

SPECIALTY CROP BLOCK GRANT PROGRAM – FARM BILL

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South Carolina Department of Agriculture Hugh E. Weathers, Commissioner

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FINAL REPORT

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Martin Eubanks, Assistant Commissioner

Consumer Services

Phone: 804/734-2210

Email: meubanks@scda.sc.gov

Amy Howard London, Marketing Specialist

Marketing Division

Phone: 803/734-2235

Email: alondon@scda.sc.gov

South Carolina Department of Agriculture

P. O. Box 11280

Columbia, SC 29211

Physical Address:

1200 Senate Street

5th Floor, Wade Hampton Building

Columbia, SC 29201

Phone: (803) 734-2210

Fax: (803) 734-2191

PROJECT ONE

Project Title: Development of peach varieties with superior qualities for enhanced production, increased consumption and a competitive advantage for the South Carolina peach in the global market

Project Partner: Clemson University, Dr. Ksenija Gasic

Project Summary

Despite the hundreds of existing peach varieties used for fresh market, there is a continuing need to develop new varieties as the requirements of consumers and industry change. To develop peach varieties suitable for SC and southeastern regions of the country we need better selection methods to identify parental stocks with desirable traits and genetic information about inheritance of fruit quality and other important characteristics to make development of improved varieties successful.

Consumption of fresh peach fruit is in decline due to poor fruit quality delivered to the consumers. Producers are forced to harvest less than optimally mature fruit to prevent fruit damage during packing and transportation. Immature fruit lacks eating quality. Conventional fruit-tree breeding is in need of a cost effective market discovery approach to enable genome-wide association mapping for variety development. Identification of markers linked to genes controlling fruit quality and nutritional content, could be used to enhance the success of fruit-tree breeding programs by providing a powerful tool for improving breeding efficiency. The purpose of this project was to enable more efficient parental and seedling selection for improved fruit quality and nutritional content in a conventional peach breeding program. The overall goal is to provide better quality and increased nutritional value in peaches produced and marketed in South Carolina, leading to tastier and healthier food choices for consumers and a marketing advantage for our growers.

Project Approach

Project activities were divided into two parts, phenotypic and genotypic data collection. Phenotypic data comprised of fruit quality (fruit firmness, size, weight, soluble solids and acidity) and phytonutritional (antioxidants, anthocyanins, flavonoids and total phenolics) content evaluations. Phenotypic data were collected on first class fruit from 16 peach varieties ('Blazeprince', 'Caroking', 'Carymac', 'Contender', 'Coronet-N', 'Fireprince', 'Flavorcrest', 'Flavorich', 'Harvester', 'Julyprince', 'O'Henry', 'Redglobe', 'Rubyprince', 'Springprince' and Summergold'), grown at Titan Farms, Ridge Spring, SC.

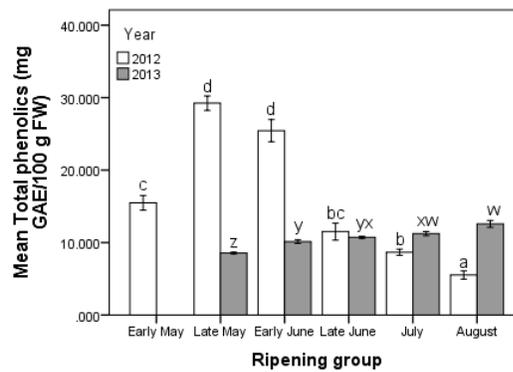
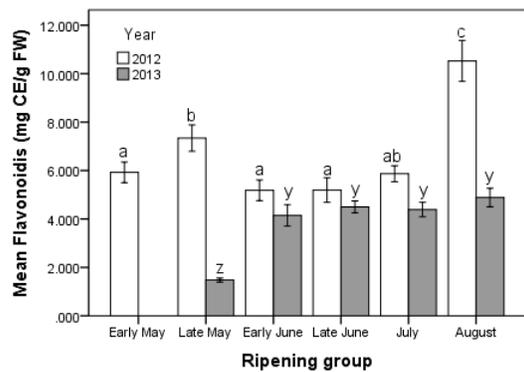
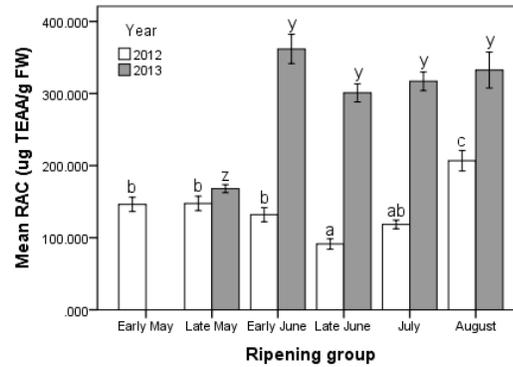
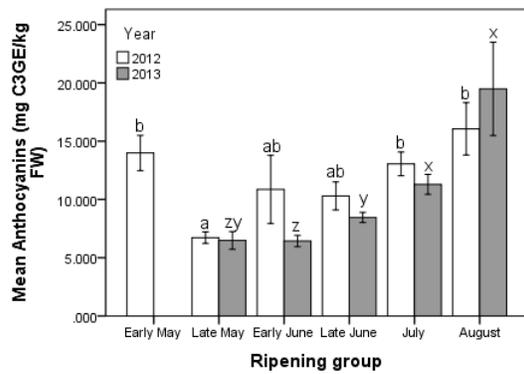
A box of first class fruit was randomly picked from the packing line, representing at least 2 different fields and 2 different harvest times for each variety during May-August in the 2012 and 2013 harvest seasons. In addition, fruit quality and phytochemical composition was evaluated for 527 accessions grown in a *Prunus sp.* Collection at Clemson University, and representing peach germplasm and important parents used in the peach breeding program. Fruit maturity at harvest was also measured for all fruit received from growers. Genotyping by sequencing was performed for 96 varieties, while genotyping

data for three SSR markers, endoPG, BPPCT015 and CPPCT040 that are associated with fruit stone-flesh adhesion, acidity and sweetness, respectively, have been collected from 500 accessions. Markers for predicting red skin coloration development have also been developed and hybrid seedlings were evaluated.

A survey of attendees, approximately 30 growers mainly from South Carolina and Georgia, regarding fruit quality and nutritional content of peach fruit was conducted at the Southeast Fruit and Vegetable Conference, Savannah, GA in conjunction with the USDA-NIFA-SCRI funded project RosBREED in January 2012. In Spring 2013, a list of important traits and their desired level in new peach varieties were discussed with major peach producers from SC and GA.

Specific results include:

- Fruit quality evaluation revealed significant differences among analyzed individuals for all fruit quality parameters. Fruit quality parameters were influenced by the environmental conditions, and/or applied horticultural practices in the year of evaluation.
- Fruit of heterogeneous maturity were harvested and packed, with maturity index (IAD) varying from <0.4 (eating ripe) to >1.0 (commercial harvest). Recommendation to growers is to harvest fruit with a maturity index between 0.8-1.0 to ensure good quality and resilience during the packing.
- Fruit firmness was positively correlated with maturity index, while soluble solids (SSC) and acidity (TA) showed no difference between fruit of different maturities. SSC/TA ratio, however, was negatively correlated with the fruit maturity index suggesting mature fruit taste better.
- Phytonutritional components in peach fruit were variety and year dependent. Higher values were observed in 2012 than 2013.
- Peach varieties produced and marketed in South Carolina are a good source of health promoting compounds such as antioxidants (80-300 μg Trolox/g FW), anthocyanins (8-20 mg C3GE/kg FW), flavonoids (4-13 mg CE/g FW) and total phenolics (10-40 mg GAE/100g FW).
- Highest nutritional content of all health promoting compounds was observed in 'Juneprince' and 'Flameprince'.
- Late ripening varieties accumulated more phytonutrients compared to early and mid-ripening varieties



- In 2013 due to spring frost and low yields, fruit from 3 early ripening varieties were not analyzed.
- It is necessary to continue the evaluation over more years to assess the variability of nutritional compounds and their correlation with other fruit quality traits.
- Pedigree analysis of the varieties grown and marketed in South Carolina reveal their close relationship.
- Genotyping results using SSR markers helped determine genetic background of advanced selections and parental varieties used in the peach breeding program. Results obtained will be used in selecting the right combination of parents to obtain the highest proportion of freestone, melting, high blush and sugar/acid ratio seedlings.
- Genotyping by sequencing generated >200K sequences for 73% (103) of the individuals genotyped. DNA extraction from some individuals hampered sequencing success, and we are in process of re-sequencing those individuals.

Project partners:

- *Gregory Reighard*: assisted in grower survey and provided advice in fruit quality data interpretation
- *Bradley Rauh*: instrumental in genotyping by sequencing
- *Asma Abdelghafar*: graduate student conducting fruit quality and phytochemical analyses

Goals and Outcomes Achieved

Goal of this project was two-fold: To evaluate peach varieties currently grown and marketed in South Carolina and those used in the peach breeding program, for fruit quality traits (size, weight, firmness, soluble solid concentration and titratable acidity) and phytonutrient content (antioxidant capacity, anthocyanins, flavonoids and total phenolics,). This project is aimed to increase competitiveness of the South Carolina peach industry by developing new and improved specialty crop varieties with better fruit quality and nutritional value.

Sixteen varieties grown and marketed in SC and 527 accessions maintained in a *Prunus sp.* collection at Clemson University, representing peach germplasm and important parents used in the peach breeding program, were phenotyped for fruit quality and phytonutritional content. A total of 11,655 fruit quality and 5,840 phytonutritional data points have been collected. Varieties and advanced selections with higher accumulation of nutritional compounds were observed and will be used in the breeding program. Information on fruit quality and nutritional properties of advanced selections and their suitability/adaptability to environmental conditions of the southeastern U.S. will provide additional information to our growers as to what varieties/selections to plant. In addition, phytonutritional information acquired on already grown varieties enable targeted marketing. Survey of ~30 growers from South Carolina and Georgia revealed the importance of incorporation of flavor in the newly developed peach varieties.

The long term goal of the project was to improve breeding efficiency for high quality peach varieties with enhanced phytonutritional composition by applying marker assisted selection with association genetics.

Collected fruit quality and phytonutritional data along with markers generated via genotyping by sequencing and data acquired with SSR markers provide a baseline for discovery and application of markers associated with fruit quality traits. Marker-assisted breeding will help reduce time and cost of delivering new and improved peach varieties, improve breeding efficiency, and ensure delivery of new peach varieties with improved fruit quality and nutritional value that in turn should increase competitiveness of the South Carolina peach industry in a global market.

Comparison of actual accomplishments with the goals established for reporting period:

Activity	Goals	Accomplishments
Phenotyping – fruit quality and nutritional	10 varieties grown in SC and 300 varieties and advanced selections	16 varieties grown in SC, 527 varieties and advanced selections
Genotyping by sequencing	96 individuals	Genotyped 133 individuals
Genotyping by markers	Analysis of 300 individuals with 2 markers	Analyzed 500 individuals with 4 markers
Grower survey	Growers representing 80% of peach acreage in South Carolina	Surveyed growers representing 80% of acreage in South Carolina and Georgia

The information gained from this project has been disseminated in the following ways:

- One presentation at the SE Regional Fruit and Vegetable Conference, Peach Educational session, in Savannah, GA, January 2013. Approximately 45 growers in attendance.
- One presentation at Peach Industry Meeting organized at Clemson University in April 2013. Seventeen growers representing 99% of peach growers in SC and GA in attendance.
- One presentation at Southern Professional Fruit Workers Conference in Athens, GA in September 2013. No growers in attendance, however county Extension agents from several states (SC, GA, TN, NJ, FL) were in attendance.
- In addition, poster presentation at International Society of Horticultural Science peach symposium – 140 attendees and oral presentation at Southeast Region – American Society of Horticultural Science, Orlando, FL – 100 attendees. Attendees to these meetings are not necessarily growers but they take this knowledge to growers.

Where growers were in attendance and surveyed, 20% of them reported an increase in knowledge regarding fruit quality and 100% regarding nutritional composition was observed.

Beneficiaries

South Carolina growers and consumers as well as the peach breeding program are the main beneficiaries. At least ten growers from SC and all growers that grow varieties that were part of the study were benefitted. This was the first time southern growers had nutritional information about the varieties they grow presented to them. This information will aid in marketing peaches produced in SC. Fruit quality and nutritional content data provide a valuable resource to the South Carolina peach industry in marketing their products to premium niche markets. It also provides additional facts to the consumers to help them in choosing healthy food that is pleasing to their senses and benefits their overall health. Concrete consumer benefit is not yet measurable. Overall benefit to consumers is through growers that have better knowledge about fruit quality and nutritional composition of the varieties they grow. In addition, knowing health properties of peach varieties grown in SC and how they compare to the other fruits available at the marketplace at the same time will give consumers options to make educated choices when buying fruit. In addition, improved efficiency of the peach breeding program will ensure faster and more cost efficient delivery of peach varieties with the desired combination of traits.

Lessons Learned

- The fruit sampling for phytonutritional analysis highly influenced the collected data. Variability observed between analyzed fruit within variety caused changes in sampling protocol. An improved protocol for sampling fruit flesh reduced sampling error and improved quality of the data. It also reduced the labor and cost associated with preparation of fruit samples for phytonutritional analyses.
- The non-destructive fruit maturity measurement and positive correlation between fruit maturity stage and fruit quality and phytonutritional content revealed that proper fruit

maturity is required for achieving better quality and higher accumulation of health related compounds.

Contact Person

- Ksenija Gasic
- 864-656-3664
- kgasic@clemons.edu

Additional Information

- Data acquired from this project were presented at Southeast Professional Fruit Workers Conference and at the Southeast Regional Fruit and Vegetable Conference.

A link to this information has not yet been made online. However, the studies are available from the Project Manager for anyone wishing to receive.

PROJECT TWO

Project Title: Nursery Industry Education and Promotion Project 2011

Project Partner: South Carolina Nursery and Landscape Association

Project Summary

Fall Field Day Event –

- There were 182 Participants in the Fall Field Day.
- 100 received the sponsored tee shirt for pre-registering early. The Certified SC Grown logo was imprinted on the front.
- 263 Pesticide Applicator License re-certification credits were earned.

Participants in the 2011 Fall Field Day enjoyed perfect weather, a delicious lunch, and 4 seminars (3 of which offered Pesticide Applicator License re-certification credits). The topics included environmental issues that face the industry and proper selection and planting techniques to increase survival of trees in the urban landscape.

Participants were a variety of growers and direct influencers/users of grower products (i.e. landscapers and garden center personnel). Not only did they have the benefit of the seminars they were also able to interact with each other during the breaks and lunch. The SC Department of Plant Industry and the South Carolina Exotic Pest Plant Council had exhibit tables where they answered questions.

SCHI Education –

- 425 Pesticide Applicator License re-certification credits were earned.
- 16 International Society of Arboriculture Continuing Education Units were earned.
- 370 total participants for the various seminars (Thursday concurrent session 186 + 18 grower/exhibitors who could attend because they were exhibitors at no additional charge, Spring Boot Camp - 61, Landscape Management Program -53, Roundtable Luncheon – 10, Ambrosia Beetle Workshop – 42). A note on the Roundtable Luncheon, while the attendance was low, those that attended really liked it. They suggested promoting it as a “networking” instead of a “roundtable discussion” luncheon. They felt strongly about not giving up on it after the first year.

The SCHI Education Committee met and developed a program of topics and speakers for the 2012 event. The range of topics offered included using social media to market your product and business, new plant varieties, environmental issues, pest and disease prevention and control, business issues, and design. This broad range of educational topics had something for everyone.

In the following weeks SCNLA Executive Director Donna Foster contacted possible speakers and confirmed the program. Once the program was complete the promotional pieces were developed. Foster provided all of the text and photos for the graphic artist to create the full color print materials (promotional postcards, free passes, brochure,

posters), all were developed on time and sent to the printer. We were able to get all of the information on 8 pages instead of 12 this year, which saved money. The first postcard mailing was on November 11, 2011, the 8-page brochure was mailed December 7, 2011, and the second postcard mailing was on December 29, 2011. Posters, free passes and conference brochures were mailed to growers/exhibitors so they could help promote the conference as they were requested during the month of December and January. SCNLA mailed the brochures and postcards out with “Address Service Requested” from the US Postal Service so that “bad” addresses (moved- no forwarding address, etc.) are returned to SCNLA then the mail file can be corrected. There were very few returns this year (about 1.5%).

