototiller because it aerates the soil but does so in a less destructive way.

- Rototiller - This is a machine with blades either in the front or the back that rotate and dig into the ground to break it up. Tillers should only be used when building out or rotating crops as their action causes significant disruption to the soil.

Pruning Pruning is important to encourage healthy growth of the plant and the quantity and size of fruit. Pruning means to cut off or pinch away parts of the plant to increase growth. Knowing where the active growth is on the plant will help you know where to prune. Active growth usually is at the end of the branches or vines so the buds further down the plant are waiting their turn. It is important to take off any damaged or ripe fruit so the dormant buds can start growing. Similarly, if there are extra branches or leaves those can be taken off so the plant can focus on larger and more fruit. There are different reasons and ways to prune plants so make sure to do some specific research on the plants you are growing.

(<http://www.learn2grow.com/gardeningguides/edibles/caremaintenance/PinchToGrowAnInch.aspx>)

10. Tools

Tools that individual farmers will need depends upon the size of the farm, the budget available for tools from year to year, and the appropriate tools needed to keep the farm operating efficiently. In addition to new tools, farmers should constantly be on the look out for used tools that fit their farming needs.

Non-Mechanized Tools

Most small-scale farms can be successfully managed with non-mechanized equipment and having an appropriate cache on-hand will save the farmer time and effort in the long run.

☒ *Weeding Tools* – We suggest farmers have various tools for weeding, including stirrup hoes, collinear hoes and hand hoes. Weeding tends to be the most time consuming activity on small, sustainable farms and having a variety of weeding tools at your disposal for various planting situations will be worth a small investment. We suggest that you also have comfortable gloves for weeding, as invasive weeds such as poison ivy will often find their way onto farms, and it is wise for farmers to have protection against potential irritants.

☒ *Direct Seeding and Transplanting Tools* – For farms whose structure is laid out in longer planting beds, a wheel seeder is an extremely wise investment. Wheel seeders allow farmers to put seeds in a hopper and seed long rows in a minimal amount of time. The most popular single row seeder on small farms is the Earthway Wheel Seeder. A more precise (and more expensive) model is the Jang Wheel Seeder, which is also commonly used. Farmers who grow many small greens or root vegetables that are planted close together may find use in purchasing a six-row seeder, which as the name implies, seeds six rows at one time. Farmers will need hand tools to dig appropriate holes for transplanting seedlings. A hand trowel works well for this purpose, and we have found that hand hoes are also useful as both a weeding tool and as a tool for digging transplant holes. Farmers who have back problems, or imagine working with volunteers who have a difficult time bending over to transplant, could consider a Hatfield Transplanter, which allows two people to transplant starts without bending over.

☒ *Bed Preparation and Farm Maintenance* – Farmers will need various tools to keep beds in order, and for general farm maintenance. A common set of such tools will include a spade shovel, flat shovel, stirrup hoe, hard-tined garden rake, leaf rake, post-hole digger, pitchfork, broadfork, post pounder, sledgehammer and pruner. This set of tools will be able to do ninety percent of the day-to-day activities that will be required for general farm maintenance. Of course, each individual farmer will at some point realize they are missing certain tools that will make the work more efficient, and keeping a “wish list” of such tools is advised.

☒ *Harvest Tools* – Appropriate harvest tools will depend entirely on the crops being grown by the farm. In general we suggest that farmers have multiple sets of harvest knives (both serrated and flat) and multiple scissors and shears. These tools can be used to harvest everything from small greens to large cabbages and broccoli. Harvest tools should be kept very sharp, and we suggest purchasing a slate sharpener and sharpening tools regularly. For farms that focus on small greens (spinach, mixed lettuces, arugula, etc.) an investment in a greens harvester may make sense. A greens harvester allows a farmer to harvest across an entire planted bed, instead of hand harvesting with scissors row by row. Anecdotal conversations with other farmers have indicated that this tool will allow for greens harvesting in a fraction of the time when compared with harvesting with scissors.

Mechanized Tools

Farms that are located in residential areas where a certain aesthetic is expected should have (or have regular access to) a lawn mower and weed eater. Some farms will also find that they need a front or rear-tine tiller for the times of year when significant bed cultivation is required. Larger urban farming operations (one acre or more) might consider the large investment (multi-thousand dollar) in a walk-behind tractor. A walk-behind can replicate many of the functions of a traditional tractor on a small scale, and have a wide variety of attachments for various functions (including tiller, hiller, mower, chipper, shredder, etc.). Walk behind tractors can allow

a small farm to significantly increase efficiency. Of course, this comes at the cost of an initial investment, regular purchase of gasoline and general on-going maintenance.

Final Thoughts on Tools

If the urban farm model the individual farmer plans to develop will involve interns, apprentices and/or volunteers, it is wise to have multiple sets of tools that can be used by all farm labor. This will require an additional capital investment, but the cost savings of labor and correct tools will save the farm significant time and money in the long run. We urge growers to be realistic about the amount of additional labor their farm can anticipate and plan tool purchases accordingly. We suggest future farmers spend time browsing through the tools sections of many seed catalogs and farm supply companies. We also suggest potential farmers visit other urban farms in Indianapolis and the region to discuss tool use, and perhaps trial various tools used by other sites. Fellow growers tend to be quite willing to share the advantages and disadvantages of the various tools on their farms as well as provide suggestions on other tools they would find useful for their farming operations. Tool procurement can be a significant investment, even for small-scale operations, but as the farmer gains experience he/she can start to see how smart purchases of targeted tools will save time and effort and increase productivity and efficiency.

11. Insects

In popular imagination, insects are merely viewed as creatures that should be banished from any and all gardens, as they are surely out to wreak havoc. Fortunately, this viewpoint has begun to slowly erode with an increased understanding of the intricate and valuable role that insects play in a healthy, balanced ecosystem – something that any farmer should strive for.

The Role of Environmental Stress

It has been widely demonstrated that applied environmental stress will predispose plants to a heightened susceptibility towards diseases and insect damage. This is accomplished by substantial changes that occur in plant physiology due to drastic changes in water supply, excessive heat, or insufficient nutrients. Similar to humans, plants have a built-in immune response system that allows them to successfully confront potential threats to their well-being. When a plant is able to adequately meet all of its nutritional, water, and light needs, it is better prepared to deal with insects and diseases. For example, when plants experience even moderate levels of environmental stress, the chemical processes that naturally occur within plants are disrupted, making the plant more palatable to some insect populations.

Chemical Responses to Stress

These sorts of chemical changes can work in a plant's favor, assuming that it is in a sufficiently healthy state when its leaves are eaten by herbivore insects. Plants are actually able to emit volatile chemicals that act as phytodistress signals. These chemicals are released in order to attract parasitic and predatory insects (beneficial insects) that are natural enemies of the herbivores. This is just one example of the sophisticated immune response system that healthy plants possess and are able to employ when they are not excessively stressed by their immediate environment.

Plant-Focused Approach

There are a variety of ways to encourage the natural, biological defenses of plants to potential insect damage. The most basic ones focus on ensuring that a plant has sufficient water, sunlight, and food. This sort of direct action is achieved through careful cultivation of healthy soil that possesses ample nutrients and organic matter for water retention capabilities. This also means to avoid over-crowding of plants so that their leaves are able to receive ample sunlight, their

roots are not competing for limited water supplies, and their stems and leaves have ample room to spread and grow.

Systems-Focused Approach

A more subtle approach to improving plant health and limiting potential insect damage is to focus on the structural and biotic diversity of the growing space. This involves planting different vegetable varieties and species in order to create a polycultural environment. This sort of ecological diversity accomplishes a wide range of goals that are beneficial to overall plant health. It can increase the available microhabitats within a given space, allowing the farmer to address a specific variety's needs more fully. The diversity also complicates the chemical cues that herbivore insects depend upon to find food sources, disrupting their foraging instincts. Lastly, polycultures improve the stability of a sustainable predator-prey relationship between insects.

There are certain plants that are attractive to beneficial insects, and which can be used to help maintain a sustainable growing operation that does not suffer from excessive insect pressure.

An excellent resource on increasing on-farm biological diversity in order to attract beneficial insects is "Farmscaping to Enhance Biological Control:" www.attra.ncat.org/attra-pub/summaries/summary.php?pub=145

Mechanical Control of Insects

Big City Farms employs ecologically sensitive methods of pest control when insect damage becomes noticeable and significantly decreases the likelihood of successful harvests. The approaches vary from species to species, but are intended to impact the land in the least intrusive way. For example, when aphids become a notable presence on plants, they are sprayed off with a high-pressured blast of water. This action knocks the aphids off the plants and disables the attachment mechanisms they might use to return to plants. Another example is hand-picking cucumber beetles from cucumber and squash plants. This is done in the early morning, when the bugs are most sluggish. Although this method is labor-intensive, it can be employed successfully when cucumber beetle populations are at a minimum.

Lightweight row covers can be a useful preventative tool in addressing potential insect pressure. This breathable material is placed over young plants to provide a physical barrier to insects. It is often used with squash, cucumber, and arugula plantings. Kansas State University has compiled an excellent plant problems/pest resource: www.hfrr.ksu.edu/p.aspx?tabid=586

Growing vegetables without the use of chemical insecticides requires the grower to be especially vigilant to the soil health, changes in plant physiology, and the presence of insects, both herbivorous and beneficial. This increased level of attention should be viewed in a positive light, as it encourages the grower to be more attentive to the overall health of the farm's ecosystem and the ways in which that ecosystem can expand and contract.