On-line registration opened in early December. Registrations could also be mailed and faxed. In late December Foster sent each of the speakers a packet containing a copy of the program, a list of the audio/ visual equipment available, the speaker’s hotel room reservation, and a speaker reimbursement form to be completed after the seminar.

The speaker/topic evaluation form was updated. To encourage attendees to complete the forms and turn them in a drawing for \$50 would be made from the completed surveys that were turned in. In the weeks after the seminars the evaluations were tallied and will be used to plan other educational programs. (evaluation tally attached)

In the weeks following the conference, Foster thanked and reimbursed the speakers as they sent in their reimbursement information.

Website

The new SCNLA website was ran a little behind schedule because the web manager had to have unanticipated surgery but the website is up and running. The web manager now has a bank of photos to change on the home page seasonally. Copies of *The South Carolina Nurseryman* (the SCNLA bi monthly magazine) are now posted on the website for easy access and available to all. The list of SCNLA members who participate in the SC Department of Agriculture *SC Certified* program are listed on the website. The “counter” is checked the first of each month for number of hits. One problem is the new site started over with zero but we make note of the running total each month now. Comments have all been positive that the new website is more attractive and easier to use. New events are posted as information becomes available.

Grower Marketing Seminar

Only 13 participated in the Grower (“The Inner Secrets of Outrageous Marketing”) program. But those that did gave it high marks on the evaluations. The program ad ran in the SCNLA magazine in both the November/December 2011 issue and the January/ February 2012 issue, registration forms were included in over 200 SCNLA member dues notices and certificate packages mailed out in December and January, the form was faxed out to all members (344) with a fax number on February 13, 2012, it was emailed to all of those (321) with email addresses on February 13. Fliers were given out at the annual conference the first week of February and announced at the annual meeting during this conference, and at the SC Landscape and Turf Grass conference on January 25. I will say

that no one left early, which is always a good sign when your audience is a group of small business owners. “Small” being 5-40 employees. With this group there is little or no middle management so they have to deal with every problem that comes up therefore when they sit in a meeting all day and don’t leave early I have always considered it a successful event. The speaker covered often made mistakes on print marketing materials and social media use and design. He had a lot of interaction with the participants – asking what they thought of sample ads then he walked them through the good and bad points of the ads. He gave a step-by-step process for following through on projects. He really emphasized that you had to follow through and not just have good intentions to get results. (Evaluation tally attached)

NLAE Conference

Foster paid registration fees and made reservations for this conference in January 2012. Foster attended Nursery & Landscape Association Executives conference in San Antonio, TX, on May 3-5, 2013. Forty-four Nursery & Landscape Association managers from across the United States and Canada met to discuss issues that affect their members. The topics covered in the program:

Race for Relevance(based on the book by the same name). This book discusses how all associations must change with the needs of their members, technology and broader competition. There was an emphasis on Board restructuring to be more efficient and effective. I participated in the breakout session on *program evaluation*, where we discussed fears of trying new events, the acceptance that everything has a fixed life space and will not be relevant forever and we shared successful and not so successful programs. Later there were more breakout sessions. I attended the Association Planning and Non Dues Revenue sessions. The Association Planning was on improving strategic planning. We all do strategic planning to some degree so this was a discussion on “how to do it better” not “how to plan”. The Non Dues Revenue session was OK. We discussed ways to increase non-dues revenue like insurance programs, credit card processing (affinity programs) and advertising. We agreed that it is difficult to find programs that match the needs of a diverse membership group. I didn’t learn anything really good here except more information on website advertising. Many Associations seek grant funds. The national Canadian Association had a really good discount program for members with John Deere and General Motors. These large corporation programs may not work so well for state associations since the states almost always have a smaller number of members.

During the next round of break out sessions I attended Government Relations Collaborations and Trade Shows and Conference: are they still relevant. The Government Relations was very good. We discussed planning a leadership conference in the future. NLAE has sponsored these events in the past but when the economy got so bad it was cancelled. We all agreed that our officers really gained a lot of knowledge at these past events that helped them be better association leaders. We discussed the loss of our national legislative conference due to the bad economy but agreed the shorter, targeted “fly-ins” worked well. We all agreed that there are so many changing regulatory issues on the nursery industry that we need to participate and be a part of the process.

The best program of all was Dr. Charles Hall, Texas A&M University, *Hot Topics Affecting the Green Industry*. His program covered how the current recession had impacted our industry, consumer spending, forecasts for the next few years. Dr. Hall is a good speaker and makes a sometimes boring topic relevant and interesting.

Next was Governmental Relations Roundtable, this was really good too. This was a group of 4 of our member State Association Executive Directors, 3 of our national Association Executives and a representative from the Nature Conservancy. They discussed the particular issues in their areas and how they had dealt with water, invasive plants, and other regulatory issues. We were able to ask questions and interact with the panel.

Social Media & Technology

This discussion reviewed how we had used social media during this conference, what was useful for us and what was not, and how we might use social media in our association to provide information to our members and the rest of the industry. (We had used twitter to ask questions of each speaker throughout the conference.)

The time networking with other Association Directors is used to discuss various projects and their successes and failures. There are less than 50 of us in the country so the time together sharing with our peers is invaluable. It is the only time we are together.

Membership Directory

The text for SCNLA Membership Directory was prepared by Executive Director and sent to the graphic artist on April 6 for layout. Directories were printed and mailed to 421 SCNLA members on April 27, 2012. The remaining 179 copies were set aside to send new members in the coming year, give out at the NC Nursery & Landscape Association Summer Conference August 8-10, 2012, the TreeSC Conference in October 2012, the Annual Fall Field Day on September 26, 2012, for the SC Landscape & Turfgrass Conference in January 2013, and at the 2013 SCNLA Annual Conference & Trade Show, February 6-8, 2013. SCNLA members that belong the SC Department of Agriculture's SC Certified program were noted with the logo by their entry. The application for the SC Certified Program was also included to encourage others to join. Photos from SCNLA events held in the previous year were used on the front and back cover.

Project Approach

Fall Field Day Event

Our approach to the Fall Field Day is to offer quality educational programming along with Pesticide Applicator Re-certification credits to the broad field of nursery growers and nursery product users (Landscapers and garden centers) in a casual and convenient location. The Clemson University Research & Education Center offers both. The format of breaks between seminars and outside exhibits / demonstrations has proven to be a good fit for this audience. The tee shirt give away for the first 100 to register has worked! Not only does it help with registrations, some attendees actually have a collection of the shirts from various years. Ours is an industry of small and very small businesses – time and resources are very limited. Anything that can be used to entice them to register for

educational events and go ahead and add the event to their calendars is a good thing. The free tee shirt seems to really work for this event. By using the SC Certified logo on the tee shirts, we increased awareness of the program to both users of SC grown nursery products and also to growers who may want to participate in the program.

SCHI Education

Our approach to the 2012 SCHI Educational Program was to provide a wide variety of educational topics for the nursery industry and its “direct influencers” (landscape contractors and other installers, retail garden centers, etc.) at convenient times and with no increase in fees. We felt strongly about not increasing the registration fees for education because of the negative impact the poor economy has had on our industry. The seminar topics and speakers were made based on the input of the industry representatives on the committee, suggestions from the 2011 program and other events, and Clemson University (Nursery Industry) faculty. This time of year was also important because it is slow for the industry, therefore a convenient time to be away from work. Several speakers asked to stay 2 nights which we gladly accommodated because it makes them more accessible to attendees. Some people do not want to ask a question in a large audience but enjoy talking with speakers in a one-to-one situation. Several speakers also served as moderators. We really try to create an open friendly environment. Speakers that come in only for their time slot and then leave can’t contribute to this sharing environment.

Growers were invited to order free passes, promotional stickers, event brochures, and posters to help promote the event. This helps to reach a broader group of direct influencers to the conference. This year all 1,000 of the free passes were given out, 18 of the 20 posters were requested, 2,000 of the stickers were requested (the stickers are 2” oval stickers imprinted with the event name, date, website, location and contact phone number that growers can stick on their catalogs, outgoing envelopes, etc. to their buyers) and 800 brochures were requested by growers to help promote the conference. All of this is in addition to the brochures and postcards that SCNLA mails out.

Website

Our approach was to re-organize our website to be more user friendly, visually attractive and stylish. We want to be able to post more information on our web site to make it more accessible to more people in the industry and to attract younger members of the industry (younger people tend to use electronic methods to gain information than any other groups). We announced the website update at the SCNLA Annual Meeting on February 3 and included an “ad” about the new website in the March/April issue of our magazine.

Grower Marketing Seminar - The motivation behind the planning of this seminar was to provide a quality and motivational marketing program for the industry given the slow economy. It was planned for a slow time of the year and the price was very reasonable. Marketing seems to be the “weak link” for many in our industry. This seemed to be a wonderful opportunity for growers to upgrade their marketing skills and marketing plans.

NLAE Conference – Our approach to participation in the Nursery & Landscape Association Executive Conference is to attend the programs that best fit the needs of

SCNLA and its members. The opportunity to network with the Directors of other Nursery & Landscape Associations offers a rare opportunity to learn from others what to do and sometimes what NOT to do in managing our associations. While some of the associations are much larger than SCNLA and several are smaller each offers perspective and learning opportunities. And equally important networking builds relationships that last long after the conference is over. It is good to know you can call these other Directors to discuss issues and programming ideas.

Membership Directory – The approach to this directory was to provide an easy to use directory of our members (both growers and direct influencers) to promote buying and selling transactions between the two groups. The directories will be given away at upcoming events in the next 12 months, to new members and to potential purchasers of SC nursery products that call into the SCNLA office asking for a list of growers.

Outcomes and Goals Achieved

Fall Field Day Event – The Fall Field Day was a success by any measure. The attendance was good, the education was informative, and the entire day could be considered a networking opportunity. The prior planning made for a smooth running event.

182 Participants and 263 Pesticide Applicator License re-certification credits were earned at this event.

SCHI Education – The overall seminar program went very well. Again prior planning and efficient communications with the speakers made all of the programs run smoothly. The low turn out for the Roundtable Issues program was the only disappointment but as stated earlier those in attendance found it useful and fell strongly about “re-packaging” the concept and trying it again. We were so please with the “Breakfast with Ambrosia Beetle” program. Since it started at 6:45 am (we had never had a program this early before but it was the only open slot in the program) we thought if we had 20 attendees it would be a success. We had 42 participants and were thrilled!

425 Pesticide Applicator License re-certification credits were earned.

16 International Society of Arboriculture Continuing Education Units were earned.

370 total participants for the various seminars.

Website – The updated website is more user friendly (the old one was not laid out in convenient style) which makes SCNLA able to use it for more content – issues of our bi-monthly magazine are now posted in the “library” and made available for anyone to use as a resource, on-line registration will be encouraged for ease and convenience, and this is intangible but we (the Executive Director and the Board of Directors) are more excited about using it. The counter (number of visited to the site) will continue to be monitored monthly so that we can continue to evaluate and improve the site.

Grower Marketing Seminar - The participants were given good marketing concepts as well as specifics but most importantly they were reminded over and over not to just leave

with a legal pad full of notes but to put their ideas in to action. All of the attendees were interactive with the speaker. You would think that relevant topic + energetic speaker + low registration fee (included lunch) + slow time of year would = big attendance but it didn't. However, those that did attend participated in a quality event.

NLAE Conference - Foster gained information on multiple topics but the *Hot Topics Affecting the Green Industry* was most valuable because it gave a broad range of economic information that can be used in planning SCNLA events. Dr. Hall will be added to the list of possible speakers for the education committee to consider having speak at the SCNLA annual conference. The Nursery Associations from SC, Georgia and North Carolina agreed to meet in December 2012 to discuss common issues like water, invasive plants and Boxwood blight. Foster will discuss some of the *Race for Relevance* issues at the June 2012 SCNLA Board meeting and ask the Board of Directors to consider some of the changes recommended in the book for SCNLA. Several associations discussed their Specialty Crop Block Grants and how we can share and participate in multi-state projects that would save both time and money.

Membership Directory - 421 SCNLA 2013 Membership Directories were mailed to the SCNLA membership in late April. The directories included the *SC Certified* logo by the members that were in the program. The applications for the *SC Certified* program were included in the directory. Copies were set aside to take to various events in the coming year.

Beneficiaries

Fall Field Day Event – All those that earned Pesticide Applicators' Re-certification credits were the primary beneficiaries. These credits go toward renewal of their Pesticide Applicators' Re-certification License. All of the 182 attendees participated in seminars, which were relevant to people in the "green" industry. The attendees were a broad range of landscapers and retail (direct influencers) as well as growers from across the state of SC. Some were employees, others were company owners which made for a good mix. Not all were members of SCNLA or SCLTA.

SCHI Education – All those that earned Pesticide Applicators' Re-certification credits were beneficiaries. These credits go toward renewal of their Pesticide Applicators' Re-certification License. All of the topics were relevant to people in the "green" industry. The attendees are a broad range of landscapers and retail (direct influencers) as well as growers from across the state of SC. Some were employees, others were company owners which made for a good mix. This is important because they come from different perspectives, they may ask speakers different questions, thus hear answers with a new broader understanding. This was also a networking opportunity for growers and their customers to meet and talk.

Website – The new website is easier to maneuver so that helps industry folks find information on upcoming events and to register for them. We will now put more information on it so that our educational events will be accessible to more people in the industry. Industry professionals can register on line using paypal for our events, join the

association, view past issues of our magazine, and find the contact information for our members. So it's there for anyone who is interested.

The webpage visit counter has shown the following counts:

1/31/2012 305

3/1/2012 590

4/1/2012 977

5/2/2012 1,513

We will continue to monitor the monthly count of visits to our sight.

Grower Marketing Seminar - Attendees to this seminar benefited by learning how to better market their products and the importance of "follow through" and evaluation of their marketing efforts.

NLAE Conference – SCNLA Executive Director Foster gained knowledge on two specific topics at the NLAE conference: social media and reorganizing association management to be more relevant to its members and the industry. She will share these thoughts at the June 14, 2012 SCNLA Board meeting and see if the Board would like to act on this information. Both of these topics relate directly to our members and the industry and how we provide them services. The industry can benefit from a more efficiently run association by saving money and being more productive.

Membership Directory – This program helps growers of nursery products get their names, phones numbers, websites, etc. out to potential buyers and provides buyers (direct influencers) with a handy resource of growers. We already had a landscape company from Virginia call looking for sources of SC grown plant material and I was able to send them a copy of this new directory. Compared to the other publications that we know of this is the largest list of nursery and ornamental plant growers in South Carolina.

Lessons Learned

Fall Field Day Event – We put the evaluations in the chairs for the attendees to complete and had the moderator ask them to do so. But not many of them did. Next time, we would hand the evaluations out as they are going to lunch and ask them to complete the evaluation while waiting in line, then have a person located where they pick up their plate take up the completed evaluations. It takes a while for 180+ people to go through a buffet line so that should be adequate time to complete the evaluation. Then for the afternoon session we would pass evaluations out at the beginning of the last session and stand at the door to take the evaluations up when the attendees were on the way out. We would get much better participation in the evaluation process this way.

SCHI Education – Pesticide Applicator re-certification credits are still a big draw for our industry. This year we added Certified Arborist CEU's and while not a lot of people signed up for these credits we were told several times how much the opportunity was appreciated so next year we will offer Certified Arborist CEU's again and try to publicize it more. We also learned title/"packaging" is important. The "Roundtable Luncheon" would be better titled "Networking Luncheon" or something that better describes how the attendee would benefit from attending. The early morning breakfast drew a good crowd.

We had never had an event this early in the morning but the combination of topic (and Pesticide Applicator re-certification credits) and the Saturday morning time slot was a success. We will certainly consider a similar early morning event in the future.

Website – Event participants continue to use our website more and more to register for events and to get information. We need to continue to keep it updated and easy to use so that we don't "lose" people who go to the web site and either can't *find* what they are looking for or it's not there to begin with. A website is a necessity and *a easy to use*, relevant website is invaluable to associations and commodity groups.

Grower Marketing Seminar – *You can lead a horse to water but you can't make him drink!* Seriously, business issues seminars usually are not attended as well as programs with re-certification credits and "new" plants/equipment/pesticides seminars but this program should have been different. Valuable information during a difficult economic time held during a slow time of the year at a very reasonable price – it seemed like a "No Brainer" but it's time to accept they are not interested in these types of programs.

NLAE Conference – Associations and their leadership need to stay current on new trends in management, legislative and regulatory issues for associations and their members (this can be 2 totally different tracks), and you can learn from others mistakes with out having to make them yourself. Foster talked to several other Nursery Association Executive Directors and shared the story about poor turn out at the Grower Marketing seminar. This seems to be the case in other states as well – business programs (which growers seem to need the most) are usually not well attended.

Membership Directory – We learned that each edition needs to have a new look, new information (i.e. the SC Certified program) to continue to make it a good resource for promoting SC nursery products and services. New photos, different color combinations make it appealing and more noticeable.

Contact: Donna Foster, Executive Director, SCNLA
Phone (803)743-4284; scplant@bellsouth.net

PROJECT THREE

Project Title: BUY SC SOD

Project Partner: South Carolina Sod Producers Association

Project Summary

The SC Sod Producers Association (SCSPA) applied for this funding to conduct outreach and education for its members on better stewardship and sustainability of sod production in SC and to promote sod sales through marketing with advertising, displaying at industry trade shows, and creating a website.

The SCSPA is an organization of twelve turfgrass producers who work to promote and improve the sod production industry in SC. These twelve producers grow approximately 7500 acres of sod, and employ about 400 persons.

Until this project, there was no accurate record of the acreage of sod grass being grown in SC. A survey needed to be conducted to obtain an official number of acres grown by both the SC Sod Producers Association members and other sod producers in the state. The sod industry in SC was declining and had lost at least four farms. However, the exact economic impact of this downturn was not known. Discovering the new industry data was imperative to this project's success.

Another goal of the project was to increase sales. Sod sales could be increased for association members if advertising was done to educate the horticulture industry of the availability of sod grown in the state. Sod sales could also increase if the sod quality was improved. Educating our members on better management practices and newer varieties of sod was important to improve quality, gain trust of the customer, and revitalize the industry.

Also, the association did not have a website. The Board felt like a website needed to be developed that could help with marketing SC grown sod. The sod industry was declining from lack of sales due to the housing industry suffering from the down turn in the economy. It was important to advertise the availability of sod to help increase sales and keep from losing more sod producers in the state. The association needed to get a website up and running to be able to keep up with the times. The website has been helpful to sell sod and educate the sod producers.

Project Approach

The South Carolina Sod Producers Association (SCSPA) sent out a survey to 26 sod turfgrass producers in SC. We were able to identify 26 sod producers when in the past we believed that there were 20 sod producers in the state. The survey included questions pertaining to overall production of sod in South Carolina. The goals of the survey and study were to obtain accurate production data for sod grown in SC; to deduce and develop new marketing tools for sod farmers in SC; and to increase overall demand for sod grown in SC.

The body of the survey, and the complete results, are as follows:

Introduction

The South Carolina Sod Producers Association (SCSPA) sent out a survey to 26 sod turf producers in South Carolina. The survey included questions pertaining to overall production of sod in South Carolina. This survey was made possible through a grant funded by the USDA Agricultural Marketing Service Fruit and Farm Bill. It was administered through the SC Department of Agriculture's Specialty Crop Block Grant Program to enhance the Competitiveness of Specialty Crops grown in SC. The goals of the survey and study were to obtain accurate production data for sod grown in SC; to deduce and develop new marketing tools for sod farmers in SC; and to increase overall demand for sod grown in South Carolina.

Methodology

Part One of the Survey consisted mainly of three questions which addressed the total acreage of sod within each farms production. First it asked for a breakdown of those acres into the different varieties grown and also how many acres were ready for sale at the time of the survey. This part also includes the past two year's acreage fluctuations and perceived next two years acreage fluctuations.

Part Two of the survey dealt with more specific economic business details. These were included to try and formulate an overall view of sods impact in SC agriculture. The survey also asked each producer what percentage of their sales were in SC and other states within which they sold. In addition, the survey asked for a percentage breakdown of sales to Landscapers, Contractors, Golf Course/Athletic Fields, Homeowners, and Other. The survey also included questions pertaining to percentage income from sod sales, and number of years in sod production.

Part Three specifically dealt with questions asking for a listing of other Trade Associations with which the members and non-members were also a part of and an open ended question asking what the SCSPA could further do for the producers.

Results

Replies for 20 surveys were received from a total of 26 sent out for a response rate of about 77%. Of the responses 100% of SCSPA members were contacted and surveyed.

Part One – Overall Production

Addressing total acreage of sod, the first question pertains to the breakdown of varieties and the acres dedicated to each variety.

Total acreage of sod reported was **11380.5 acres** cumulative.

The breakdown results are presented in Figures 1.1 below and 1.2 on the next page.

Figure 1.1

Total Acreage by Type

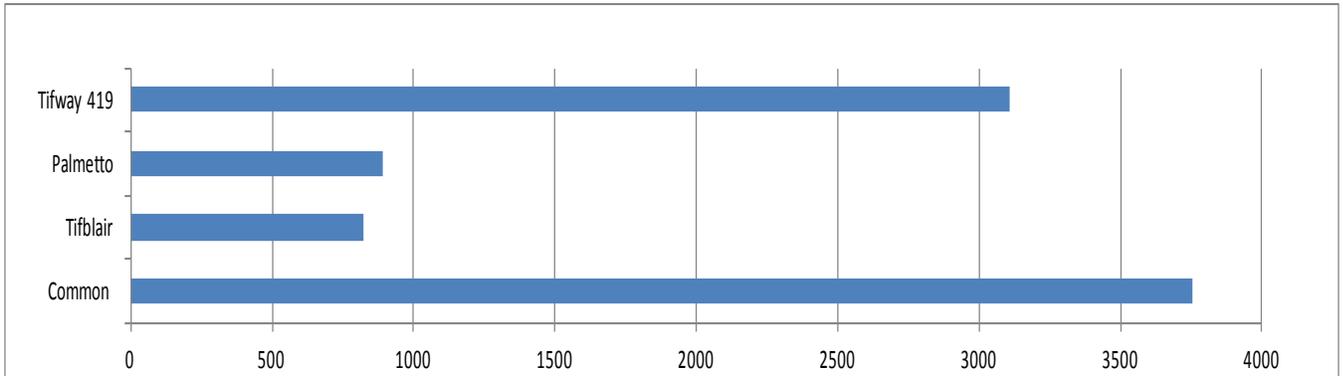
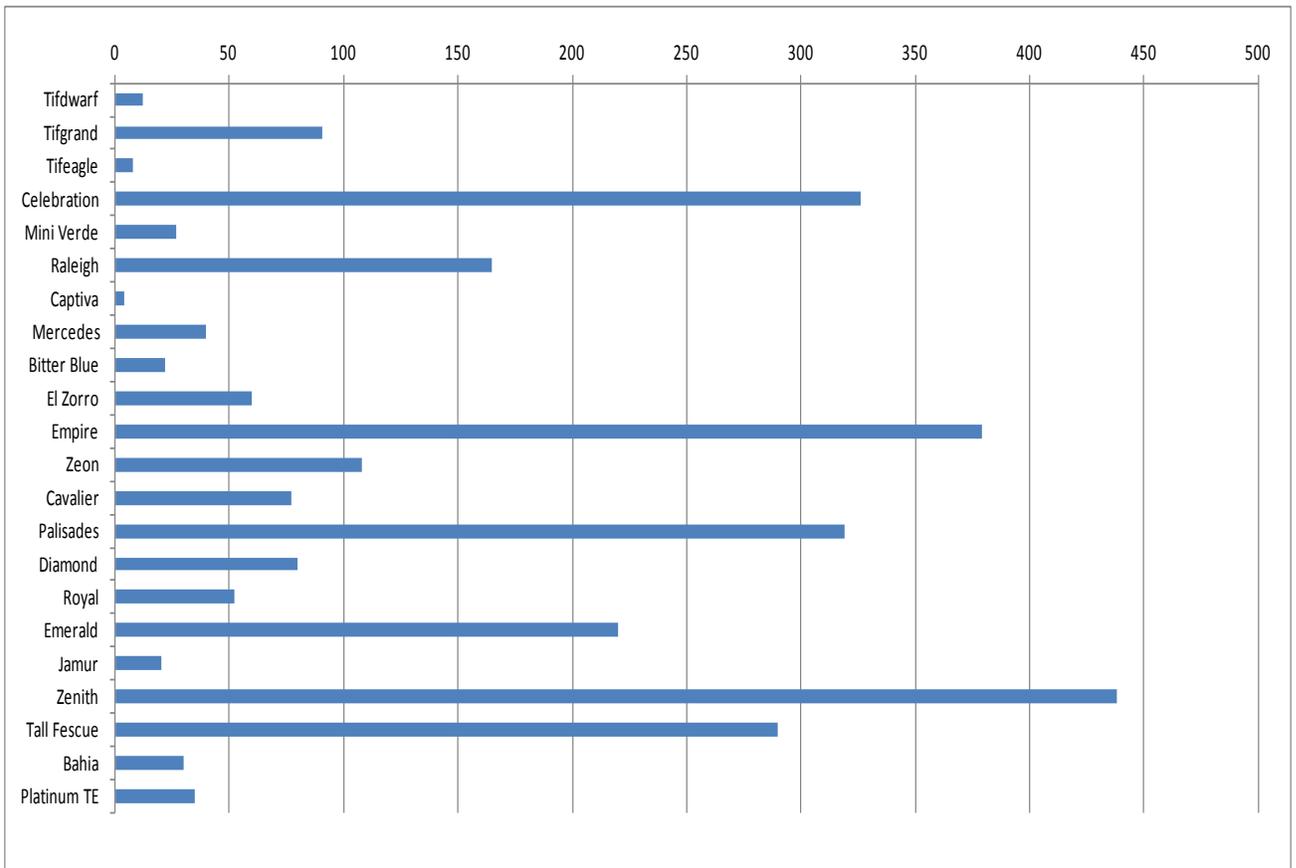


Figure 1.1 above shows the top four varieties in terms of acreage. These four varieties together account for 75.38% of the total acreage used in sod production.

Figure 1.2



-The charts are broken into two different sections with Figure 1.1 containing the 4 largest acreage holders, and Figure 1.2 containing the remainder. This was done to properly display each variety.

Based on the responses, Common Centipede and Tifway 419 are South Carolinas highest two varieties in acreage with 3,755 and 3,110 acres and 33% and 27.33% respectively. This comes to no surprise when roughly 84 percent of producers surveyed are growing one or both of these.

The next question in this part related to separating the Ready to Sale acres in each variety from the total acreage.

Total acreage of sod Ready for Sale reported was **3602.5 acres** cumulative.

The results from this broken down are presented in Figures 1.3 and 1.4 on the following page.

Figure 1.3
Ready For Sale by Type

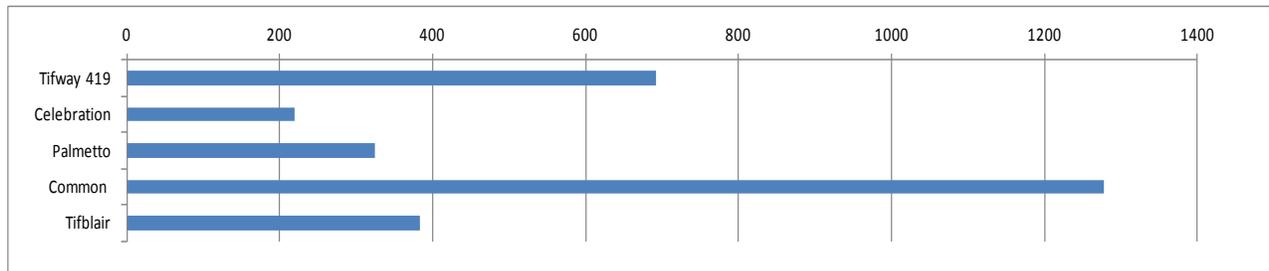
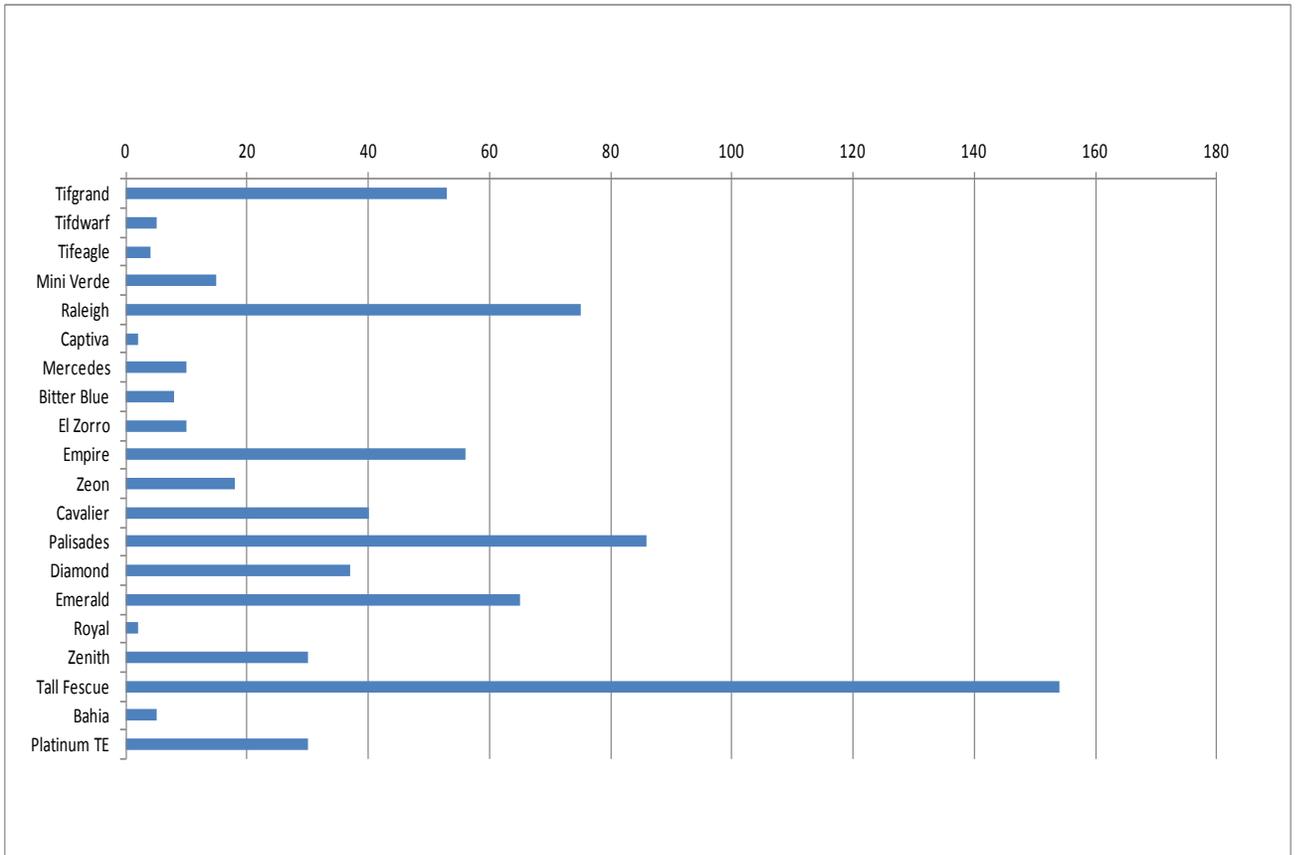


Figure 1.3 above shows the top five varieties in terms of acreage ready for sale. These five varieties together account for 80.5% of total acreage ready for sale.