12. Harvest/Storage

Timing Harvesting is a very encouraging time. Finally, there is tangible proof of your hard work! Because fruits and vegetables have different varieties that should be planted at different times, they will also be ready to harvest at different times. Vegetables like root crops and leafy green crops will be ready in the cooler weather, and vegetables such as peppers, squash, tomatoes, and others will be ready in the warmer season.

The best way to make sure you are harvesting at the correct time is to make a harvest plan. You should already have an idea of what you will be growing and a planting calendar to work with through the season. With that information, you should have an approximate time for harvesting

particular crops. You could also look up a specific crop to learn what the plant should look like when it is ready to harvest.

Kansas State University has an excellent guide to harvesting:

www.ksre.ksu.edu/library/hort2/mf661.pdf

Harvest Supplies

Before you go out to harvest your crops, think about the type of supplies you might need. Each plant will have a certain way to harvest to keep production going, so make sure to check seed packets. Some fruits and vegetables are simply plucked from their plant but others require clippers or harvesting knives. Here is a short list of the supplies you might need while harvesting:

- ☑ Harvest knives (for plants such as fennel and bok choy)
- ☑ Small clippers (to clip herbs and greens)
- ☑ Shovel (for root crops)
- ☑ Crates or containers (to store harvest)

Post-Harvest Treatment It is important to know what to do with crops immediately after harvesting. With correct treatment, produce will stay fresher and last longer. Usually post harvest treatment involves cooling down, washing, and in some cases, making sure there is sufficient water for the produce to stay crisp.

When harvesting in warm weather, it is critical to cool the harvest down immediately. For example, greens, roots, herbs, and other such plants do well in warm weather while still attached to the plant, but once they have been harvested they can wilt quickly. It is ideal to wash and store in a cooler, but if that is not available, have cool water in which to dunk and store them until you can get them to a permanent cool location. Make sure the root or stem part of the plant is set into the water so wilting can be avoided. Also, allow enough room in the storage container so that the vegetables are not crushed, keep them out of the sun, and plan your harvesting as close to the time you will be passing the produce onto the customer. These steps are necessary to accomplish the goal of fresh, quality, and clean produce for your customers.

In colder weather, washing and providing water is just as important even though there is less risk of wilting. It is also a good idea to wait for frost to thaw before harvesting. Cold-hardy plants such as broccoli, cabbage, and kale will be fine to harvest with a little bit of frost, but by waiting you will give the plant time to revive itself from the heavy frost. The plant may look like it is done for, but you will be surprised how they come back as the day gradually warms.

Post-Harvest Supplies

Once the harvest is clean, you may need to bunch or bag some items. It is easy to forget to plan for these supplies but it is important to always have them on hand. Here is a small list of what you might need and their uses:

- ☑ Bags and twist ties (for lettuce and salad mixes)
- ☑ Rubber bands (for bunching greens and herbs)
- ☑ Scale (for weighing your portions)
- ☑ Boxes or coolers (for transporting and storing)

A goal of visually appealing crops should be an important post harvest consideration. Though cleaning and cooling are the most critical, the way your harvest is bunched and the quality of presentation should be considered at this time as well.

Things to consider include:

- ☑ Do you have all the crops and supplies you need?

- ☑ How is the quality?
- ☑ Are your bunches and/or bags of equal weight or volume?
- ☑ Are bunches and/or bags neat, put together and have enough room to prevent crushing?

Storage options Once you have cleaned and cooled the harvest you may need a place to store the items until the produce gets to the customer. Not all farms have the luxury of a large or walk-in cooler, which is ideal for storage. Some farmers find refrigerators or other smaller coolers to work with and others use ice coolers and ice packs for storing (these are good for transporting as well).

Just as each plant has specific instructions on planting, caring, and harvesting, each plant harvest has a different way for storage. For example, lettuce should be stored clean, somewhat dry, and in a cooler while potatoes and onions should be stored in a dry, dark place, that is cool (50° to 60°). With that in mind, you should know the storage needs of your harvest and plan accordingly.

13. Distribution and Marketing

Whether for-profit or non-profit, all farms and farming projects need a detailed plan for distribution of produce to be able to maximize production and minimize waste. Before embarking on any farming operation, we highly recommend that the farmer consider all their distribution and sales channels before settling on a final plan. It is absolutely essential that a model is selected that allows the farmer to be able to maintain and advance the farming operation, and have the time to distribute produce and develop relationships with customers. In any business or initiative, the best customer is the return customer. Finally, the farmer must be aware of utilizing a sales model that will allow for a healthy work/life balance, a piece that is often forgotten or ignored by farmers.

Community Supported Agriculture (CSA)

The CSA model was developed in Germany, Switzerland and Japan as a response to food safety and the limiting of agricultural land, and was brought to the United States in the mid-1980s. The model of a CSA involves a farm recruiting “members” or “shareholders” who pre-pay for their seasonal vegetables in advance and are provided with a box or bag of produce during consistent intervals throughout the growing season. In the Midwest, CSAs typically run from between 15 and 25 weeks with produce pickup happening one time each week. A good rule of thumb for small growers practicing intensive planting is 25 CSA shares per acre. Of course, this can vary widely and we encourage farmers to initially plan a CSA number that easily fits within their growing space.

CSA farming models have many advantages, perhaps none more than providing the farmer with the initial financial capital to begin the growing season, as well as a guaranteed income to be spread throughout the year. CSA members will typically sign an agreement stating they understand that farming is an uncertain industry and will share in the “risk” by accepting that there could be droughts, crop failures and bug/pest pressure. Of course, CSA members also share in the “reward” during years in which crop yields and quality are particularly high. CSA farming also has disadvantages, in particular the necessity for a very detailed crop plan so that produce is consistently available throughout the CSA season. CSA farming can also come with some amount of pressure, in trying to provide members with value for their investment throughout the growing season. For this reason, some CSA farms will occasionally purchase product from other farmers whose farming practices are well aligned with their farm during weeks of particularly thin harvest. Furthermore, the CSA model puts a large administrative

burden on the grower and typically includes a weekly newsletter with recipe(s) and email correspondence with members. Many CSA farms will also have a social media and web presence to keep members updated. We have heard of CSA models that trade a CSA share for administrative assistance and each farmer should calculate if such a trade is cost effective for their operation.

For new farmers considering the CSA model, we recommend starting out with a shorter CSA season and/or a smaller number of CSA members to give the best chance for success during the first growing season. It will be much easier to increase the size and scope of a CSA year to year versus running a CSA that is too large for the size of the farm. It is wise to keep a CSA tracking form each year so that farmers can easily look back at what was included in their weekly share each week. Examples of Big City Farms CSA Tracking sheets are available in Appendix E.

Farmers Markets

The popularity of farmers markets has increased exponentially over the last few decades and farmers markets can now be found on most days of the week around greater Indianapolis. When considering attendance at a farmers market, the grower should consider many factors including: attendance at summer and/or winter markets depending on crop varieties, location of the market, day of the week of the market to be able to accommodate harvest schedule, whether or not the market is grower/producer only (this implies that farmers can only sell products they grow/produce and not resell for other farmers/producers), and the number of vegetable growers at a particular market (e.g. – being one of few vegetable farmers at a small farmers market, versus one of many vegetable farmers at a large farmers market).

We encourage new farmers to shop at farmers markets they are considering attending several times to get an understanding of the type of customer in attendance, the type of products available and the number of customers who attend week to week. One of the major challenges of farmers market sales is determining how much product to harvest and bring to market each week. Of course, farmers want to take as much product as possible to maximize sales, while at the same time not taking too much as to minimize waste. Some farmers market (or individual farmers) will take unsold produce to food pantries or to Second Helpings (a food rescue non-profit located downtown) and can often receive a tax deductible donation form for the value of the produce.

Restaurants/Groceries

The increase in locally owned restaurants and groceries purchasing from local farmers has been steady and profound in recent years. Though chefs and shop owners can often purchase the same non-local produce from large distributors at lower costs, they are increasingly valuing the freshness of the product, the connection to local farms and the decreased carbon footprint of local distribution. In addition, it becomes a good marketing tool in a competitive restaurant world to promote a connection to local farms and farmers.

A major benefit of this type of distribution model is that the farmer can harvest the exact amount of product that the restaurant needs in a given day/week without any waste. A disadvantage is that there is an increasing number of farmers focusing on distribution to locally owned restaurants and groceries, so the market is becoming more competitive and, as such, product prices may be declining. We highly recommend that growers try to connect with chef and shop owners whose businesses are close to their farm and discuss what types of produce they would like grown for their establishment. We tend to meet with all our chef contacts each winter to summarize what they bought during the previous growing season and plan what to grow during the following growing season. This personal connection and personal service takes

a lot of time, but results in a higher level of interest and investment by the chef or shop owner. It is worth stating again, the best customer is the return customer.

Farm Stand

Farm stands are a unique opportunity for distribution, particularly for urban farms located in neighborhoods as they can access regular customers passing by car, bike and foot. The farm stand model is very straight forward, with customers coming to the farm site at prescribed hours to purchase produce. We have seen farm stand models where farmers will pre-harvest produce much like a farmers market, and other models where farmers will wait until customers arrive to the farm stand and harvest specifically to their order. Of course, the latter model is predicated on the farm stand and farming operation being in the same place. A secondary advantage of a farm stand distribution model is that it allows the farmer to continue to work during their distribution period. With limited hours during the week, any additional time being able to maintain the farm will be useful.