Figure 1.4



The results shown in Figures 1.3 and 1.4 above are congruent with the results from Figures 1.1 and 1.2 where Common Centipede and Tifway 419 are again the leading acreage holders. This time the two rank in at 1,277 acres for Common Centipede and 692.5 acres for Tifway 419 with 35.4% and 19.2% held respectively.

This section also questioned each producer's acreage fluctuations in the past two years, along with any planned or perceived acreage fluctuations over the next two years.

Figure 1.5 below shows how the responses averaged up between an Increase, Decrease, or No Change in Acreage from the Past Two Years.

Figure 1.5 Past Two Years

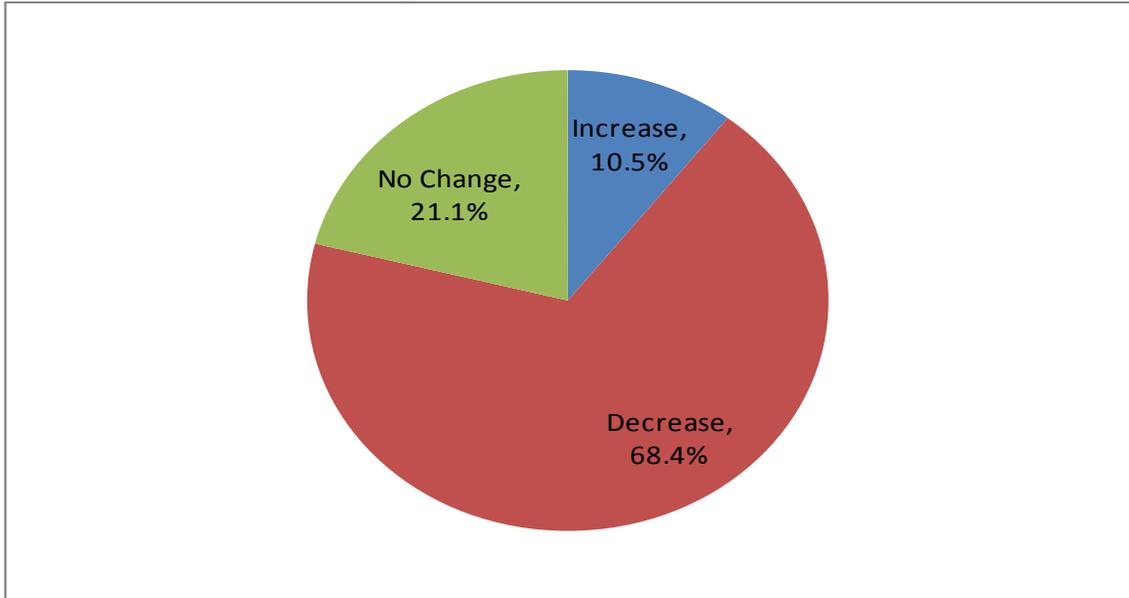


Figure 1.6 Next Two Years

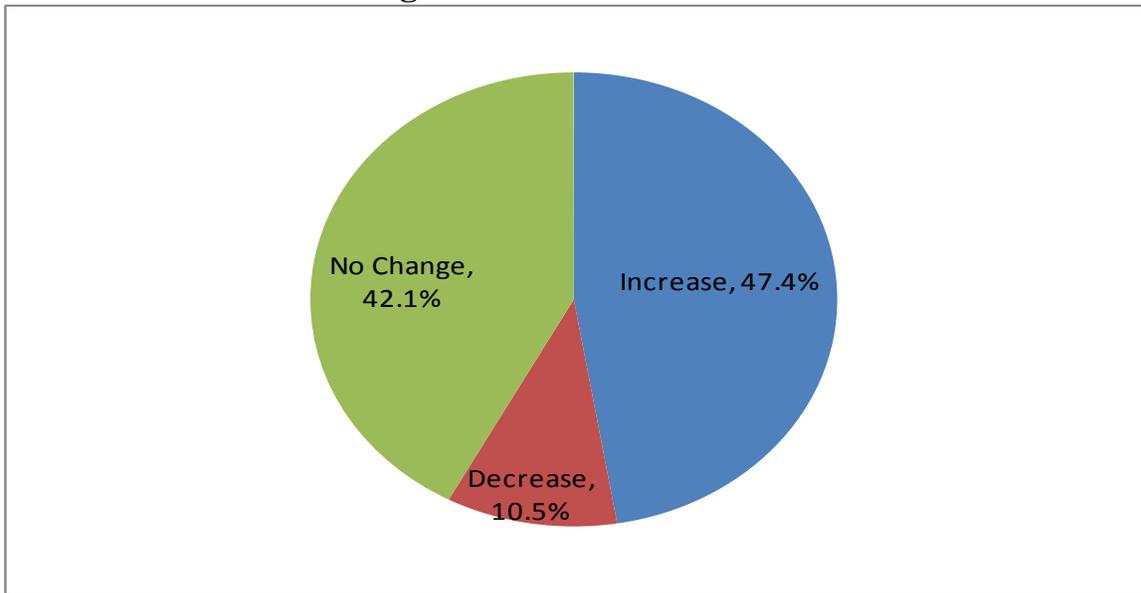


Figure 1.6 above shows the responses averaged up from an Increase, Decrease, or No Change in Acreage for the Next Two Years.

Part Two – Economics and Marketing

Addressing Economics, the first question dealt with Gross Sod Sales (Sod Only) for the years 2010 and 2011.

2010 Total: **\$27,173,287.00**

2011 Total: **\$31,056,529.00**

A closer examination of these results can be seen in figures 2.1 and 2.2 below.

Figure 2.1

Operations by Value of Sales												
2,500,000 or more		1,000,000 - 2,499,999		500,000 - 999,999		250,000 - 499,999		100,000 - 249,999		50,000 - 99,999		
Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	
2010	4	17,100	5	6,917	2	(D)	4	1,240	2	(D)	2	(D)
2011	5	23,430	3	3,800	3	2,339	3	883	3	493	2	(D)

Figure 2.2

2009 Horticulture Specialties: USDA NASS Data										
2,500,000 or more		1,000,000 - 2,499,999		500,000 - 999,999		250,000 - 499,999		100,000 - 249,999		
Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	
2009	1	(D)	2	(D)	4	2,398	6	1,944	9	1,792
50,000 - 99,999		40,000 - 49,999		25,000 - 39,999		20,000 - 24,999		10,000 - 19,999		
Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	Operations	Sales (1000)	
2009	2	(D)	2	(D)	-	-	-	-	-	

-The symbol (D) has been placed into some spaces to illustrate that data has been withheld to avoid disclosing data for individual operations.

These charts give a breakdown of the reported Gross Sod Sales. Figure 2.1 illustrates the data compiled from the survey. Figure 2.2 shows what the historical breakdown from the 2007 Census of Agriculture. As seen above, there has been a growth in sales that has led to many shifts between brackets by producers.

Another question in this category requested the percentage of Gross Income from sod sales as it related to other production operations at the time of the survey.

The results of this show that the average percentage of income from sod sales is **68.5%**.

The data also showed that 58% of the producers surveyed have a 75 or higher percentage of income from sod sales with the data ranging from 5 to 100 percent.

Addressing Marketing and Sales practices by producers, the first question inquired about the percentage of sales within South Carolina and any other states with which sales were performed. The results are presented in Figure 2.3 below.

Figure 2.3

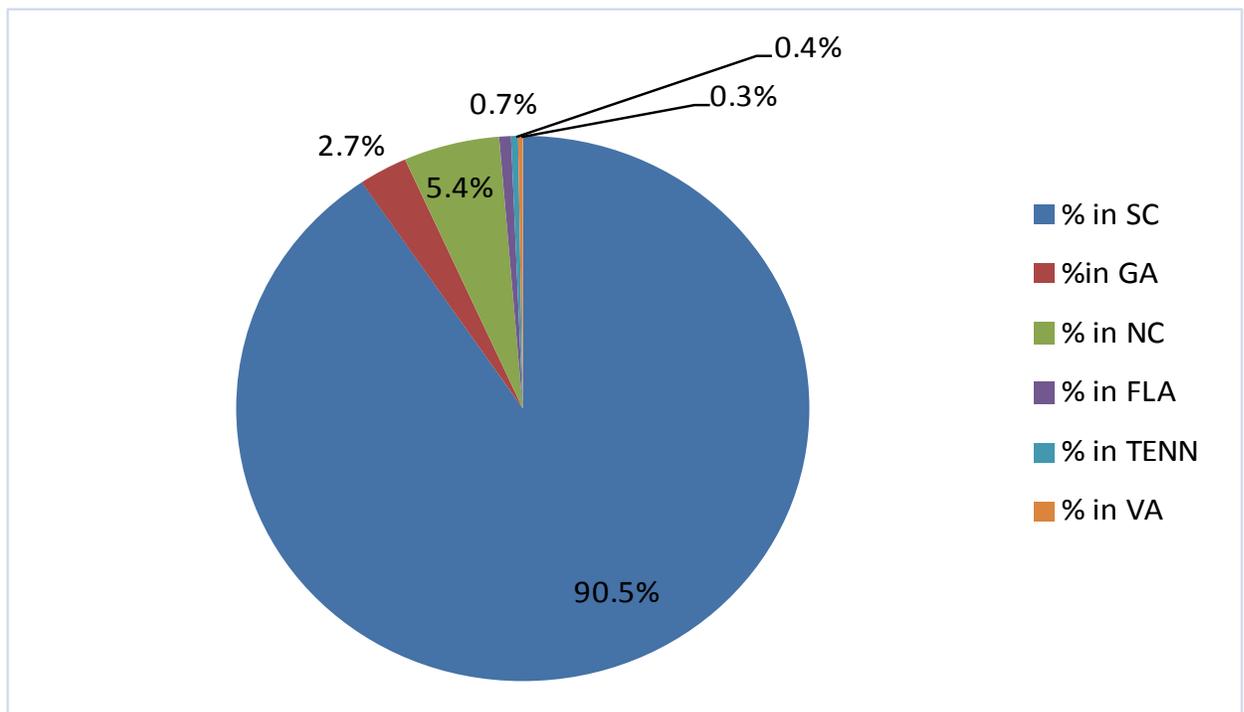


Figure 2.3 above shows the percentage breakdown of sales to states given by producers. Based on the responses, South Carolina holds a vast portion of sales at 90.5% with North Carolina and Georgia following second and third with 5.4% and 2.7% respectively. The diversity of states comes from an overwhelming majority of producers surveyed branching out into at least 2 or more states.

The next question also dealt with Marketing and Sales Practices. This question inquired about to whom sales were being made to. The results are presented in Figure 2.4 below.

Figure 2.4

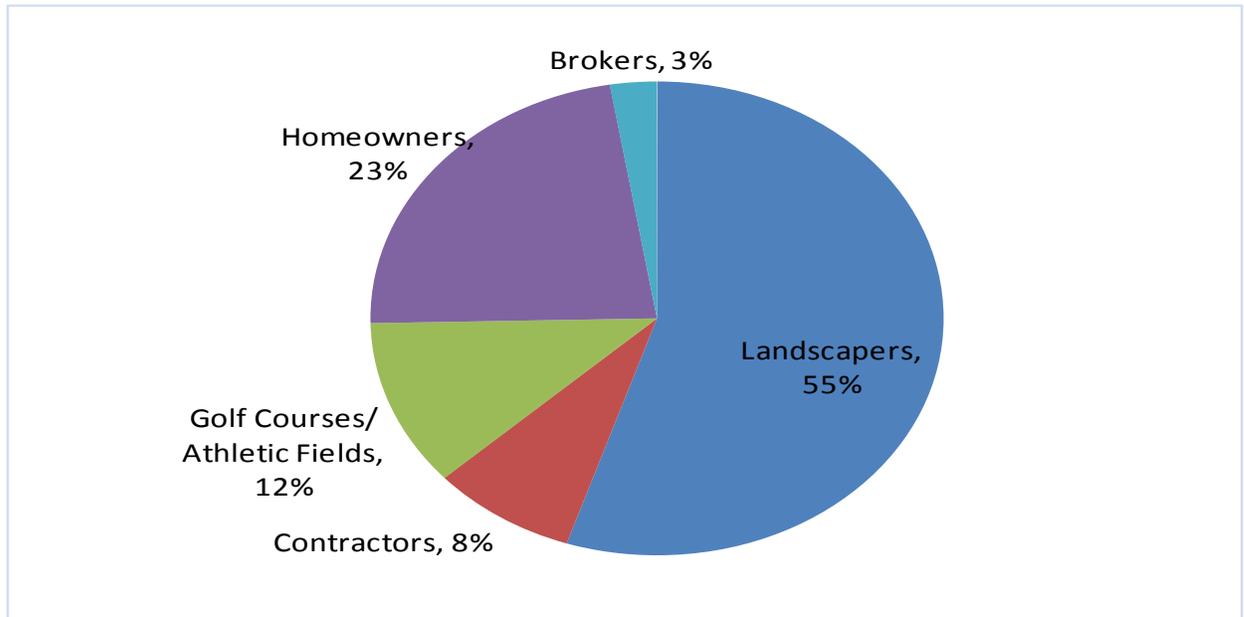


Figure 2.4 above shows the breakdown of sales into five categories. The main four being Landscapers, Homeowners, Golf Courses/Athletic Fields, and Contractors. Brokers were added to the results when it was used in the “Other” category by a few producers. The results show that Landscapers and Homeowners are the most sold to with 55% and 23% of sales respectively.

One goal of the project was to pursue an aggressive marketing plan. The plan included the development of a website, ads in local industry magazines, and participation in trade shows. The following activities were taken to accomplish these goals:

- An ad was run in the SC Nursery and Landscape Association’s (SCNLA) bimonthly magazine for the Sod Producers Association listing all members and their contact information. This magazine goes out to all landscapers all over the state.
- The SCSPA were included in the SCNLA annual show in Myrtle Beach to promote the members of the association, and educate the show participants in which types of sod are produced in SC.
- Educational meetings were held with sod producers for the topics of weed control, insect control, diseases and the new varieties of sod.
- A website was designed and launched. The website was hosted monthly and updated as needed. Emails and phone calls generated by the website were answered by the consultant.

Goals and Outcomes Achieved

- A survey of all sod growers in SC was conducted.
- Ads were run in trade publications.
- A display and pamphlets were developed to use at trade shows to promote SC sod.
- A display booth was done at SCNLA trade show.
- Educational meetings were held to give sod growers the tools needed to grow better sod.
- A website was developed and launched.

As a result of the above activities:

- Sod sales have increased by 8% since the start of this project. 15% was the targeted goal.
- Sod acreage in SC is known. 11,380 acres of sod is grown in SC by 26 growers. There are 22 different varieties of sod produced.
- Educational outreach concluded with 4 meetings with a total of 70 participants.
- The survey provided invaluable information of the income from sod and the primary customers that purchase the sod. In the future, this will enable the sod producers and the SCSPA to accurately target their advertising dollars.

Beneficiaries

The members of the SC Sod Producers Association benefited the most from the project. It also benefitted the horticulture industry in the state by making them aware of the sod grown in the state. All 26 sod growers in SC benefitted from this project.

There are 12 members of the SC Sod Producers Association who produce about 80% of the sod grown in SC. There are a total of 26 growers in the state but the other 14 growers are a small percentage. All growers benefitted from the survey.

The Sod Producers benefited from the survey by identifying the number of acres of each variety of sod that is planted in the state. This information helps them plan for the future, by allowing them to know how many acres and what varieties to plant, and not oversaturating the market. The project also allowed them to decide better where to spend their advertising dollars. The survey gave the Association facts about the sod industry in SC and allowed us to show that we are a strong part of SC agriculture. We were able for the first time to identify all of the sod growers in SC. The survey allowed us to compare our sales figures with NC Sod Producers' survey and see where we needed to increase out of state advertising. The survey helped the Association make long term plans for its' future. It identified members of allied industries and researchers that the Association could contact for joining, to further sustain the organization.

Lessons Learned

The positive results include that a survey of all sod producers was done. This was the most important result. We were able to locate all 26 sod growers in SC. All but 6 participated in the survey. Acreage from those 6 were estimated based on USDA

information from their home county. Having information on actual acreage will allow the sod industry to show the economic impact.