Pick Your Own (U-Pick)

U-Pick farms typically exist in rural areas as they typically require a lot of land, which is limited in urban areas. Nonetheless, a portion of a farm set up for U-Pick could be an interesting option for some farmers. A few factors should be considered in this model, the first being that the farmer will have to demonstrate to shoppers how to harvest particular crops. Second, for U-Pick operations to be profitable, farmers should focus on renewable crops (i.e. – crops that are not one time harvest like root vegetables). Possibilities for such an operation include peas, beans, kale/collards/chard, cherry tomatoes and okra, just to name a few. Watermans Farm Market (www.watermansfarmmarket.com) has a u-pick operation at two locations on the south and east sides of Indianapolis.

Institutions

Schools, universities, hospitals, culinary training programs, churches and food banks/pantries are also becoming increasingly interested in purchasing from local farmers utilizing sustainable practices, thus institutional distribution is worth considering for new farmers. One barrier to such an arrangement is that the volume of product that many institutions require may be beyond the scope of what an urban farm can provide. As an alternative, an urban farm could focus on one or two crops to grow for larger institutional distribution. There are some systematic barriers to work with institutions (particularly educational institutions and hospitals) whose food services are operated by corporate catering companies. Often these companies are not headquartered locally, so finding the appropriate person to approach can be difficult. If/when the contact is identified, he/she must be convinced that the price of the product is somewhat comparable to current pricing and convince the contact of the benefits of working with local farms and farmers. In the initial years of a farming operation, this is not likely the strategy to take, but in the midterm it may be worth considering

Big City Farms has distributed limited amounts of produce to food banks/pantries, or other agencies focused on providing free/inexpensive meals to those in need. Typically in this type of arrangement, the produce is purchased by a third-party non-profit or charity, to give the farmer a fair rate, and then given to the food bank/pantry. In an urban setting in particular, food access is a major topic of discussion and with more and more funding moving in this direction, distribution with this mission in mind could be a growing sector.

Mobile Market

There are various models of mobile markets that exist in Indianapolis and other urban centers, which involve taking product for sale directly to the homes/neighborhoods of customers. The set-up of such a system is only limited by the imagination of the grower and could take place by truck, car, bicycle, golf cart, or any vehicle of your choosing. Of course, there is additional labor and time in packing, transporting and keeping produce cool, but there is also the potential for increased sales by exposing a farm to new customers (think ice cream truck idea).

Final Thoughts on Distribution/Sales

Each farmer should decide on the distribution option(s) that work best for their farm. One way to reach this decision is to consider how much time each week the farmer can devote to harvesting. Some farms will focus on several days of smaller harvests and other farms will focus on one large harvest per week. In addition, farmers should establish a system that allows them to track their harvests and sales each week and throughout the growing season. This is of the utmost importance so the farmer can start to generate a year-to-year record of crops that sell particularly well/poorly and also have record of income generated by sale of their produce. At Big City Farms, we utilize Fresh Books, a fee-based on-line invoicing system (www.freshbooks.com), but a well-designed spreadsheet will serve the same function for free.

Developing a Farm Newsletter

In the potentially complex relationship between a farmer and his/her customer base, good communication is absolutely necessary. A common form of communication is a farm newsletter. The goal of a newsletter is to establish regular updates to your audience. In addition to reporting on current farming conditions and progress, newsletter topics might include community events or other opportunities for local activism. The newsletter is an opportunity for readers to follow along in the development of your farm, reflecting significant activities in its operation such as planting and harvesting, and to inspire your audience to become, and remain, involved in the production of growing their food. www.extension.missouri.edu/p/G419

14. Crop Extension

Crop extension is the term used to describe when a farmer employs different techniques to provide improved growing conditions for plants which might have been transplanted before the last frost in spring or to continue growing after the first frost in the fall. This longer season means continuing production and income for the farmer. These techniques can be on a small scale such placing containers over a plant for frost protection by creating a small green house. Larger-scale techniques include cold frames, varying weights of row covers, high tunnels and hoop houses, and green houses. Cold Frames Cold frames are boxes low to the ground with a transparent top. They allow light to come in, keeping in warmth, and protecting plants from harsh weather. This is a way to start your plants earlier in the season and can help plants survive later into the winter. There are many different plans you can use to make a cold frame, some of which you can make out of items found around your house. Instructables.com has a great list of different cold frame plans. Row covers Row covers are used to protect plants from sun, rain, cold, wind and pests. Row covers, or low tunnels, are made from curved pipes that arc over the bed about every four feet and are covered with a plastic or breathable fabric that is secured along the sides and end of the bed. There are several different thicknesses you can use and different variations, such as floating covers or frost blankets, and there are many different ways to construct the row cover to improve harvesting access and ventilation. Whatever style you choose to work with, the general idea is to protect the crop from wind and cold, with the hope that it will continue to produce longer into the season.

Breathable fabric row covers are increasingly used in fresh fruit and vegetable production. They come in different thicknesses to allow different degrees of sunlight and water to permeate while protecting plants from wind, cold and pests. If frost is a major concern, a thicker row covering might be best, but that also means less sunlight will get in. In this case, uncovering the row on a sunny day is necessary. With a lighter fabric, light penetration will be improved, but frost protection will not be as good. There is even shade cloth that is used, not for protection against the cold, but against the heat of mid summer. This is especially helpful for lettuces, small greens, and some herbs that prefer cooler temperatures. Plastic covering can be used as well and provides great protection against the elements, but does not allow airflow and rows should be uncovered regularly. These row covers are often supported by arched pipes or PVC and are anchored down with bags of sand, bricks or other heavy items. For more information on row covers, we suggest Eliot Coleman's book *Four-Season Harvest*. Chapters nine and ten are dedicated to covered gardens and high tunnels.

High Tunnels/Hoop Houses

High tunnels are like row covers, but on a larger scale. They are unheated plastic tunnels, the skeleton of which can be made of wood, PVC pipes or metal pipes. Because high tunnels are constructed of a simple frame with minimal infrastructure improvements, the overall cost is much less than a greenhouse, while providing much of the same protection. There are variations on sizes and styles, but high tunnels are tall enough to walk and work in, allowing enough room for plants needing more space than a low row cover can provide. Just like the row covers, high tunnels are used for protection from the elements, and are built to enable ventilation when needed. Additional insulation from the cold can be provided by adding low row covers over the beds inside the high tunnels, giving a double layer protection. The cost of building a high tunnel will vary depending on the size. A great place to start planning your high tunnel is at www.hightunnels.org. It can give you an idea on what you might need and how much it might cost along with instructions and links to sellers.

Greenhouse

A greenhouse is a glass- or plastic-covered building where plants can grow year-round and be protected from the elements. It is heated by the sun but can also have an additional heating system with ventilation to help with airflow and temperature regulation. Because of this controlled environment, greenhouses can be expensive, but they provide the most assured protection from elements. For more on building a greenhouse, the West Virginia University Extension Service has information about planning and building a greenhouse (www.wvu.edu/~agexten/hortcult/greenhou/building.htm). Also, Farm Tek (www.farmtek.com) has useful information when planning and pricing greenhouses.

Overwintering Overwintering occurs when a crop is planted early enough in the fall for roots to be established. When the cold months come along the plant growth slows, yet the crop is not completely killed by the colder temperatures. This can result in an earlier and sometimes healthier harvest. Some plants to consider overwintering include garlic, onions, parsnips, carrots, cabbage, cauliflower, and broccoli. Keep in mind that over wintering does not mean you can sow the seeds and leave them be. The plants need protection by applying any of the covers described above and/or mulching. An excellent book concerned with a popular, overwintered crop is Ron L. Engeland's book *Growing Great Garlic*.

15. Putting the Farm to Bed

When the summer markets are over, the growing has slowed, and the big harvest has come and gone, what remains is preparing the farm for winter. The chores on the farm at this stage of the season are meant to protect the soil life over the next few months (when temperatures will fluctuate from freezing to thawing), and to ease the workload of preparing the farm next spring. Before the ground freezes, the last of the remaining crops needs to be harvested, stored or composted, and all of the beds should be cleared and planted in a cover crop. Ideally, the beds receive a top dressing of fresh compost before being seeded with cover crop.

Four weeks before the first frost is about the time to seed a winter cover crop. Be aware that legumes are slower to germinate so you might get them into the ground before mid-September. Options for a beneficial winter cover crop are many, including oats, peas, rye, clover and hairy vetch. A cover crop of rye can be planted as late as the first frost. These crops hold the soil throughout the winter, decreasing erosion and the loss of topsoil that can happen with heavy wind and precipitation. They also contribute organic material when their roots and greens are incorporated back into the soil in the spring. Some of the roots of these crops will pull nitrogen up from deep within the ground, making it more available for the next spring and summer crops. When winter comes unexpectedly, or the chores of putting the farm to bed are too many, reprioritizing may be necessary. If clearing the beds of crop debris and adding it to the compost pile is not possible, chop what remains planted at ground level, leaving the roots, and shredding the debris, leaving it in the bed as mulch. Although this is not ideal, it is better than leaving the bed unplanted and exposed. Be as selective with this method as possible.

Vegetables in the brassica family (cabbage, kale, broccoli, Brussels sprouts and cauliflower) left in the ground may help attract then kill off insect nuisances like wireworms next spring by releasing cyanide compounds into the soil as it warms. Remove as much tomato and potato plant and debris from the beds as possible. Blight will feed on the living tissue of these plants and can survive the winter. Many growers will not even compost this debris for this very reason. Compost piles will still need turning throughout the winter.

This is the time to get an updated soil test so that you can use the results to guide next year's vegetable crop rotation and cover crop/companion planting plan. Then you can order the seeds that you need. Additional activities might include:

- ☑ Shovels, trimmers, hoes and all the various hand tools will need cleaning and sharpening before spring and any wooden handle could use oil rubbed into it.
- ☑ Harvest containers will need to be cleaned and sanitized.
- ☑ Row covers need to be stored. It would behoove the grower to label them individually, including length and width, to be used on the appropriate beds in subsequent seasons.
- ☑ Any machinery, farm vehicle, tractor, tiller or mower will need an oil change and other repairs.
- ☑ Do not forget to tune your bicycle; we at Big City Farms have found this to be a very reliable farm tool!
- ☑ Hoses and irrigation can be drained, rolled, labeled and stored. If drip tape is your method of irrigation and you plan to reuse it, it is a good idea to wash, or at least wipe down, the lines to remove any mineral build up at the emitters. Try not to tear or crease the line as you roll them up. Any exposed spigots or water lines need to be insulated so as to not freeze.

Do not neglect your client base, volunteers or various supports in your community over winter. Consider keeping an ongoing newsletter or blog to keep these supporters informed. Many people may have missed the window to be involved last season and only need a reminder of the

upcoming opportunities to participate during the next season.
www.publicradiokitchen.wbur.org/2011/11/04/goodnight-field-putting-a-farm-to-bed

16. Time Management

Labor

There is a tremendous amount of physical, logistical, and emotional work required to operate a successful farm. The days are long and tasks often need to be completed, irrespective of the weather. In addition, it takes time, patience, and a certain degree of foresight to create a workable planting and harvest calendar for the upcoming growing season. On top of that, there still remains a fair amount of work, post-harvest, in regards to marketing and distributing the product that you have so carefully tended.

Many people who enter farming are particularly good at one of these areas (labor, planning, or marketing) and plan on increasing their proficiency in the other two areas while the growing season is in process. This seems to be the way that many new farmers start out – diving into the project with love, excitement, and the desire to reorient their lives entirely towards farming. This is wonderful to witness and heartwarming to support, but it is also a quick and easy road to burnout. As much as we want our crops to grow on enthusiasm and desire, pursuing farming as a full-time job requires planning and a thorough consideration of one's capacity and level of commitment.

Time Off

Growing quality produce can feel like a 24-hour, seven day a week job. Plants do not stop growing (or wilting, for that matter) just because the workday is over, and it is difficult to stifle the desire to check on new plantings or weed a particular plot one more time. However, plan on factoring in at least one day off during the week to not worry about farming. The physical and mental respite that such a break (even a short one) affords will go a long way towards ensuring that you are willing and able to maintain that initial level of excitement you might have felt when you first thought about starting your own farm.

Planning

When starting out, it is critical to ask yourself how much time you are willing to devote to the entire process of running a farm, how much money you think is fair to expect in return for your labor, and how the farm's general operations can be best formulated to meet your goals and needs. It is easy to let the excitement of growing good food for an appreciative public overshadow the toll that long hours and minimal income can take on you.

With that in mind, take the not-insignificant time needed to create a detailed, long-term business plan. It is not enough to simply dive in, thinking that you will grow vegetables and people will buy them. What is your market? What kind of vegetables does that market demand? Which of those vegetables can you grow successfully? What is your back-up plan if the growing season is less-than-stellar? These and many other questions need to be thoroughly considered before any soil is turned or seeds are planted. Spending this time on the front-end will save you significant energy and worry down the line.

The U.S. Environmental Protection Agency has created an excellent business-planning guide for new, urban farmers. www.epa.gov/brownfields/urbanag/pdf/urban_farm_business_plan.pdf

Conclusion and Acknowledgements

It is our sincere hope that this manual has been, and will remain, a useful guide for current and future urban farmers and gardeners. There are many problems with our current food system

and one way we can start to turn the system in a more sustainable, and pleasurable, direction is for individuals and groups to take a primary role in growing some of their own food. This could be in a yard, in a community garden or on an urban farm. As mentioned in the manual, possibilities in urban growing are often only limited by the imaginations of the future farmer or grower. We hope many people will take seriously the many possibilities that exist in and around Indianapolis.

This manual was researched and written throughout the 2012 growing season and though it captures a “moment in time” we hope the general lessons and information throughout the manual remain applicable for many years. We urge all future urban growers to continue to research as much as they can on growing healthy soil and interacting with as many other growers as possible in order to share information and lessons learned.

This manual was made possible by the United States Department of Agriculture Specialty Crop Block Grant Program and we thank Amy Etizinger-Ott from the Indiana State Department of Agriculture for her help with this grant. We owe a sincere thanks to other urban farms in Indianapolis that provided support and advice on this project including South Circle Farm, the Butler University Farm and Growing Places Indy. We also owe a debt of gratitude to urban farms throughout the country that allowed us to visit their operations giving us an invaluable opportunity for comparison while writing this manual. These include the University of British Columbia Campus Farm (Vancouver), Added Value Farm, Eagle Creek Rooftop Farm, East New York Farms!, BK Farmyards, Queens County Museum Farm (New York), The Food Project (Boston), Urban Growth (Cleveland), City Farm (Chicago), Alemany Farm (San Francisco), Hayes Valley Farm (San Francisco), the Intervale Center (Burlington, Vermont), Wealth Underground, 47th Avenue Farm, Zenger Farm, Slow Hand Farm, and the Beginning Urban Farmer Apprenticeship program of Multnomah County (Portland, OR).

Last but not least, we thank our CSA members and restaurant customers who worked with us patiently throughout the 2012 as we expanded the scope of Big City Farms to include an apprenticeship program and the writing of this manual. We hope your trust and investment in us will continue to result in beautiful, fresh vegetables for years to come.

Appendix A – List of Farms and Gardens in Indianapolis as of November 2011

Compiled by April Hammerand (Food Coalition of Central Indiana) Community Gardens	Garden Address
Service Center Neighborhood Garden	3919 Lafayette Rd. Indianapolis IN 46254
We Care Community Garden	2529 West Jackson St. Indianapolis, IN 46222
Hawthorne Community Garden at the Hawthorne Community Center	2440 West Ohio Street, Indianapolis, IN 46222
Haughville Community Garden	922 N Sheffield Ave. Indianapolis, IN 46222
Stringtown Community Garden	1710 W New York St. Indianapolis, IN 46222
Riviera Community Garden at The Riviera Club	5640 North Illinois Street, Indianapolis, IN 46208
Cottage Home Neighborhood Community Garden	714 N Highland Ave. Indianapolis, IN 46202
Broadway Community Garden	3415 Broadway St. Indianapolis, IN 46205
Shared Farming Plots at the Butler Campus Farm	4600 Sunset Blvd. Indianapolis 46208
DIGS IUPUI garden at the Center for Young Children	321 Limestone St. Indianapolis, IN 46202

Shared Garden Space at DIGS (Developing IUPUI Gardens Sustainably)	402 Blackford St., Indianapolis, IN
Arsenal Avenue EcoCenter	110 N Arsenal Ave. Indianapolis, IN 46201
Community Garden on Temple	19 N Temple Ave. Indianapolis, IN 46201
Community Garden on Park	2900 N Park Ave. Indianapolis, IN 46205
Shared Garden Space at the Felege Hiywot Center	1648 Sheldon Street, Indianapolis, IN 46218
Chow Chow Community Garden	3339 N Capitol Ave. Indianapolis, IN 46208
Christian Park Community Garden of Christian Park Active Community, Inc.	4900 Farrington Ave. Indianapolis, IN 46201
New Hope Community Garden at ___Zacchaeus' Tree Congregation	7019 S. Arlington Ave. Indianapolis, IN 46237
Living Well Community Garden	2415 N Rural St. Indianapolis, IN 46218
Children's Urban Garden at Garfield Park Conservatory	2505 Conservatory Drive, Indianapolis, IN 46203
Mayor's Garden Plots at Tibbs Ave. (Salvation Army Harbor Light Center)	2400 N Tibbs Ave. Indianapolis, IN 46222
Eagle Creek Park Gardens (John Geisse Soccer Complex)	5425 Reed Rd. Indianapolis, IN 46254
Seeds of Hope Community Garden	2870 N Olney St. Indianapolis, IN 46218
Fall Creek Gardens (north of Unleavened Bread Cafe)	3001 Central Avenue, Indianapolis, IN
Urban Mountain Farm Gardens with KI EcoCenter	955 W 36th St. Indianapolis, IN 46208
South Circle Farm at the Concord CDC - Community Garden Plots	2048 S. Meridian St. Indianapolis, IN 46225
Burkhart Community Garden in Rocky Ripple Neighborhood	840 W 53rd St. Indianapolis, IN 46208
The Project School Community Garden	1145 E. 22nd St. Indianapolis, Indiana 46202
Paramount School of Excellence Community Garden	3020 Nowland Ave. Indianapolis, IN 46201
Englewood Community Garden	57 N Rural St. Indianapolis, IN 46201
Emmerich Manual High School Gardens with Global Peace Initiatives	2405 Madison Avenue, Indianapolis, IN
Calvary Lutheran Community Garden	6200 Orinoco Ave. Indianapolis, IN 46227
Pot O'Gold Community Garden at Washington Park North Cemetery	2702 Kessler Boulevard West Dr., Indianapolis, IN
Green Broad Ripple	61st Street between Winthrop and Guilford,
Green Acres Urban Farm	1702 S Delaware St, Salsa garden
1315 S Charles, Strawberry and pumpkin	
Green Acres Urban Farm	1355 S Meridian general vegetable garden
Sprout Urban Farm	1156 Fletcher Avenue
Northsquare Community Garden	1033 Hosbrook
IPS #114	Raymond & Sloan
Shepard Community Garden	4107 e. Washington
Community Peace Garden	1129 S. Tremont
Friends and FACT Community Garden	Fletcher & I65