We also learned from the survey that only 9.2% of SC sod is being sold outside SC. Compared to a similar survey conducted by NC that showed, NC growers were selling 10% of sod into SC. SC is selling 5.4% into NC, 5.4% into GA, 0.7% into FL and 0.4% into TN.

We realize that a similar survey should be conducted every 5 years. Not only will this allow us to continue to show our economic impact but will also allow us to help plan for the future by looking at how many acres of certain varieties are being planted.

Educational meetings were held for the sod producers, but we found it was difficult for them to attend. Formal meetings are not always the best way to educate our members. Based on this we will begin to send out a bimonthly newsletter with updates from Clemson Extension and allied industry partners.

We believe that advertising and trade show participation allowed horticulture professionals to become aware of the SCSPA members, and learn about the different types of sod grown in the state. This helped increase sod sales for all of our members. As a result, our membership saw the benefits of advertising and being visible and are looking for more creative ways to get the information out to potential purchasers of sod. Sod sales are 55% to landscapers, 23% to homeowners, 12% to golf courses, and 8% to contractors. Based on this, we probably need to find a way to increase our advertising with homeowners.

We developed a website and paid for hosting. The website has been a useful tool to make information available to anyone interested in what type of sod to install, how to install and how to maintain sod. It has also been a marketing tool to promote our members to sell their sod. The website was probably the least effective portion of the project. The website has not gotten as much traffic as hoped. We have to find a way to direct more to the website and also keep good up to date information on the website. Some type of social media like Facebook may be a better us of our time to reach homeowners. The website is a good source of information to homeowners when deciding the best type of sod for their situation. A Facebook page directing homeowners to the website may be the direction to take.

Sod sales increasing could have been better but we have identified ways to continue to increase them. Since none of these programs have been done before, it was hard to predict what our outcome would be.

A survey of sod growers needs to be done on a regular basis maybe every 5 years. The information obtained from the survey was invaluable in deciding on a market plan as well as the association's future direction. Now that all sod growers in the state have been identified it should be easy to do the survey electronically.

A website needs to be very active to get traffic. Maybe a website is not the most effective use of our time and money. Facebook or some other social media might be a better use of time.

Educational meetings may not be the best way to get information out to the sod growers. We are going to try sending a bimonthly newsletter via email and alerts when needed. The only cost will be paying the consultant to write and send the newsletter. Continuing to educate our sod producers will allow the sod industry in SC to continue to improve and grow.

Contact Person

Helen Legare

843-514-1218

helenlegare@gmail.com

PROJECT FOUR

Project Title: Canning Coaches for Safe Home Preservation of Locally Grown Specialty Crops

Project Partner: Clemson University, Dr. Susan Barefoot

Project Summary

The purpose of the project was to expand the promotion of locally grown fruits and vegetables by developing community based “Canning Coaches” who assisted in training persons interested in safe canning and preservation methods. To promote locally grown fruit and vegetable specialty crops and to respond to state needs, Clemson Extension Food Safety and Nutrition faculty and agents developed a consumer curriculum for home canning and preserving. Because of limited staff, home canning workshops can only be offered in a limited number of locations. The creation of Canning Coaches has enabled more training to more persons that originally thought possible.

The workshop trainings, and all materials distributed within the training sessions, were only focused on the preservation of specialty crops for later use by the homeowner. The project was designed to focus on increasing the knowledge of proper canning of fresh fruits and vegetables grown in SC. To assist in the project, and leverage its sustainability, the funds received from the Specialty Crop Block Grant Program were supplemented by approximately \$21,000 in one-time Extension funds. These funds were used to procure equipment and supplies for county canning kits to equip the Canning Coaches trained in this project. These monies do not affect the project budget, but was given by Clemson Extension to provide permanent materials to be used in the class training.

The project director, Dr. Susan Barefoot, recruited volunteers from the South Carolina Family and Community Leaders (SCFCL) and alumni of the hands-on canning workshops in areas that Clemson Extension agents do not cover. The purpose is to train these volunteers as Canning Coaches who will in turn train the members of their communities in safe methods to preserve locally grown specialty crops. Through the development of the mechanism of Canning Coaches, a sustainable home food preservation mentoring network was established in SC.

By developing community-based Canning Coaches to train more South Carolinians in safe canning and preserving methods, Clemson expanded the promotion of locally grown fruit and vegetable specialty crops. Doing so has enabled more citizens to have the needed tools to help them safely preserve locally grown specialty crops, increase the consumption of these crops, and thus help South Carolina’s specialty crop farmers.

Project Approach

Volunteers were recruited who were familiar with the current standards of pressure canning (for vegetables) and boiling water bath canning (for fruits, jams and pickles). We recruited from the South Carolina Family and Community Leaders, the SC Farm Bureau Women’s Program, and alumni of hands-on canning workshops. The positions were also posted on Facebook, newsletters, e-mails, radio announcements and other venues. By mid-February, 68 potential Canning Coaches were identified.

Forty-five volunteers participated in one of three regional day-long Canning Coach training sessions held in Anderson, Sumter and Ridgeville in March of 2012. In March of 2013, thirty two volunteers were trained in Greenville, Lexington, and Marion. Geographically and racially diverse coaches were recruited; the seventy seven Canning Coaches represented 23 of South Carolina's 46 counties; 18% of the Canning Coaches were African American, 10% were male and 90% were female.

Preparations for the Canning Coaches trainings included statewide Extension Food Safety and Nutrition team planning sessions and multiple conference calls. Two new lessons had to be developed to complete the six lesson series: pressure canning, water bath canning, jams & jellies, pickling, freezing and dehydration). Three informal focus groups were held with prospective canning coaches who reviewed prepared materials, provided comments and made suggestions for items that would increase their ability to train others in their communities. Posters were developed and a presenter's script for each of the presentations was made. Training resource notebooks were prepared and supplied to each volunteer, and contained a brief introduction to Cooperative Extension, information about the support from the USDA AMS SCBGP and the SCDA, and extensive information on the food preservation lessons: speaker notes, posters, powerpoints, fact sheets, recipes, handouts and other related information. All six at-home food preservation topics were covered in some detail during each training session. Canning equipment was demonstrated. Food safety issues in home food preservation were emphasized throughout the three trainings. Canning Coach tips addressing current food preservation issues and frequently asked questions were provided on a bi-weekly email basis since June 1, 2012.

Goals and Outcomes Achieved

Clemson Canning Coach volunteers have contributed to more than 900 hours to the Carolina Canning program, assisting with hands-on canning workshops across the state. Although there is a continued need for expansion of these efforts, Carolina Canning gets reliable, science-based food preservation and canning information into many communities and is helping more South Carolinians to preserve their foods safely.

More specific outcomes achieved:

- Uniform consumer curriculum for home food preservation of fruits and vegetables
- Fifty workshops conducted across SC; 450 participants (360 participants were projected). All 450 participants (100%) indicated by pre and post workshop surveys that knowledge was gained. The important component of food safety received the highest indicators, or percentage gained, by the participants.
- Network of Canning Coaches established to continue the workshops and educational outreach efforts. This network continues to increase, and the outcomes of the project will continue to grow.
- Year-round consumption of specialty crops will be increased, sustaining more nutritious diets
- Food safety issues in home food preservation were emphasized throughout the three trainings. All Canning Coaches indicated that they had learned new

knowledge from the trainings. Pre and post training surveys indicated a 100% knowledge increase; each Canning Coach improved their knowledge and/or skills in at least one component of the training. These numbers exceeded the project goal of 70% of the coaches improving their knowledge and experience. Our sessions included knowledge questions in the evaluations. All Coaches reported an increase in their food preservation knowledge.

Social Media Outreach (On-going Web based monitoring of the program)

- Permanent page for Carolina Canners established on the Clemson Extension website. This page allows for any clientele to access information about the program within their county. It also provides links to local farmers markets, Certified SC Grown producers, CSAs within the state, etc. The link may be accessed by http://www.clemson.edu/extension/food_nutrition/canning/.
- 601 persons have liked the Facebook page ‘Carolina Canners’. Through this social media site (which was created as a tool of this project to reach the public), followers receive ongoing updates about success stories, canning tips, and upcoming events hosted by Canning Coaches. The page may be found at <https://www.facebook.com/carolinacanning>.
- The Carolina Canners Twitter page (<https://twitter.com/CarolinaCanning>) currently has 100 followers, and 635 tweets, and it is following 50 feeds. The objective of the Twitter page are as that of the Facebook page.

Beneficiaries

This project has succeeded in building a network of community-based Canning Coaches across the state of SC, who have each expanded the publics’ knowledge about preserving specialty crops. An immediate benefit of the Canning Coaches has been having community members as mentors for new canners and preservers. The increased knowledge resulting from expanded workshop offerings (with more than 150 participants) has helped families develop the needed skills to safely preserve locally grown fruit and vegetables. This knowledge should have in turn increased proceeds for all South Carolina specialty crop farmers. The long term goal is to provide fresher, tastier, more nutritious foods for SC families and help them meet the recommended 3 to 5 daily servings of fruits and vegetables.

Lessons Learned

The needs for at-home food safety and preservation skills education continue to increase. The evaluation of different possibilities in providing the needed education and skills in food preservation and food safety knowledge for the Coaches to disseminate to the public needs to occur by the development of a hybrid curriculum of both on-line training and hands-on experience.

Contact Person

Dr. Susan Barefoot
864-656-5682
sbrft@clemson.edu

PROJECT FIVE

Project Title: Farm Fresh Food

Project Partner: LowCountry Local First

Project Summary:

Lowcountry Local First is working hard to advocate for a strong local economy by providing outreach, support, and training to independent businesses and farmers in South Carolina through the Buy Local and Eat Local Initiatives. The Eat Local Initiative (formerly “Farm Fresh Food”) was developed after identifying the following trends in the Lowcountry (or coastal areas) of South Carolina:

- aging farmer population
- loss of agricultural lands
- increased demand for local food
- lack of knowledge regarding access, availability, and benefits of buying locally.

Lowcountry Local First's Eat Local Initiative is addressing these issues from both the supply and demand side of the food system. Supply side strategies include a.) cultivating the future farmers; b.) providing support and infrastructure for new farmers; c.) offering support, training, and marketing for existing farmers and d.) pairing new and existing farmers with agricultural lands. On the demand side, LLF is providing consumer education, supporting the creation of new markets for farmers, and advocating for policies that support local farmers and businesses. Our program is focused on ensuring farming production, business, and distribution is truly sustainable by providing the community with the tools to grow, distribute, and access fresh local foods now and in the future.

Project Approach:

Lowcountry Local First's “Farm Fresh Food” project took a multi-sided approach to increasing the growing of and demand for specialty crops in the coastal areas surrounding Charleston, South Carolina. The “Farm Fresh Food” project included new and beginning farmer training in specialty crop production, consumer education and outreach activities promoting the consumption of locally grown specialty crops, and the creation of program materials on specialty crops.

The following activities were conducted to ensure all grant funds were used to solely enhance the competitiveness of specialty crops:

- Only specialty crop growers, apprentices interested in entering the specialty crop market, chefs utilizing specialty crops, and/or consumers seeking information on specialty crops benefited from the funds provided through the SCBGP.
- Funds spent towards the promotion or education of crops that are defined as non-specialty crops were paid for by other funds within LLF.
- The staff of LLF was diligent in separating the two including separate invoices/activity codes that can be billed separately.
- All educational materials that were developed solely included specialty crops (all graphics and information)
- No examples using protein, milk, eggs, cheese, etc. were used.

- **CFSA Conference:** Only courses that specifically benefitted specialty crops were approved to be taken and charged to LLF. Any additional courses or tours associated with non-specialty crops were paid individually by the attendee.
- **Mentor Farmer:** All had backgrounds in specialty crops and their timesheets reflected the area of focus during their billed mentorship hours (there were difficulties in having farmers creating detailed invoices but staff verbally confirmed the designation of hours associated with specialty crops).
- **Sustainable Agriculture and Farm Businesses Courses:** All participants covered by SCBGP funds expressed prior interest in learning more about specialty crops.
- **Farm Tour:** Participating farmers on the SCBGP funded farm tour were limited to those who only produce specialty crops. Materials produced for the Farm Tour with SCBGP funding were based on specialty crops and specialty crop producers only.
- **Eat Local Postcards:** All postcards were focused on the use of specialty crops.

Below is a description of each project. Figure 1 indicates specific outcomes, goals, and impacts.

The following projects, events, and services were implemented:

1. **Chefs Potluck:** A farm-to-table event focused on connecting specialty crop producers with local chefs and showcasing the bounty of local produce grown in the Lowcountry. The event builds relationships between farmers and chefs, farmers and consumers, and chefs and consumers while educating all participants about the availability of season produce and how delicious it can be.
2. **Mentor Farmer for Incubator Farm:** The Dirt Works Incubator Farm provides both farm incubation for new farmers and a teaching farm for farm apprentices. Both incubated farmers and apprentices benefited from the mentoring of an experienced farmer to provide consultation, training, and feedback on specialty crop production and business.
3. **CFSA Conference Attendance:** The LLF Sustainable Agriculture Program Director and 3 farm Teachers Assistants were able to attend the CFSA Conference hosted in Durham, NC. Attendees were able to participate in farm tours, workshops, trainings, courses, networking, seed exchange, and expert panels.
4. **Courses for Apprentices:** Participants in the Growing New Farmers Apprenticeship program are provided on-farm mentorship, field days, workshops, and classes. The two courses provided were Sustainable Agriculture and Farm Business. The sustainable agriculture course covered agricultural basics including soil, plant anatomy/physiology, pests and disease control, and field trips. The food and farming entrepreneurship course included guest speakers, business plan assistance, and networking. The sustainable agriculture course included program binders, farm tours, and hands-on trainings.
5. **Lowcountry Farm Tour:** The first ever Lowcountry Farm tour was a great success with seven participating farms providing behind the scenes group tours for over 200 people. Attendees of tour traveled a range between 5 to 100 miles. The Farm Tours were part of a larger effort known as Eat Local Month, which marketed local produce to consumers for the entire month of April with an Eat Local Challenge, Radio spots, new articles, newsletters, and social media updates. The month was extremely well received and reached thousands of local residents. <http://lowcountrylocalfirst.org/farm-tour-map>

- 6. Eat Local Collateral:** To assist consumers to increase their understanding of the seasonality, availability, and importance of specialty crops, we created and printed materials including recipe cards and ripe charts. Ripe charts show the specialty crops available in SC and what time of the year they are available in the Lowcountry.

Goals and Outcomes Achieved

1. Understanding of seasonality, availability and importance of specialty crops was measured by:
 - a. Participation in trainings and conferences (Buyers and Farmers)
 - b. Program evaluation tools (Apprentices and Farmers) *see attached*
 - c. Graduation from Sustainable Agriculture and Farm Business Courses (Apprentices and Farmers)
 - d. Attendance to Lowcountry Farm Tours (Buyers and Consumers)
 - e. Receipt of printed materials (Buyers, Consumers, Farmers, Apprentices)

*The outcomes and impacts of each of these activities are listed individually in the spreadsheet below.
2. Both Farmers and Apprentices served as teachers and students (education was two-way). During this program year there were 32 apprentices working with 12 mentor farmers.
3. Included within this report are hard copies of our three survey documents for your convenience. One is a survey for the sustainable agriculture course, one is a general end-of-apprenticeship survey, and the final document is a working competency spreadsheet. Below is information from 2012 program year:
 - All 15 apprentices who completed the survey thought the information presented was relevant;
 - 85% of those surveyed expressed interest in pursuing a professional certificate combining classroom and hands-on hours in sustainable agriculture;
 - All those surveyed would recommend the course to another person.

Here is the compiled data from the end-of-apprenticeship survey:

- All 19 apprentices surveyed said the program met their expectations.
 - All apprentices surveyed had an increased understanding of local farms, basic farm operations, and types of agricultural products in the lowcountry.
 - All apprentices surveyed expressed an increased understanding of the challenges facing farmers as well as an overall knowledge of the technical, economic, and logistical aspects of farming.
 - 100% of those surveyed cited an increased understanding of farm business and market opportunities in the lowcountry.
4. Consumer's increase in understanding through farm tours was measured based on participation. All guests on the farm tours were exposed to a diversity of specialty crops, received personal farm tours from farmers that covered what, where, when,

and why regarding specialty crops, and all farms had specialty crops available for sale.