St. Peter Community Garden	1443 St. Peter
Fletcher Place Community Garden	Fletcher & College
Bradley Crime Watch Garden	29 S. Bradley
IPS #31 Pumpkin Patch	Lincoln and Alabama
Sumner's Garden	649 Holly Ave
Horse Shoe Harvest	206 N. Keystone Ave
IPS 27 Garden	545 E. 19th St.
Peaceful Grounds Cafe and Farm Market	167 Van Dyke Street; Southport, Indiana 46227
R-Bistro-- Slow Food Restaurant Garden	888 Massachusetts Ave. Indianapolis, IN 46202
Goose the Market --Slow Food Restaurant Garden	2503 North Delaware St. Indianapolis, IN 46205
Earth House Community Garden	237 North East Street, Indianapolis, IN 46202
Miracle Place - Pocket Park	940 West Temple (10th & Rural)

PROJECT TITLE: INDY WINTERS FARMERS' MARKET VOUCHER PROGRAM

PROJECT SUMMARY

The Indy Winters Farmers' Market (here and after referred to as IWFM) partnered with Wishard Health Services for the distribution of a program called the Veggie Bucks Vouchers. This program got fresh fruit and vegetables into the household of the Indianapolis neighborhoods. Based on the success of this program, we are building a budget to include vouchers to different farmers markets, more community partners, and more eligible products. We will evaluate and expand the program in the future if more funding becomes available.

PROJECT APPROACH

The Indy Winter Farmers' Market partnered with Wishard Health Services (Wishard is a public hospital in Indianapolis that targets the vulnerable populations of Marion County. The Wishard network consists of 7 neighborhood community health centers as well as a Primary Care Center. IWFM chose to partner with Wishard and its dietitians and wellness coaches, who serve at the Primary Care Center and all community health centers, for the distribution of the Veggie Bucks vouchers due to successful collaborative efforts with the hospital in the past:

IWFM worked with Wishard dietitians and wellness coaches, and Big City Farms in helping establish a Summer 2011 CSA distribution at a Wishard Community Health Center to encourage patients in a wellness-coaching program to eat more locally grown vegetables. This program is an additional way to support our overall initiative of getting others to eat more fruits and vegetables.

Partnering with Wishard for the distribution of the Veggie Bucks vouchers presented an opportunity to continue providing its patients with access to local fruits and vegetables in an effort to encourage increased consumption of fresh produce as part of a normal diet.

Our staff works at the IWFM and we are aware of the exchange of the Veggie Bucks for produce and only produce. We only promoted specialty crops with our grant funding. There were 100 packets that were given out in the IWFM Eat Well Initiative through the wellness coaches at the neighborhood clinics. There were other packets put out through the following partners: The Project School, The Chase Near Eastside Legacy Center, Indianapolis Senior Center, and the Indy YMCA. This accounted for roughly \$3,000 Veggie Bucks that exceeded the original amount but our partner organizations contributed to the cost of the program. We did not hire a secret shopper per say but did monitor by observation and interaction of the vendors and the consumers.

GOALS AND OUTCOMES ACHIEVED

The USDA SCBG helped us leverage additional support. Wishard agreed to participate in the IWFM Eat Well Initiative, which enabled the IWFM to begin accepting EBT in addition to piloting the Veggie Bucks voucher program. This EBT program was only established as a result of this grant and is completely separate from this grant project; and no SCBG funds were used toward this nor are their funds earned from this. The addition of EBT is mentioned here to showcase another way to enhance the consumption and reach of offering access to local grown fruits and vegetables.

This program was intended to increase access to good food in the Indianapolis community, especially for those who are underserved and most vulnerable to food scarcity. Another goal of the program was to increase sales for our vendors and to make the good food they provide available to more folks in Indianapolis.

The program was called Veggie Bucks and these green vouchers were distributed through community partners including Wishard Health, Nutrition and Dietary Services, The Project School, The Chase Near Eastside Legacy Center, Indianapolis Senior Center, and the Indy YMCA. Each voucher recipient received up to \$30 to purchase Indiana-grown crops, such as fruits, vegetables, produce, greens, herbs, grains, honey and maple syrup. Vendors who accepted Veggie Bucks displayed a green sign at their booth. Then, customers brought their vouchers to market and spent them like cash at vendors' booths. Over the course of the season, we had over \$3700 spent at the IWFM in Veggie Bucks!

The Veggie Bucks that our partners contributed plus the Veggie Bucks for the wellness coaches equaled \$7,300 in redeemed vouchers over the course of six months. Thus there was more than a \$6,000 sales increase in specialty crops.

23 IWFM vendors able to accept vouchers, each displaying a sign reading "Veggie Bucks Accepted Here" (see a picture under additional information).

Our vendors who were willing to spend time with the consumer to answer questions about how to prepare the produce and how to store the produce saw the most sales. A big challenge is to have vendors share their sales information but we were able to question the vendors about the acceptance of the bucks and any additional effort they had to put forth to accept the bucks. 20 of the 23 vendors thought the bucks program actually brought new customers to their booth. The other three while believed the bucks encouraged new customers they questioned if without the bucks the customers would come back to the booth – was a habit or appreciation for fresh produce was really generated. This is a fair question. The follow up conversations with the wellness coaches and their clients is that the clients believe they saw an improvement in the way they felt and acted. Survey's suggested that consumers would consider buying fresh products now that they knew how to prepare them and afforded them and not waste them.

BENEFICIARIES

The clients of Wishard dietitians and wellness coaches are generally individuals who are both low-income and seeking to improve their health, and they are able to identify those individuals to receive the Veggie Bucks vouchers.

We had over 120 Veggie Bucks redeemed from low income participants.

Concord CDC plans to continue a Veggie Bucks voucher program at the summer farmers market that operates in the neighborhood.

We had 23 vendors who grew increased awareness and drew in additional customers because of accepting the bucks.

LESSONS LEARNED

The cost of printing the veggie bucks was an expensive upfront cost that delayed the start of the program but it worked out just fine. The best unexpected outcome was that other entities such as the Concord CDC wanted to become a part of the program to encourage residents in their neighborhood to purchase fresh locally grown produce. See their flier that they made for their market in additional information.

CONTACT PERSON

Stevi Stoesz

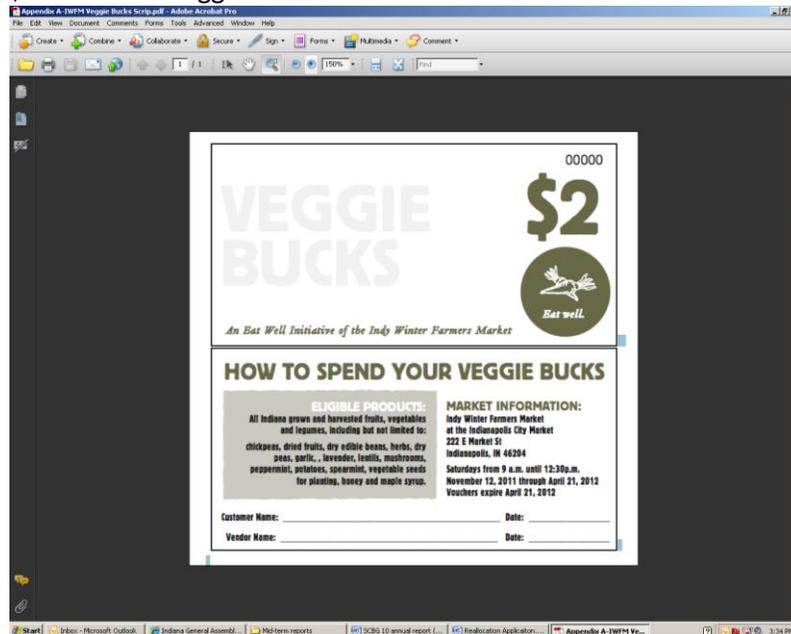
stevis@indycom.com

Phone Number: 317.634.9266

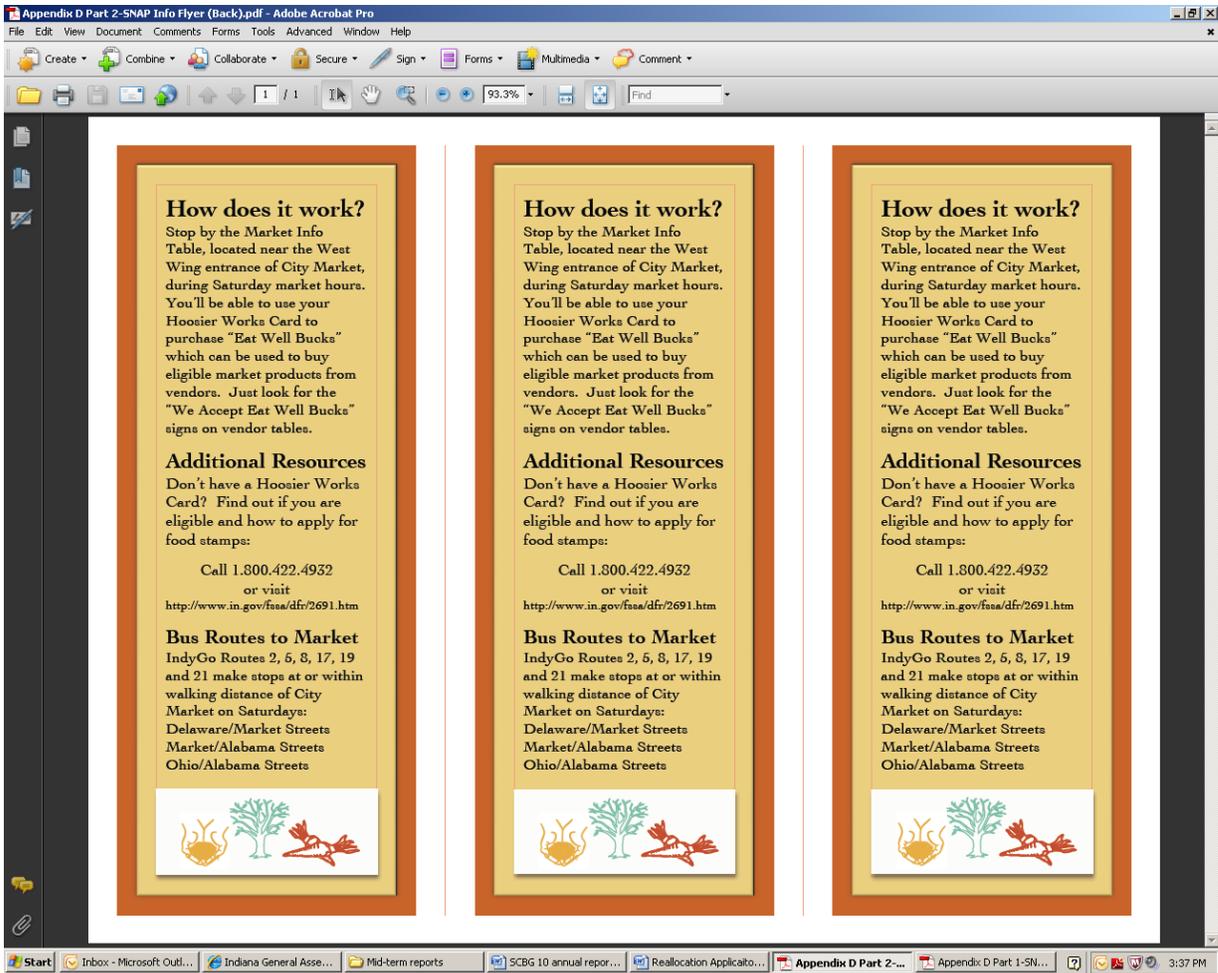
ADDITIONAL INFORMATION

IWFM has developed, designed and printed the first half of the vouchers and accompanying materials into 100 packets. These packets were given to Wishard dietitians and wellness coaches, who are in the process of distributing them to their patients. Only specialty crops were used in this program. Each packet contained the following items:

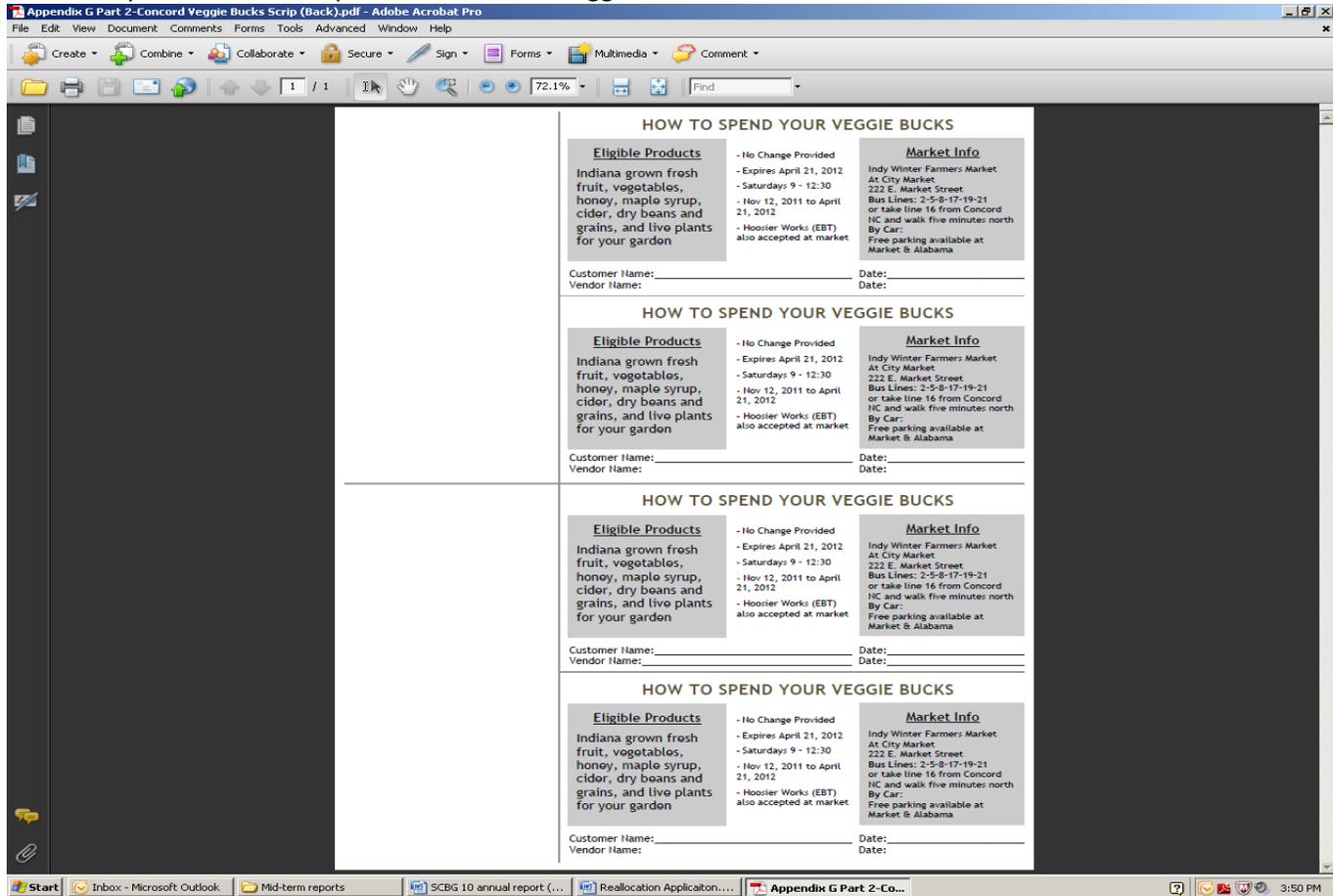
- \$30 worth of veggie vouchers



- Patient Welcome Letter detailing the guidelines of using the veggie vouchers



The IWFM has attended numerous neighborhood meetings and met with many community organizations to promote the program. This voucher program is replicable for other markets, and as such, attracts additional funding sources to increase voucher distribution. As a direct result of the ISDA Specialty Crop Block Grant, IWFM has partnered with Concord Community Development Corporation (CDC). Concord CDC is an organization devoted to improving the Concord neighborhood, located on the south side of Indianapolis. Through this partnership, Concord CDC provided the funding for an additional \$1000 worth of Veggie Bucks to be distributed through a Concord neighborhood community center. An example of the Concord Veggie Bucks voucher





PROJECT TITLE: BIG CITY FARMS URBAN FARMER APPRENTICESHIP PROGRAM

PROJECT SUMMARY

The Summer Apprenticeship Program is our flagship educational initiative designed for any individual who can fully commit to the 10-week summer program (late May - early August) at approximately 25 hours per week. The program is intended to immerse participants in “real-life” training and activities related to the Growing Places Indy mission to empower individuals and communities to Grow well, Eat well, Live well and Be well. Participants learn the principles of operating a small urban farm, explore the challenges and opportunities to improve access to fresh, healthy foods in the Indianapolis area, lead educational experiences for youth and other community members and investigate whether/how community-based food systems support community development.

PROJECT APPROACH

There were a total of nine applicants for the two apprenticeship positions, all of whom were well-qualified and possessed a genuine interest in learning more about growing vegetables in an urban environment and, in so doing, contributing to the vibrancy of the Indianapolis food system. This response impressed us a great deal, largely because of the fact that the application period had to be significantly reduced in order to allow for an entire growing season to be experienced by the selected apprentices.

GOALS AND OUTCOMES ACHIEVED

The customer surveys that were distributed amongst Big City Farms CSA shareholders proved to be an inadequate method of measuring the training success of the Big City Farms Apprenticeship Program. Nearly all of the surveys were uniformly positive and, as such, it was difficult to determine what measurable changes and/or improvements might have taken place. A more concrete way of measuring the impact of the Apprenticeship Program is to examine the ways in which this infusion of labor enabled Big City Farms to better meet the increasing demand, from individuals and restaurants alike, for locally-produced specialty crops. Big City Farms' 2010 CSA sales were \$27,000 - consisting of 20 large shares and 40 small shares. The farm's 2010 restaurant sales for 2010 were \$5,328. Each of these numbers increased dramatically during the 2011 season, which saw the implementation of the Apprenticeship Program. The CSA sales went up to \$36,905 - consisting of 25 large shares and 50 small shares. The restaurant sales increased to \$10,631.50. This represents an increase of more than 30% in CSA sales, and more than 100% in restaurant sales. The Apprenticeship Program was only able to last for one growing season, but these sales numbers indicate the room for growth that exists within the Indianapolis marketplace for specialty crops. They are certainly encouraging of the ways in which existing farms can expand current operations, and how new farms might gain a foothold.