Goal	Outcomes	Impacts
<i>Chefs Potluck-Consumer Education and outreach</i>	Consumers increase their understanding of the seasonality, availability, and importance of specialty crops.	Specialty crops purchased from 6 farmers. 350 attendees exposed to specialty crops, specialty crop farmers, and chefs.
<i>Chefs Potluck-Buyer education and outreach</i>	Buyers increase their understanding of the seasonality, availability, and importance of specialty crops.	Specialty crops purchased from 6 farmers. 13 chefs exposed to specialty crops, specialty crop farmers, and chefs.
<i>Mentor Farmer</i>	Farmers increase knowledge of growing specialty crops and reduce risks in their specialty crop business.	8 farmers and 25 apprentices provided mentorship in specialty crops.
<i>CFSA Conference</i>	Agricultural staff and mentor farmers increase their capacity to educate farmers on the growing, marketing, and sales of specialty crops.	Program Director and 3 Teaching assistants attended CFSA Conference and brought back knowledge in production, marketing, and sales to share with farmer network of over 130 farmers.
<i>Apprentice Courses</i>	New farmers understand the availability, production, marketing, and sales of specialty crops in South Carolina.	Six new and beginning farmers completed coursework in Sustainable Agriculture and Farm Business. All participants surveyed indicated increased knowledge.
<i>Farm Tour</i>	Consumers increase their understanding of the seasonality, availability, and importance of specialty crops.	23 volunteers, 6 farm apprentices, 4 staff members, 3 interns, and 200 participants gained increased knowledge of specialty crop farm operations.

<i>Farm Tours</i>	Specialty Crop Producers increase their exposure to customers.	Seven farms were able to increase exposure to over 200 participants.
<i>Seasonality of Specialty Crops- Recipe cards, ripe charts</i>	Consumers increase their understanding of the seasonality, availability, and importance of specialty crops.	2,500 CSA Members, 3,000 Farmers Market Attendees, 500 LLF Members, and over 2,000 additional residents (through outreach efforts) were provided with information on specialty crop availability, seasonality, and uses.

Beneficiaries

Lowcountry Local First programs currently connect resources to over 150 restaurants, 80 farms, 95 apprentices, 3,000 CSA members, 43,000 elementary students, 130 farmers and food system leaders, for total of over 700,000 people.

The funds from this grant directly supported and made positive impacts on the following: 136 established specialty crop producers, eight (8) new and beginning farmers interested in growing specialty crops, twenty five (25) apprentices. An indefinite number of consumers of specialty crops, and at least twelve (12) chefs working with specialty crops were also benefitted from this project.

The “Farm Fresh Food” project directly impacted the beneficiaries listed in Figure 1 as well as those individuals currently being impacted by existing programming and those individuals reached through related media articles, radio outreach, and/or social media outreach.

Lessons Learned

The Chefs Potluck primary lesson is to connect with chefs and farmers well in advance of event to allow growers to plant in advance and chefs to schedule accordingly.

The courses in Sustainable Agriculture and Farm Business have been successful due to their content, guest speakers, field trips, and teachers. The lessons learned are related to the length of term for the sustainable agriculture course (extending the timeline longer to include spring and summer seasons) and to target the farm business course to more advanced farmers (newer apprentices are not fully prepared to utilize the coursework).

Major lessons from the Lowcountry Farm Tours included the amount of small components that go into making such an event successful, the time frame needed to properly plan each component of the event, and the number/type of volunteers that make these events run smoothly. Recommendations based on these lessons include:

- Participating farmers need training in agritourism best practices (insurance, restrooms, lay-out, tour scheduling, staffing needs, and tips on maximizing the opportunity for sales etc.).

- Consumers must receive clear descriptions of the event to manage expectations regarding benefits of ticket purchase (how many farms, does it include food, how long will tour take).
- The sale of tickets prior to the event can be challenging- regional partners have had success partnering with larger chain grocery stores.
- To assist farmers in the greeting, orienting, and support of visitors, it is essential to have volunteers comfortable with customer service (in this case, not allowing high school age volunteers.)

In regards to the Incubator Farm project, the timeline of the program was shifted from Spring of 2012 to Fall of 2012 to ensure the ideal site, manager, and candidates could be selected. The program implementation is proceeding as planned. Lessons learned include:

- Amount of staff time needed to develop the program aspects as well as implement infrastructure install.
- Extended timeline to account for challenges faced in staff, infrastructure, and implementation in addition to unforeseen challenges (well going dry, site limitations, weather, etc.)

Contact:

Nikki Seibert, Director of Sustainable Agriculture
1345 Ave G #AA North Charleston, SC 29405
843-740-5444 AgDirector@lowcountrylocalfirst.org

Appendixes:



GROWING NEW FARMERS INCUBATOR PROJECT

2012 Apprenticeship Evaluation Form

Before completing this form, please take a moment to reflect upon your entire program experience. This includes your level of knowledge at the beginning of the program; all classes, workshops, field trips, and resources provided during the program; and the level of understanding, professional/personal contacts made, and experiences you have had through the program. We appreciate all of your hard work and feedback!

1. Coming into the program, what did you expect to gain?
2. Did the program meet your expectations? (Please circle one)

<i>Yes</i>	<i>No</i>	<i>Somewhat</i>
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3. If the program did not fully meet your expectations, why not?
4. How much has the apprenticeship increase your understanding of the following?
 - a. Local farms in the Lowcountry (farmers, locations, products)

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - b. Local farming resources (support agencies, websites, etc.)

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - c. Basic farm operations (components of working farms)

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - d. Types of agricultural products grown in the Lowcountry

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - e. Types of farming methods used in the Lowcountry

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - f. Types of market opportunities for farmers in the Lowcountry

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
-------------	-----------------	----------------------
 - g. Cultivation and production

<i>None</i>	<i>somewhat</i>	<i>significantly</i>
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h. Pest management	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
i. Harvesting/packing	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
j. Sales/marketing	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
k. Distribution/delivery	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
l. Farm business	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
m. Challenges facing farmers	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
n. Strategies for addressing challenges in farming	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
o. Career opportunities in farming and farm-related organizations	<i>None</i>	<i>somewhat</i>	<i>significantly</i>
p. Overall knowledge of the technical, economic, and logistical aspects of farming	<i>None</i>	<i>somewhat</i>	<i>significantly</i>

5. Please provide any comments or suggestions for the program below:



LOCAL FIRST®

GROWING NEW FARMERS INCUBATOR PROJECT

Farming Skills Evaluation – Fruit/Vegetable Production

Goal: The Farming Skills Evaluation is used by farmers and prospective farmers to assess competence areas in farming. Keep in mind that these skills will be obtained over a series of years.

- Take a seasonal survey of your exposure and competence in the given skill areas.
- Use the seasonal survey to fill out a Growing Season Learning Plan to help narrow your focus for a given year.

Please evaluate your level of competency in each of the areas listed below. This will help you clarify areas where you need additional training or experience. Please evaluate all of the areas listed, even if you have no experience or there has been no change in your skill level. Keep in mind that beginning farmers don't need to learn everything at once.

1. Fertility and Soil Management	2013 Season				
	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Planning soil building crops	1	2	3	4	5
Planting and managing soil building crops	1	2	3	4	5
Understanding the basics of soil health	1	2	3	4	5
Crop incorporation	1	2	3	4	5
Organic matter management	1	2	3	4	5
Understanding soil testing	1	2	3	4	5

Managing off-farm inputs (compost, fertilizers, minerals)	1	2	3	4	5
Additional Competencies					
Fundamentals of composting	1	2	3	4	5
Hand-built compost	1	2	3	4	5
Manure windrows	1	2	3	4	5
Living mulch systems	1	2	3	4	5
Foliar feeding	1	2	3	4	5
Compost and plant-based teas	1	2	3	4	5
Vermiculture	1	2	3	4	5

	2013 season				
2. Bed and Field Preparation	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Primary tillage/incorporating organic matter	1	2	3	4	5
Secondary tillage/seed bed preparation	1	2	3	4	5
Tractor/implement use	1	2	3	4	5
Rototiller use	1	2	3	4	5
Additional Competencies					
Raised beds	1	2	3	4	5
Plastic mulch	1	2	3	4	5

	2013 Season				
3. Plant Care & Culture	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Vegetable crop planning	1	2	3	4	5
Cultivar selection	1	2	3	4	5
Understanding cultural needs of crops	1	2	3	4	5
Direct seeding	1	2	3	4	5
Transplanting	1	2	3	4	5
Crop rotations	1	2	3	4	5
Spacing considerations	1	2	3	4	5
Succession planting	1	2	3	4	5

Basic concepts of plant botany	1	2	3	4	5
Additional Competencies					
Climate control/shading	1	2	3	4	5
Support structures for plants	1	2	3	4	5
Pollinating	1	2	3	4	5
Grafting, pruning, and training	1	2	3	4	5

	2013 Season				
4. Weed Management	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Weed identification	1	2	3	4	5
Understanding culture of weeds	1	2	3	4	5
Hand tool cultivation	1	2	3	4	5
Mechanical cultivation	1	2	3	4	5
Reducing seed sink	1	2	3	4	5
Mowing	1	2	3	4	5
Additional Competencies					
Flame weeding	1	2	3	4	5
Intercropping	1	2	3	4	5
Stale bed making	1	2	3	4	5
Natural and plastic mulching	1	2	3	4	5

	2013 Season				
5. Pest and Disease Management	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Designing healthy crop rotations	1	2	3	4	5
Pest identification	1	2	3	4	5
Application of pest control inputs	1	2	3	4	5
Disease scouting and monitoring	1	2	3	4	5
Pest scouting and monitoring	1	2	3	4	5
Additional Competencies					

Beneficial insects	1	2	3	4	5
Beneficial insect habitat	1	2	3	4	5
Designing biodiverse systems	1	2	3	4	5
Trap cropping	1	2	3	4	5
Barrier pest control	1	2	3	4	5

2013 Season					
6. Greenhouse Management	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Planning seeding schedule	1	2	3	4	5
Understanding planting media	1	2	3	4	5
Fertility in greenhouse	1	2	3	4	5
Germination techniques	1	2	3	4	5
Direct seeding techniques	1	2	3	4	5
Transplanting	1	2	3	4	5
Judging water needs - watering	1	2	3	4	5
Hardening off	1	2	3	4	5
Pest/disease management in greenhouse	1	2	3	4	5
Heating and venting a greenhouse	1	2	3	4	5
Additional Competencies					
Building a greenhouse	1	2	3	4	5
Making soil mixes	1	2	3	4	5
Outdoor seed beds	1	2	3	4	5
In-soil greenhouse growing	1	2	3	4	5

2013 Season					
7. Irrigation	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Determining moisture needs	1	2	3	4	5
Understanding irrigation systems	1	2	3	4	5
Planning irrigation systems	1	2	3	4	5
Water source and quality	1	2	3	4	5
Irrigation management and	1	2	3	4	5

scheduling					
System maintenance	1	2	3	4	5
Winter preparation	1	2	3	4	5
Additional Competencies					
Soil moisture testing	1	2	3	4	5

2013 Season					
8. Harvest	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Judging readiness for harvest	1	2	3	4	5
Harvesting techniques and tools	1	2	3	4	5
Managing field heat	1	2	3	4	5
Additional Competencies					
Forecasting maturity and yield	1	2	3	4	5
Collecting and processing seed	1	2	3	4	5

2013 Season					
9. Post-Harvest	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Receiving	1	2	3	4	5
Cooling	1	2	3	4	5
Cleaning	1	2	3	4	5
Drying	1	2	3	4	5
Packing	1	2	3	4	5
Labeling	1	2	3	4	5
Dry and cold storage	1	2	3	4	5
Quality control	1	2	3	4	5
Sanitation	1	2	3	4	5
Delivery	1	2	3	4	5
Designing efficient pack area and equipment	1	2	3	4	5

2013 Season					
10. Equipment Use	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence

			competency		
Core Competencies					
Hand tool use and maintenance	1	2	3	4	5
Sourcing equipment	1	2	3	4	5
Tractor safety/emergency procedure	1	2	3	4	5
Basic tractor operation	1	2	3	4	5
Routine maintenance	1	2	3	4	5
Determining equipment needs	1	2	3	4	5
Additional Competencies					
Equipment repair	1	2	3	4	5

	2013 Season				
11. Farm design/management	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Assessing and purchasing farm land	1	2	3	4	5
Creating an annual budget	1	2	3	4	5
Production record keeping	1	2	3	4	5
Financial record keeping	1	2	3	4	5
Business organization (i.e. LLC, sole proprietorship, etc.)	1	2	3	4	5
Legal considerations	1	2	3	4	5
Insurance	1	2	3	4	5
Determining cost of production	1	2	3	4	5
Writing a business plan	1	2	3	4	5
Field and waterway layout	1	2	3	4	5
Buffer zones	1	2	3	4	5
Organic certification	1	2	3	4	5
Additional Competencies					
Holistic farm management	1	2	3	4	5
Biodynamic certification	1	2	3	4	5
Computer literacy	1	2	3	4	5
Woodlot management	1	2	3	4	5
Prairie management	1	2	3	4	5

	2013 Season				
12. Marketing	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Identifying and developing markets	1	2	3	4	5
Naming your farm for image	1	2	3	4	5
Determining your niche	1	2	3	4	5
Customer service/outreach	1	2	3	4	5
Invoicing	1	2	3	4	5
Pricing	1	2	3	4	5
Additional Competencies					
Newsletter	1	2	3	4	5
Branding	1	2	3	4	5
Signature crop	1	2	3	4	5
Online presence	1	2	3	4	5

	2013 Season				
13. Labor Management	No exposure	Some exposure	Some exposure and some competency	Functional competency	Advanced competence
Core Competencies					
Determining needs	1	2	3	4	5
Interviewing	1	2	3	4	5
Determining compensation	1	2	3	4	5
Payroll taxes	1	2	3	4	5
Workers compensation	1	2	3	4	5
Employer legal responsibilities	1	2	3	4	5
Delegating tasks	1	2	3	4	5
Evaluation and feedback					
Training					
Legal aspects of volunteers and interns					
Teaching commitment to interns					
Additional Competencies					
Job descriptions	1	2	3	4	5

This document is a product of the Farm Beginnings® Collaborative.

The Farm Beginnings® Collaborative is a national alliance of independent regional groups of farmers and farmer-training support organizations working together to promote Farm Beginnings, a farmer training model that is community-based, rooted in sustainable principles, and farmer-led.