In regards to the general public's awareness of urban farming efforts, Big City Farms was unable to adequately measure whatever growth might have occurred over the years (and this grant did not provide for such surveying). There have certainly been positive developments in Indianapolis in this regard, however. These can be witnessed in the fact that: the City of Indianapolis continues to promote its Urban Garden Program as a way to utilize vacant lots for food production; the Parks Foundation and IU Health have partnered to create a multi-acre farm

for the purposes of growing vegetables for local food pantries; the Butler Campus Farm continues to expand its footprint and is becoming a more permanent fixture on that campus; and several community gardening efforts (in particular, Fall Creek Gardens and Felege Hiywot) have increased the number of programs they offer to the public. These are the types of tangible programs that would encourage a positive public perception of urban farming. Unfortunately, there has been little effort to engage in city-wide research to determine exactly how non-customer citizens are directly- and indirectly-impacted by these efforts. I am hopeful that educational institutions (such as Purdue University or Indiana University-Purdue University of Indianapolis) might undertake such a significant effort, as it would provide a much-needed benchmark by which to measure future advancements in the field of urban agriculture.

Performance surveys used to Measure the skill set of each apprentice: The apprentices joined Big City Farms in early June and were quickly involved in the day-to-day processes related to operating an urban farm. They participated in the seeding and planting of a wide range of vegetables, learning about the relative merits and logistics of starting seeds indoors during the early spring so as to maximize the length of the growing season and direct-seeding later plantings. The apprentices were also heavily involved in the daily maintenance of the growing plots – cultivating newly-seeded beds, pruning select crops, and harvesting mature vegetables for the 50-member community supported agriculture (CSA) program that Big City Farms runs, as well as for the diverse orders that restaurant customers placed on a weekly basis.

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Apprentices managing CSA Pickups: This high level of participation was intended to expose the apprentices to the various techniques and skills that are needed to successfully grow fresh vegetables for a committed and discerning public. In addition to this ample field experience, the apprentices learned about marketing efforts that small-scale farmers can pursue in order to successfully sell and distribute their produce. This involved regular communication with CSA members, including the description of the contents of weekly harvest boxes and notable culinary uses. Through the restaurant sales, the apprentices were afforded an opportunity to learn about the local demand for particular vegetables, how those demands can change over the course of a growing season, and ways in which a farmer can maximize his/her adaptability to ever-changing markets.

Site Visit Reports: In addition to operating the apprenticeship program, we have been able to conduct site visits to various farm projects around the country. These visits helped inform the training program being developed by Big City Farms, and will allow the farm to continue to refine its programming and maximize its impact.

Apprentices' monthly reviews: Each apprentice submits a monthly review which explains job activities, planting and harvesting methods, marketing efforts, changes they suggest over the course of the growing season and ways they could implement what they have learned on their own farming operations.

We discovered through working with our restaurants and customers at our market that the awareness of urban farming is growing. People see empty lots and open spaces as new opportunities to grow fresh produce that can be harvested and walked to the market place which is a very environmental friendly thing to do. We learned that the customer assessment or "opinion" about urban is changing and improving. We easily reached our target goal of seeing our buyers whether from the wholesale side or the retail side as seeing the growth and the value in encouraging urban farms. We sold all of our urban farm produce in these markets and it will only continue to grow in demand as customers see their purchases are making a positive impact in urban areas.

BENEFICIARIES

Please see current list of our participants under additional information. Many people would ask the question "how many specialty crop stakeholders benefited from the project." We would answer how do you define a stakeholder in specialty crops?" First as a business and the owner of the project we benefited so that number accounts to roughly 22 people. Our participants benefited and we captured some of the testimonies under additional information, they all were engaged in the fresh production. The markets that our participants sold into (four) and those

consumer all benefited from the project, that could equate to over 300 hundred people each event during the summer.

LESSONS LEARNED

The skill set needed to run a successful farm is significant and far-ranging, and the development of successful food systems demand the inclusion of individuals who might not be able to sacrifice their current jobs for the promise of future farm-related employment opportunities. This is an issue that is best addressed through a system-wide approach, involving a wide range of stakeholders (local extension services, regional farms, small business training programs) that can combine their particular strengths in order to meet the needs of individuals who are genuinely interested in playing key roles in local food systems, yet lack the financial or community support network to do so at a full-time level.

The other lesson that was experienced was related to the balancing act required to operate an informative training program while also running a functioning farm. Oftentimes, it seemed like the two goals of education and food productions were in competition with one another, and the success of one would necessarily come at the expense of the other. We worked to address this problem as best as we could over the course of the growing season, oftentimes putting faith in the fact that significant knowledge that can be gleaned from simple, practical experience.

CONTACT PERSON

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ADDITIONAL INFORMATION



- [Who We Are](#)
 - [Our Team](#)
 - [Our Sponsors](#)
 - [Our Partners](#)
- [What We Do](#)
 - [Urban Farming](#)
 - [Apprenticeship Program](#)
 - [Yoga & Wellness](#)
 - [Indy Winter Farmers Market](#)
- [Get Involved](#)
 - [Volunteer](#)
 - [CSA](#)
- [Gallery](#)
- [Donate](#)
- [Contact](#)

Grow Well · Eat Well · Live Well · Be Well™

APPRENTICESHIP PROGRAM

The [2013 Growing Places Indy Apprenticeship Application](#) is now available. Please complete and return by the March 15, 2013.

Description
The Summer Apprenticeship Program is our flagship educational initiative designed for any individual who can fully commit to the program (late May - early August) at approximately 25 hours per week. The program is intended to immerse participants in “hands-on” experiences related to the Growing Places Indy mission to empower individuals and communities to Grow well, Eat well, Live well and Be well. Participants will learn the principles of operating a small urban farm, explore the challenges and opportunities to improve access to fresh, healthy food, gain valuable educational experiences for youth and other community members and investigate whether/how community-based food systems can contribute to community development.

The [application](#) is available starting in February and the deadline is March 15. After an initial application review, candidates will be interviewed by April 1 and all applicants will be alerted of a final decision by April 15. Typically, eight apprentices participate in the program. For detailed information about the Apprenticeship Program, please open the following document to view the [2012 Summer Schedule](#).

See this diagram of the [2012 Apprenticeship Program At-A-Glance](#).

[Apprentice Alumni Testimonials](#)



Sara Swan (2010)

"I can, in all honesty and in all cheesiness, say that Growing Places Indy and the people behind it changed my life. I came out of the program with a desire to do something with social and environmental justice and a love of cooking and food, and GPI sparked my consciousness about how these things ties together all of these things. The vision of a mutually-supportive, self-sufficient, and socially-conscious community that GPI has since led me to create a major in Sustainable Food Security at Indiana University, to work on farms in Bloomington and Quebec, to volunteer with the Bloomington Food Policy Council and with the IU Food Working Group, and to intern with Mother Earth News program. In all of these experiences, I feel so thankful to Laura and Tyler and the other apprentices for introducing me to a new way of life. Thank goodness, you can always find a good meal."



Jenn Burns (2010 and 2011)

"I chose to be a part of Growing Places Indy because it was an opportunity to pursue my passion of food in a purposeful way. I didn't think I could have a meaningful career in food. But, thanks to Growing Places Indy, I was exposed to a world of possibilities in public policy, hunger relief, community building, youth empowerment, the restaurant world, and specialty product sales. Even given the support to take the road less traveled and make my dreams a reality. In addition to helping me realize my future career, I appreciated my time with GPI for its diversity of experience, introduction and assimilation into the local food scene, and the support of Tyler and Tyler Henderson have been mentors and wonderful friends to this day. I will forever be indebted to Growing Places Indy for their perpetual support."



Jayne Glick (2011)

"Majoring in Visual Communication Design at Herron School of Art (IUPUI), I decided I needed a break from the computer screen and was doing a school project with a new community garden (Growing Near West), and was starting to become more interested in urban agriculture, so this seemed like a perfect summer opportunity. My experience at Growing Places Indy didn't just teach me about urban agriculture (I have definitely become more educated and passionate in both areas). This experience taught me that you can combine your professional and personal life is more fulfilling! After that summer I've had the privilege to be an IUPUI Community Partner Scholar for Growing Near West, a guide for IUPUI's Center for Urban Health, and got to help GPI with a few small design jobs. Also, I loved the people and my friends. It was not only an internship—it's a support system!"



Andy Cochran (2011)

"I was miserable at my job and wanted something more from my life, and to follow my passions. Laura and Tyler were generous and offered me an apprenticeship position. I instantly took that opportunity and quit my job the following week. Through that process, I have had the chance to work with amazing people, and do some amazing things with the help of others. I am now fortunate enough to make my living as a salesperson at catering at The Smoking Goose; and I am also now the owner of Circle City Rain Barrels. Tyler and Laura were kind enough to help me start my own, and then passed down the business to me. These are some of the amazing things that have filled my life after my time at GPI. Through my apprenticeship, I enjoyed getting back to the earth and learning as much as I could about sustainable agriculture. Another positive aspect of GPI, is the dedication not only to food and body, but to the mind and spirit. I so enjoyed our daily yoga and meditation exercises. It was a very special time of hard work and dedication brought about by following my passions in life. GPI created a place where I was loved about life, and also gave the support needed to make a what was a very scary jump in my life, end in a very life changing journey and progression continues to this day."



Audrey Brinkers (2010 and 2011)

"I've always had an interest in plants, and I've always had an interest in people. However, prior to my apprenticeship at Growing Places Indy, there was a disconnect between the two. It wasn't until my work with Tyler and Laura that I learned that the cultivation of soil and community can be simultaneous and collaborative. Through the planting, tending, and harvesting of our beloved produce, apprentices learned about the beauty of growing through lunches, conversations, and even yoga with others, apprentices could see the expression of this beauty in the development of our local food cultures. This knowledge and inspiration has led me to the passions I now find most deeply rooted within myself, and I attribute, without hyperbole, to my long-term goals and hopes for the future. I have not simply learned about growing plants and involving others, but I have gained the confidence to teach others about the significance of growing well, eating well, living well, and being well."



Tracy Cork (2012)

"My apprenticeship with Growing Places Indy was awesome. I enjoyed so many aspects of the program but the two that stood out were tending the veggies and practicing yoga. Our workdays were Tuesdays, Wednesdays, and Thursdays. The work mornings were harvesting, tending the beds, CSA, and veggie stand. What made harvesting fun was we always played some type of game so it really did not feel like work. I tended the beds by weeding, clearing and planting new veggies or cover crops. I learned so much about tending veggies that I have started at Mary's Community Garden (Center of Wellness for Urban Women) and plan to grow some veggies this year on my patio. Yoga was always wanted to practice yoga in a classroom setting and what a better classroom than outside. The Earth beneath and the air around me were connected to God and creation. Mondays were Yoga and Self Exploration. These sessions were so profound and intense but they were also so relaxing and recharged. I now practice yoga as often as times permits. What a great experience!!!"



Sarah Robinson (2012)

“I applied to participate in the Growing Places Indy summer apprenticeship because I wanted to really understand how my food grows and to be a part of the complete life cycle of my food—from seed to fruit to waste to soil and back again. I hoped that this program would help me become a bigger part of the Indianapolis food community and learn how to share my passion for food with others in my city. This program would help me do all of these things and so much more. I learned the basics of how to run an urban farm and was able to connect with inspiring people who would help me make our local food community stronger. Most importantly, I learned how my actions affect my environment and community and how I can contribute to the creation of a sustainable community. It all starts with me. Working to create a sustainable self is the first step to creating a sustainable community and environment. The Growing Places Indy summer apprenticeship is a transformative and holistic experience that touches the body, mind, and soul of each participant.”



Muriel Cross (2012)

“As soon as I finished interviewing for the 2012 summer apprentice position with Laura and Tyler, I called my dad. I told him I was going to the program not only because the program aligned with my interests, but because I had no other options for the summer. Kind of like I was looking for a job. However, Tyler reassured my choice to take a break after graduation and turns out it was a great one. This program was filled with hard work, fresh / local food, biking, meeting Indianapolis community influencers, yoga, direction and motivation. My favorite part was to know my fellow summer apprentices while biking to and from GPI, including that one time we got caught in the rain... the weather was perfect where we would set our intentions for the day... the busy harvest times when Tyler would always freak out about getting it done... and the silly times where we somersaulted in the grass or "shook it out" in the garden. I could not have asked for a more inspiring and welcoming experience. Wellness and sustainability are important to me and my food and lifestyle choices will always be influenced by my time with Growing Places Indy.”



Megan Mirro (2012)

“Having moved to Indianapolis to pursue a graduate degree, I believed the Growing Places Indy apprenticeship would be a great grassroots activity occurring in the city. The positive connections formed between apprentices and the community were beyond my expectations.”

the most surprising was the improvement in the relationship with myself that occurred over the summer. It was incredible I could feel when I had direct control over my food, transportation and wellness. Laura and Tyler daily demonstrations make our world more fulfilling and sustainable when we begin with ourselves. Since the summer, I have worked to continue by continuing to ride my bike, shop local, participate in community events and stay informed about food policy decisions. Before my apprenticeship I was rather blind to the vital role that yoga and the yamas played in my wellbeing. Now that I am about to partake in a yoga teacher training program in 2013. Thanks for showing me the way Growing Places Indy! I believe in the extraordinary insights from this apprenticeship and wish that everyone could have this type of experience at some point in their lives.



Kate Langdon (2012)

“Looking for a summer apprenticeship, nothing sounds so sweet as working outside, doing yoga, and eating fresh vegetables. However, the beauty of this experience is that all participants are interested in pursuing the Growing Places Indy Apprenticeship. Since spending summer 2012 in the program, I have started practicing yoga daily and volunteering at the Butler University garden. The program revolutionized my diet with ingredients I don't know how I ever lived without most notably kale, arugula, and pattypan squash. These vegetables are very dear to my heart and I still correspond with months later. I learned a lot about gardening but also a lot about nutrition and health. It was such a joy. I'd recommend it to anyone interested on working on their overall wellness and who's ready to have fun and learn. Ellen Mail (2011 Apprentice and 2012 Program Coordinator)

“The Growing Places Indy summer apprenticeship program was a catalytic experience for me. Its integrated design, education, self inquiry & exploration, and engagement with the Indianapolis community – cultivated many layers of knowledge and acquired knowledge about sustainable agriculture and community-based food systems. I developed an altogether new perspective on life with the Indianapolis community, a city that has always been home to me. Having the opportunity to learn and grow alongside the other participating individuals was what made the entire Growing Places Indy experience so special. This apprenticeship path. I am currently serving on a food policy council representing New London County, Connecticut through the American Farmland Trust. I have confidence that my long-term career will contain pieces that I have identified as centrally and crucially important because of this experience, including sustainability, community and holistic well-being.”

PROJECT TITLE: Bloomington Winters Farmers' Market

PROJECT SUMMARY

The Local Growers Guild sought SCB funds to expand its marketing, especially to promote eating locally in the winter. Educating consumers about the existence of the Bloomington Winter Farmers Market and the wide variety of both fresh and stored fruits and vegetables available increased demand and provided additional income for specialty crop producers. Increased awareness of local food also strengthen the Local Growers Guild by encouraging consumers, farmers, and retailers to join as members which in turn allowed the LGG to better support local farmers.

PROJECT APPROACH

The Local Growers Guild purchased and utilized marketing materials for the Bloomington Winter Farmers Market. The proposed marketing materials include promotional stickers, reusable vinyl banners, sandwich boards, yard signs, and a felt tri-fold display. These materials can be used year round to promote the Bloomington Winter Farmers Market, educate the public, and increase awareness about LGG membership. The primary focus will be at public events where the target market is concentrated, including the summer Bloomington Community Farmers' Market, food and farming conferences, and community gatherings. The Bloomington Winter

Farmers Market exists to extend the farmers market season and increase the availability of fresh produce and other local products throughout the four seasons of the year. The Winter Market is run by the Local Growers Guild, a cooperative of farmers, retailers and community members dedicated to strengthening the local food economy in Southern Indiana.

The Local Growers Guild seeks to encourage direct contact between producer and consumer and increase understanding of local food economy issues. And they strive to produce and provide the greatest possible varieties of local foods while working together in a cooperative atmosphere to ensure the success of the market.

There is a wide variety of produce available, including salad greens, spinach, broccoli and garlic. While the BWFM does allow for the sales and incorporation of other products that are not produce the grant funding was used to only support the marketing of the specialty crops. For example funding allocated with grant dollars for marketing materials was matched by an additional sixty percent for the purchases of marketing materials and booklets. The level of specialty crop participation was estimated at some markets being over sixty percent of vendor sales. The value of the grant dollars was clearly leveraged and most importantly no grant funding was spent on anything but specialty crops.

GOALS AND OUTCOMES ACHIEVED

Approximately 687 customers attended each market during the 2011 BWFM season (based on average customer counts). Customer surveys revealed that 30% of customers spent an average of \$20-\$29 each week, while an additional 25% spent an average of \$10-\$19. This is a significant increase compared to data collected in 2008, which can be attributed to an increase in awareness of the market combined with increase in the variety and quantity of fresh produce.

The marketing materials included promotional stickers(1,000), reusable vinyl banners (4), sandwich boards (4), yard signs (100), and a felt tri-fold display (1).

There were 250 copies of the Eating Local in Winter brochures. We handed out fliers at our summer markets to encourage consumers to continue to come to our winter market. We also worked with our local restaurants to give out the brochures, and we spoke at our community get to know your farmer events.

We did not reach our goal of adding 215 members to the guild but we did reach 62 participants through the winter market. The number of specialty crops of that number is 56 participants who raise specialty crops. We were just shy of averaging \$2,000 in sales income each week. We did see an increase in customers attending the market but it was not always consistent, it would vary from about 10 percent to 20 percent increase or even (if weather was bad) each week.

BENEFICIARIES

Approximately 10 of our producers shared with us that they gained year round cash flow. The consumers had the chance to buy local year round. We estimated an average crowd between 60 to 150 people at each event.

Customers had a selection of fresh produce every week to choose to purchase.

LESSONS LEARNED

Many people are concerned that a winter market will not work because there is nothing growing in Indiana in the winter and two consumers will not shop a winter market. We proved both of those concerns to be incorrect. We found that our market was well attended and our producers

were ready to experiment with cool crops and production. We know that education the public is very important: telling people the hours of the market, where the market is located and that local produce is available year round must be done over and over again. We believe it was the multi facet approach to communicating that got the word out about the market.

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ADDITIONAL INFORMATION

<http://indianapublicmedia.org/communityminute/winter-market/>