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	Block, Frazier		Bradstock, Jill		Cline, Brad		Fullerton, Rory		Hollington, Thane		Marshall, Cary		
	start	finish	start	finish	start	finish	start	finish	start	finish	start	finish	
FERTILITY AND SOIL MANAGEMENT													
planning soil building crops	40	1	3	20	2	3		3	60	1	4	3	20
planting and managing soil building crops	20	1	2	20	2	3		4	60	1	4	2	20
understanding basics of soil health	20	1	2	0	3	3		3		1		4	20
crop incorporation	20	1	2	20	2	3		3	40	1	3	2	20
Organic matter management	20	1	2	40	2	4		3		1		4	20
Understanding soil testing	20	1	2	-20	3	2		3				3	0
Managing off-farm inputs (compost, fertilizers, minerals)	40	1	3	0	2	2		2	60	1	4	3	20
Fundamentals of composting	0	1	1	0	4	4		4		1		4	0
Hand-built compost	40	1	3	0	4	4		4	40	1	3	4	20
Manure windrows	0	1	1	0	1	1		1		1		1	40
Living mulch systems	0	1	1	20	1	2		2		1		3	20
Foliar feeding	0	1	1					4		1		5	0
Compost and plant-based teas	0	1	1	20	2	3		4	40	1	3	4	0
Vermiculture	0	1	1	20	2	3		2		1		3	40
BED AND FIELD PREPARATION													
Primary tillage/incorporating organic matter	20	1	2	0	3	3		3	60	1	4	3	0
Secondary tillage/seed bed preparation	20	1	2	0	2	2		2	40	1	3	1	20
Tractor/implement use	0	1	1	0	3	3		1	40	1	3	2	0
Rototiller use	0	1	1	0	4	4		3		1		4	0
Raised beds	0	1	1	0	4	4		5	40	1	3	4	0
Plastic mulch	0	1	1		1			1	40	1	3	1	0
PLANT CARE AND CULTURE													
Vegetable crop planning	40	1	3	0	2	2		4	40	1	3	4	20
Cultivar selection	40	1	3	0	2	2		3		1		4	0
Understanding cultural needs of crops	20	1	2	0	3	3		3	60	1	4	4	0
Direct seeding	20	2	3	0	3	3		4	60	1	4	4	20
Transplanting	40	1	3	0	3	3		4	60	1	4	4	20
Crop rotations	40	1	3	0	3	3		4	40	1	3	2	20
Spacing considerations	20	1	2	0	3	3		4	60	1	4	4	20
Succession planting	0	1	1	0	3	3		4		1		2	40
Basic concepts of plant botany	0	1	1	0	3	3		3	40	1	3	4	20
Climate control/shading	0	2	2	0	3	3		3	40	1	3	3	20
Support structures for plants	0	1	1	0	3	3		4	40	1	3	4	0
Pollinating	20	1	2	0	3	3		3	40	1	3	4	0
Grafting, pruning, and training	0	1	1	0	3	3		2	40	1	3	2	0
WEED MANAGEMENT													
Weed identification	20	2	3	0	4	4		2	60	1	4	2	20
Understanding culture of weeds	40	1	3	0	4	4		2	40	1	3	2	20
Hand tool cultivation	0	1	1	0	4	4		2	60	1	4	3	20
Mechanical cultivation	0	1	1	0	4	4		1		1		3	0
Reducing seed sink	0	1	1	0	4	4		1		1		1	0
Mowing	0	1	1	0	4	4		4	80	1	5	5	0
Flame weeding	0	1	1	0	2.5	2.5		1		1		3	0
Intercropping	0	1	1	0	2.5	2.5		1		1		2	20
Stale bed making	0	1	1	0	1	1		1		1		1	0
Natural and plastic mulching	0	1	1	0	3	3		2		1		4	20
PEST AND DISEASE MANAGEMENT													
Designing healthy crop rotations	20	1	2	0	2	2		3		1		2	20
Pest identification	20	1	2	0	2	2		3	60	1	4	3	20
Application of pest control inputs	20	1	2	0	2	2		3	60	1	4	3	20
Disease scouting and monitoring	20	1	2	0	2	2		3	40	1	3	3	0
Pest scouting and monitoring	20	1	2	0	2	2		3	40	1	3	3	20
Beneficial insects	20	1	2	20	2	3		3		1		4	0
Beneficial insect habitat	0	1	1	20	2	3		3		1		3	0
Designing biodiverse systems	0	1	1	20	2	3		2		1		4	0
Trap cropping	0	1	1	0	1	1		2		1		1	0
Barrier pest control	0	1	1	-10	1.5	1		2		1		3	0
GREENHOUSE MANAGEMENT													
Planning seeding schedule	20	2	3	0	2	2		2	40	1	3	2	20
Understanding planting media	20	1	2	0	2	2		1		1		3	20
Fertility in greenhouse	20	2	3	0	2	2		1		1		2	0
Germination techniques	20	2	3	0	2	2		2	20	1	2	4	0
Direct seeding techniques	20	2	3	0	2	2		2	40	1	3	4	40
Transplanting	40	1	3	0	2	2		2	60	1	4	4	20
Judging water needs - watering	20	2	3	0	2	2		2		1		4	40
Hardening off	0	1	1	0	2	2		2				3	0
Pest/disease management in greenhouse	0	1	1	0	2	2		1		1		3	0
Heating and venting a greenhouse	0	1	1	0	2	2		1		1		2	0
Building a greenhouse	0	1	1	0	1	1		1	60	1	4	2	0
Making soil mixes			1					2		1		4	20

PROJECT SIX

Project Title: Increasing Opportunities for Socially Disadvantaged Farmers
Project Partner: United Farmers USA

Project Summary

United Farmers USA (UFUSA) is proud to say that we are dedicated to obtaining our goals in helping small farmers retain their land, improve the quality of their lives and ultimately assisting them to becoming successful and profitable business persons producing specialty crops. UFUSA is provides outreach services, training and support programs in our communities and surrounding areas. UFUSA are also provides technical assistance including educational programs and resources to assist small farmers.

Through these grant funds, United Farmers USA was able to provide the opportunity for outreach activities and education to Socially Disadvantaged Farmers, Beginning Farmers, Ranchers, Landowners, Veterans, Unemployed and Youths throughout South Carolina's Soil Conservation Districts 1-6. United Farmers USA is a non-profit organization dedicated to helping the small farmer succeed by providing a wide range of resources and assistance to them.

Project Approach

Specifically, the objective was to provide orientation and training to 225 participants who are considered to be socially disadvantaged, beginning farmers of specialty crops, or youths who are thinking about becoming growers of specialty crops. This objective was met have met and the goal was exceeded: we have provided Specialty Crop Orientation/Training to 270 participants. The participants were persons that had contacted United Farmers USA to seek help, or find out more information about farming. The majority of the participants have been African American.

Four educational meetings were conducted in the months of August 2011 and April, June and July 2012. The meetings were conducted for 2 days; each day with 8 hours of classroom instruction on the basics of planting and growing Specialty Crops successfully. Examples used included squash, zucchini, watermelons, cantaloupes, and tomatoes. The meeting agendas were boosted by special guests from Clemson University's Extension and SC State's 1890 Program, who served as instructors.

The agenda was very similar for each of the four workshops. In the morning, the participants would hear presentations on topics that are broad, and applicable to running a small farming operation successfully. These topics include Risk Management, Record Keeping, Filing Taxes, Loan Applications, and the Farm Census. During the afternoon, those present divide into groups with 4-5 participants in each group. These smaller groups then participate in different demonstrations which were being led by our guest presenters. Drip irrigation, food safety, equipment safety, proper seed planting, collecting soil samples and weed maintenance were topics during the afternoon sessions. Each group spends time rotating between the different topics. It proves to be more

beneficial to have the smaller groups interact within themselves and the speaker when the discussion is more in tune with actual farming skills. All topics, discussions and demonstrations are based on the production of specialty crops.

United Farmers USA provided funding for 3 Outreach Specialists and 1 Outreach Coordinator that assisted the Project Manager in performing the scope of work in accordance with the grant. All personal data pertaining to these participants will be maintained by United Farmers USA's Information Technology Division.

It was very exciting for these individuals to participate in the Specialty Crop outreach and training. The Outreach Specialists provided current information and instructive handouts on Specialty Crops and USDA's Programs that could be shared with others and maintained by this population for future use. The Outreach Specialists continued with monthly visits with the participants to discuss the progress of their plantings, and also to provide mentoring to those in the program.

United Farmers USA reworked their website to improve their social media image. The new site is up to date, and provides those who visit the site the ability to receive more information about the '2501 Outreach Program', the 'Small Farmers and Ranchers 12 Step Program', and has live links to the USDA, USDA Rural Development and the SCDA.

Project Approach/Work Plan

With limited funding provided, UFUSA was not able to do more than what was outlined in the approved work plan. For the project to be successful training manuals were developed to give to those who attended the educational classes and training sessions. Surveys were always given out at different meetings or workshops to those who attended. Travel expenses were given to farmers who attended a workshop for specialty crop training.

To better provide services in our community, UFUSA involved its volunteers and workshop participants in the four different meetings at no cost to the budget of this project.

The following activities took place to achieve the goals of this project:

- Conduct 1st Open House/Field Day Visit (134 persons)

Held during the spring, summer or fall months when participants are taken to look at other farms in South Carolina to get a glimpse of how farmers are growing and selling specialty crops.

- Conduct 2nd Open House/Field Day Visit (146 persons)

Held during the spring, summer or fall months when participants are taken to other farms in South Carolina to get a glimpse of how farmers are growing and selling specialty crops.

- Collect soil samples before Specialty Crop to be planted.

All 270 participants were taught how to collect soil samples to be sent to Clemson Extension to see what type of specialty crops can be planted on their land.

- Prepare site and plant Specialty Crops seeds/plants

Once the farmers have gotten back their soil analysis they returned to an educational class or had a one on one meeting with outreach representative to determine who will be growing what crop based on what they can grow on their land. This is done to avoid growing an abundance of the same produce in the same area. All 270 participants did this.

- Harvest crops, follow up visits, complete Surveys

When the specialty crops were ready to harvest, each participant (270) received follow up visits from the Outreach Representative and/or program manager. These visits were used to observe if the grower is being successful at producing the specialty crop.

Surveys were given to each of the participants to determine if what they learned benefitted them, to find out if they learned everything they felt they needed to be successful in growing specialty crops, etc.

- Evaluate outreach/education training

The initial project goal was to educate and train 300 socially disadvantaged farmers with 50 being new and beginning farmers and 100 youth included in this total. United Farmers USA was able to educate 137 seasoned farmers on specialty crops who considered growing specialty crops. Outreach was done via mail-outs, emails, phone calls, flyers, word of mouth to community organizations, churches, and seed/plant stores and face to face with farmers in 5th and 6th districts. Educational trainings had 30 or more in attendance.

Goals and Outcomes Achieved

The goal was to provide 225 members of the socially disadvantaged population with educational outreach activities to increase their knowledge about the production of specialty crops. This goal was exceeded, as 270 members of this community were positively affected by the project.

The survey of participants in the program revealed:

- 35% have never grown specialty crops
- 50% more will plant specialty crops in the coming years
- 30% will continue to participate in UFUSA training programs
- 15% own their own land; 25% lease the land they farm
- 70% of those growing specialty crops, grow vegetables only

The surveys asked for the person's name, address, phone number, gender, age, marital status, race, education and employment status. Questions that asked if they farmed, if

they were interested in doing specialty crops, if they were familiar with USDA programs, if they had attended any USDA Agricultural sessions, and crops they were farming. Yes pre and post educational surveys were conducted.

- Results----234 signed in 200 completed pre-test, 137 completed post-test, and 275 completed the surveys.

Pre-test and Post-test questions asked them if they knew what specialty crops were, if they knew who their extension person was, if they knew what the USDA agency acronyms (NRCS, FSA, NASS, etc.) stood for, if they knew who to contact for USDA resources.

The pre-test revealed 70% did not know who their extension person was, who to contact for USDA resources, what the acronyms stood for and 50% did not know what specialty crops were. The post-test revealed 90% knew who their extension agent was, who to contact for USDA resources, what the USDA acronyms stood for and what specialty crop are.

Beneficiaries

The more than 250 socially disadvantaged farmers who have been elevated and their education about the production of specialty crops has been enhanced.

The socially disadvantaged farmers benefitted from this project by obtaining an ongoing network with USDA Agencies (they know who represent their area and who to contact, community organization)s and farmers in areas outside of their local offices. They gained a wealth of knowledge on growing specialty crop, the benefits of growing specialty crops and success of growing specialty crops.

Lessons Learned

There are a lot of people in the rural areas of SC who crave information and knowledge as to how to better their incomes by producing specialty crops. By continuing to educate and train these farmers on the importance and value of producing specialty crops; which will be cost saving and profitable to them, in addition to impacting the health of many SC consumers is the ongoing goal of UFUSA.

Contact Person

Hezekiah Gibson, President UFUSA South Carolina

803/696-4220

www.unitedfarmersusa.org

PROJECT SEVEN

Project Title: Small Grant Program to Assist Community Based Farmers Markets

Project Partner: SC Association of Farmers Market/SCDA

Project Summary

The project allowed the SC Association of Farmers Markets to build on the achievements that were accomplished with funds from the previous Specialty Crop Block Grant Program Agreement #12-25-B-1093.

The purpose of the project was to expand the flexibility of, and access to, wealth building opportunities for area specialty crop growers and to improve the connections between these growers and the community. The goal was to increase the competitiveness and profitability of the local food industry by building stronger farmers markets across the state. Also, the project promoted health and wellness through demonstrating the relationships with healthy eating habits and by eating locally grown fresh fruits and vegetables. The funds provided an opportunity for markets (particularly those markets that are located in the smaller communities) to enhance their marketing program, and promote the sales of fresh locally grown fruits and vegetables. The promotional activities raised the awareness about the availability of locally grown fresh fruits and vegetables along with the day and time that market is operating, and some ideas about what produce are available.

The project rose out of a need for the local community based farmers market to provide locally grown products to their surrounding populations. The project manager strove to increase the awareness of the need for local, well-promoted farmers markets that truly provided locally grown specialty crops to citizens. Many markets have been lacking in support in the form of enforcement of “local” production rules and “marketing and promotion” as a source of high quality fresh fruits and vegetables as well as other nutritious ag products.

Project Approach

The number of market managers applying for a mini-grant to promote the availability of locally grown fresh fruits and vegetables fluctuates from year to year.

The continuation of this project has provided funds to specifically promote specialty crops at up to eight community based farmers markets in SC. None of the markets had received mini-grant funding in previous years. Each successful community based farmers market can directly benefit more than 200-300 low-income nutritionally at risk families in the community. This project also benefitted consumers of all income levels, and it has indirectly benefitted those with Supplemental Nutrition Assistance Program (SNAP) Cards, who will be able to buy locally grown fresh fruits and vegetables in their neighborhoods or nearby. Many of these residents reside in rural areas where there is not a retail grocery store. Additional instructional activities for both adults and children, focusing on hands-on learning and healthy eating practices was also encouraged for the market managers to consider and tools for community building blocks.

The success of the project was be measured by three indexes; 1) the increase in the number of shoppers visiting the markets, 2) the increase in the number of farmers selling fruits and vegetables at the farmers markets, and 3) the increase in sales of specialty crops for these farmers. The market managers' 2012 count of shoppers at the market will be used as the benchmark to evaluate the performance of this grant in terms of the increase in the number of shoppers visiting the market. Prior to reimbursements being made, the market managers had to provide a report to the SCDA/Project Manager and state if these goals were made. The reports were individually submitted by seven market managers. All seven markets reported increased sales of specialty crops by vendors. Most vendors reported that they sold out of their fresh fruits and vegetables prior to the end of the market day.

Grant funds were expended in various forms; some used the monies to purchase banners that read "Fresh Fruits and Vegetables for sale at ___ Farmers Market", flyers to stimulate interest in the community markets and also to pay for the ongoing information regarding what produce and fruits were available as the season progressed, special sampling opportunity notices, cooking demonstrations, etc. To be sure the funds were spent within the guidelines of the SCBGP funding, the market managers were required by the SCDA to sign a Memorandum of Understanding, which clearly stated all monies were to be used towards mechanisms to increase the sales of specialty crops at the community based farmers markets. Also, the market managers had to supply the Project Manager with "proofs" of the banners, signs, advertisements, etc. prior to having these materials printed, so that the Project Manager could approve them. Only those costs receiving prior approval from the Project Manager received reimbursement.

The project manager will collaborate with the SC Association of Farmers Markets and the SC Department of Parks, Recreation and Tourism to help disseminate information about the community based farmers markets about the availability of fresh fruits and vegetables. This effort will enhance the visibility of the community based farmers markets which will increase the farmers' opportunity for additional sales.

Goals and Outcomes Achieved

Eight markets completed the proposal to apply for a \$1000.00 mini-grant, but only seven submitted the required reports to receive the grant.

The type and volume of promotional activities the markets conducted were reviewed. The market's agreement included a requirement to the SCDA for review the increase in the amount of sales for the specialty crop producers as well as the number of shoppers at community based farmers market. The reports were collected, with the following outcomes:

- 88% of the vendors were specialty crop producers. Items sold included tomatoes, squash, radishes, a variety of beans, hydroponic lettuce and tomatoes, potatoes, sweet potatoes, winter season greens, a variety of berries, pecans, persimmons, paw paw, Asian pear, muscadines/scuppernongs, apples, peaches, honey, and ornamental plants and herbs for consumption. Note, as not 100% of the vendors are fruit and vegetable vendors, the market managers must also use other sources of funding to offset the marketing expenses of the market. These monies are

mostly from stall fees the market collects from each vendor present during the market day. After identifying the duality in the markets, and the increased susceptibility of mis-handling the funding these markets receive from the \$1000 mini-grant program, the SCDA and the Project Manager began requiring for the market managers to sign the MOU with the SCDA, as well as also making the program retroactive in payment activities.

- Two vendors secured restaurant contracts for direct sales for all the produce they could provide the establishment for the remainder of the season. This is a huge success for these growers.
- The goal was for each specialty crop vendor to increase their sales to up to \$200 per market. Each vendor responding to the survey indicated that sales exceeded this goal, and in many cases, their expectations. The size of these markets vary from 23 specialty crop vendors (the largest) to 12 specialty crop vendors (the smallest); the total number of specialty crop growers impacted by the positive results of this program is 83.
- The average total direct economic impact on the specialty crop producers was \$4200 per season. During the peak portion of the season, in late July and early August, this average increased to over \$6000 in direct impact on farm families in rural areas of SC. This comes to an average of \$3750 per producer for the season.
- Typically, a community based farmers market in SC can expect between 350-400 visitors per week. The average attendance increased 15% this past season. The project target was an increase in over 650 shoppers per week. This number was originally projected as a result of other, more larger and predominant community markets in the state (those centered in higher population areas, such as Charleston) that were involved in previous funding years, and had the numbers taken from their data. This year, the seven markets participating in the mini-grant program were smaller markets than those participating in previous years. The discrepancy from the approved project plan and the data reported is a result.

The market managers were encouraged to engage the local offices of the Farm Credit Agency who serve farmers in all of the counties. Twenty six (26) community based farmers market managers became proactive and established a relationship with either AgSouth Farm Credit or Arbor One Farm Credit who will help the markets as they continue to promote specialty crops in regions of the state. These new relationships will aid in the sustainability of the markets.

The market managers have developed a better understanding of the overall economic and social impact that the farmers market have on the community. The realization of the contributions of the market also help the manager to understand why it is important to promote the farmers market the farmers will market through multiple marketing channels. The market managers have also developed the skills to engage the community leaders and supporters of the farmers market. They will also become better at recruiting farmers to support the market to help the community maintain a vibrant market that will provide a place for families to gather for fellowship and have fun as they buy locally grown fresh fruits and vegetables.

In an effort to better serve the buying public in a timely manner and to also be beneficial to changing and mobile consumers, a website for the SC Association of Farmers Markets was developed instead of getting a lot of materials printed which will likely be outdated or need to be changed after they are printed. The website enables rapid changes and the posting of important notices, special events that multiple markets are participating in can also be posted to the website as a general promotion for markets. The members and the general public will be able to get access to current information instantly. The website went live in June 2013 and there has been a steady increase in the number of people visiting the site, in fact the average monthly visits to the website have reached 561.

Beneficiaries

The specialty crop farmers who benefitted from the project in the rural areas, and the consumers of the fresh fruits and vegetables purchased are the beneficiaries. A total of 83 specialty crop vendors from the seven community markets directly benefitted.

As market managers enjoy the success of getting more shoppers visiting the farmers market it will likely create an atmosphere that will support more social activities that are community and family oriented at the markets which will ultimately also attract more visitors to the farmers market.

Lessons Learned

Monitoring the markets to ensure compliance took more time than originally anticipated. Most vendors/farmers were pleased, and offered thanks for support through the Certified SC Grown program. However, the few that were encouraged to leave the market as vendors provide challenging situations for the management.

Running a farmers market every week is very hard work, is time consuming, and is often thankless. Successful markets are going to require some sort of ongoing funding, either through municipalities or other outside organizations to support a market manager's position.

The buying public love the idea of locally grown food, and thrive on being able to talk with the producer of the fruits and vegetables they are carrying home. The community based farmers market have become great social outlet as well as a place to buy food.

Many of these markets cannot advertise enough. No matter how many ads, or what type of ads ran, there were still many people in the community who do not know these markets exist.

The best way to increase sales of produce are to offer free tastings. Vendors who allowed customers to taste the fruits and vegetables for sale inevitably sold out of all stock before the end of the market that day. Also, cooking demonstrations featuring produce when in season, invariably increase sales as well.

Contact Person

Weatherly Thomas, SCDA Small Farms Marketing Specialist

803-734-2210
wthomas@scda.sc.gov

PROJECT EIGHT

Project Title: Statewide Fruit and Vegetable Consumer Marketing

Project Partner: SCDA, Sonny Dickinson, Project Manager

Project Summary

The objective of the project was to implement several marketing tools in an effort to reach SC consumers with the message to buy “Certified SC Grown” fruits and vegetables. The Certified South Carolina Grown program is an exciting cooperative effort among producers, processors, wholesalers, retailers and the South Carolina Department of Agriculture (SCDA) to brand and promote fresh fruit and vegetables grown in South Carolina. Our goal is for consumers to be able to easily identify, find and buy South Carolina produce, and ultimately support the growers in the state. This project showcased locally grown produce and provided marketing tools to influence the consumer’s ability to make an informed purchasing decision. These efforts were aimed at increasing demand for locally grown fruits and vegetables, resulting in an increase in sales volume of these specialty crops during the promotional season.

The Certified SC Grown branded logo is:



Any other foods produced in South Carolina (dairy, protein, eggs, value added items), are qualified to be marketed under the Certified SC Product logo. The SCDA monitors both programs, and is judicious in its separation of the two. All Certified SC Product funds are obtained from the appropriated marketing dollars approved by the SC General Assembly. The programmatic funds needed to operate the Certified SC Grown branding component are made from Specialty Crop Block Grant Funding, Specialty Crop Commodity Boards, and also appropriated dollars from the SC General Assembly.

The Certified SC Product branded logo is:



Project Approach

The ongoing approach has been to address the need to promote sales of Certified SC Grown specialty crops by the utilization of a “branded” merchandising approach for retail supermarkets. All point of purchase (P.O.P) items created using funds from the Specialty Crop Block Grant Program are only those bearing the Certified SC Grown logo. Because these efforts are continually growing, and the branding campaign encompassed more

retail outlets than ever before, these funds are also supplemented by the appropriated marketing dollars of the SCDA. The merging of these two founding sources has enabled the SCDA to continue the successful growth of the Certified SC Grown campaign.

Annually, the SCDA has entered a contractual agreement with a company composed of a team of trained merchandisers to distribute and place “Certified SC Grown” signage only in the produce departments of 556 retail stores located in SC. These measures were taken in order to help consumers identify “locally grown” produce so that sales of SC Grown fruits and vegetables would increase.

In a recent survey conducted by the SCDA, consumers indicated a desire to make informed purchasing decisions about where their food was produced. The Certified SC Grown logo, which is utilized by both the growers (on boxes, clamshells, and other packaging) and the retailers (signs, P.O.P. materials, advertisements), enforces the consumers’ need for knowledge by providing clear marketing guidance as to which fruits and vegetables are grown in SC. Also, the program enables a platform for retailers to alert the buying public that the main produce harvest season has begun within the state.

The primary season for the Certified SC Grown merchandising efforts starts in March, and ends in mid-May. During this time, the merchandising team will have placed P.O.P. material featuring the Certified SC Grown logo in 556 stores’ produce departments with an average of 35 stock keeping units (SKUs) addressed in each outlet. Significant results have been accomplished from these measures of securing the merchandising team. For example: over 22,000 pieces of signage was placed during this period by the merchandising team. Retailers were also given replacement P.O.P. The retail managers and produce employees have cooperated with the SCDA branding program by restocking approximately ½ or 11,000 pieces. This totals 33,000 of P.O.P. branding materials that were placed for consumer recognition of locally grown fruits and vegetables for purchasing.

During the placement periods the merchandising team members are focused only on fresh produce. Signage is designed as “SC Grown” and call reports are submitted for review on each retail store. Merchandisers are instructed to place P.O.P. materials in produce departments only. After placement is made by the merchandising team member, the store manager on duty is required to inspect the placements of the P.O.P. and signage for accuracy. This requirement is twofold; the store manager sees that the Certified SC Grown signage is put only in the produce section, only by SC grown fruits and vegetables, and that the signage is also in compliance with that retail chains’ corporate approved merchandising agreements. At this time, the store manager on duty is required to sign the call reports, and provide the time and date. Without this signature, the merchandising team member cannot receive payment for visiting the store and executing the job. The Project Manager, at the conclusion of all 556 stores being merchandised, receives a report from the merchandising company responsible for executing this work, and reviews it for compliance purposes. Historically, the merchandising has gone smoothly. However, there are rare cases in which the store manager did not allow one or

more of the pieces to be placed. In these instances, the Project Manager personally reached out to that store manager, and found an equitable solution for both parties.

In polling retail senior management of various retail chains, 99% agree that placement of P.O.P. pieces throughout the produce section identifying the items grown in SC, lets the consumer know the produce is indeed “local”, supports the decision to purchase, and sales of these specialty crops are increased. The signage also helps to provide healthy alternatives for overweight consumers as well as continued fare for the health conscious patrons.

SCDA marketing personnel, and the Project Manager, have regularly visited retail stores and other direct marketing outlets during the project period to insure point of purchase materials placement compliance. All advertising campaigns, and branding materials are created and approved by the SCDA, and are also signed off for purchase by the Grant Administrator to ensure that programmatic funds are only spent on the Certified SC Grown campaign. Only the monies appropriated for the marketing funds of the SCDA go towards to further the Certified SC Product campaign.

Different advertising slogans are slightly altered each year (by the SCDA marketing staff and the key retail chain merchandisers) to keep the consumers engaged in the “Certified SC Grown” marketplace. Radio messages were developed in conjunction with the retail stores for in-store advertisements that featured the fresh fruits and vegetables available for purchase. For example, Commissioner Weathers worked with the Piggly Wiggly of the Carolinas, LLC chain to record an in-store message about the tastiest and freshest Certified SC Grown peaches that were in season. Both the peach grower supplying the peaches to Piggly Wiggly, and the produce sales manager for the chain reported that more volume had been sold this season than in any of the previous five seasons. A record 34% increase in sales volume was reported.

Traditional radio advertisements were used to reinforce the Buy SC Grown brand and to inform consumers of specific market opportunities and specialty crop availability during seasonal peaks. It is recorded that radio spots with the message to support SC Grown aired 427 times across the state, during the summer months. The football season brought 2624 radio spots on the collegiate sports networks across the state. These radio spots were used to incorporate tailgating food ideas into the consumer’s mind. Some of these recipe ideas were SC Grown Collard Dip, SC Grown Kale Salad, SC Grown Coleslaw, and SC Grown Peach Cobbler. The radio ads directed the listeners to the www.CertifiedSCGrown.org webpage, as well as the SCDA Facebook Page for the full recipes. The costs of these ads were matched 50% with appropriated funding, as not all recipes were exclusive to those of specialty crops. Other items, such as SC Grown Boiled Peanut Hummus, SC Pork Products, SC Certified Chicken Bog and SC Certified Seafood Gumbo were also promoted during the football season in the fall.

Outdoor boards were used to remind consumers daily to buy Certified SC Grown fruits and veggies. Below is one example used.



Eight large outdoor boards were leased along the more predominate roadways in the state. The daily effective circulation for these boards totaled 234,339. The value of the number of total impressions was greater than 10,000,000.

Specific farmer's market promotions and events provided an avenue for collaborative efforts between the specialty crop commodity organizations and the SCDA. These special market days, called "Peach Day" and "Watermelon Day" were designed to promote these fruits in their season to increase demand and local sales volume. The days were promoted on social media outlets, and through radio and press releases. All regular market vendors were told about the promotion days prior to the date, so that most of them were able to concentrate on having more product for sale on these days. The crowds were overwhelming, and most of the vendors at the market sold out prior to noon on each day, respectively. To assist the vendors on these special days, members of the SCDA marketing staff were on hand at the market giving out recipe cards, nutritional facts coloring sheets, harvest guides, and information about the best way to store and prepare these fruits.

Goals and Outcomes Achieved

- 98.9% of all 556 targeted stores were merchandised. The retail support for replenishment was 100%.
- Marketing personnel regularly visited the retail stores during the project period to insure compliance of POP placement and to review the progress of the promotions with the produce sales team members.
- Reported sales volumes were verified by the produce directors at retail executive level showed a more than 15% average sales increase in sales of specialty crops during the harvest season. The Stock Keeping Units (SKUs) which were the highest sellers (increased sales to reference in previous years) were peaches, tomatoes, kale, sweet onions, squash and cabbage. Blueberries, and spring strawberries both experienced a sales volume loss compared with previous years. This however, is most likely to do with the higher price of the product, and that they had a shorter selling season because of inclement weather.
- Average number of shoppers/day at the farmers markets increased at all the markets; declines were seen in adverse weather conditions. The 2013 summer was unusually cool, and had higher than normal rainfall, setting new records in

many locations across the state. As a result, shopping patterns of consumers were atypical, but customer loyalty remained strong.

Lessons Learned

Planning the P.O.P. material distribution is the key step to successful distribution. The retail kits should be made/collated well in advance, and in adequate quantities. Personnel need to be trained on the retail call procedures. Also, communication from the retailer community to the store level produce employees needs to be monitored prior to coverage.

Having one specific day or a weekend of days at the Farmers Markets to celebrate the Certified SC Grown fruits and vegetables may be more advantageous than dividing the days into separate commodities. The SCDA Marketing staff will be discussing the pros/cons of this idea throughout the winter months. Multi-days brings people out on different days during the harvest season, but having a singular, larger weekend long event may be more impactful.

Beneficiaries

The specialty crop producers of South Carolina are the key beneficiaries of this project. There are more than 450 specialty crop producers who sell in the retail/wholesale and food service marketplace on a regular and consistent basis.

Contact Person

Sonny Dickinson, Assistant Director for Marketing, SCDA
sdickinson@scda.sc.gov
803-734-2210 or 803-960-0441

PROJECT NINE

Project Title: Organic Farming Conservation Outreach Project

Project Partner: Carolina Farm Stewardship Association

PROJECT SUMMARY

The overall objectives of the Organic Farming Conservation Outreach Project (OFCOP) were to improve the competitiveness of South Carolina organic/transitioning producers by providing NRCS with the tools to better implement conservation practices on organic/transitioning farms. Furthermore, the OFCOP provided transitioning producers with the tools needed to transition to certified organic and provide certified/transitioning producers with a mechanism to maintain production records in order to retain organic certification.

Goal 1: Increase access and utilization by organic/transitioning producers of NRCS EQIP-OI cost share programs.

Goal 2: Increase number of SC producers transitioning to organic production in order to take advantage of new markets for organic specialty crops.

The Organic Farming Conservation Outreach Project (OFCOP) enhances the competitiveness of South Carolina farmers in the rapidly expanding market for organic fruits and vegetables and other specialty crops. Federal cost share programs for adopting organic farming practices, such as the EQIP-OI, are a huge opportunity for South Carolina specialty crop producers to improve their competitiveness in the organic food market. A 2012 survey of state NRCS personnel nationwide found that 89% of states need assistance in implementation of conservation practices on organic farms, and that lack of soil and water conservation staff expertise in organic systems is a major barrier to successful implementation of the EQIP-OI. To address these needs, CFSA implemented OFCOP in South Carolina beginning in 2011 to enhance the competitiveness of South Carolina farmers in the rapidly expanding market for organic fruits and vegetables and other specialty crops. OFCOP leverages the Environmental Quality Incentives Program (EQIP) Organic Initiative (OI) to provide financial and technical assistance for organic and transitioning-to-organic farmers. Additionally, OFCOP provided training for specialty crop farmers wanting to become certified organic. Specifically, OFCOP accomplished:

- Certified a CFSA staff member as a Technical Service Provider (TSP) and promoted the EQIP-OI cost share program to SC producers.
- Reviewed job scenarios and payment schedules for ten EQIP-OI practices most relevant to organic specialty crop production.
- Developed technical fact sheets to be included with ten job scenarios in order to provide district conservationists and organic and transitioning producers with technical information on how to implement specific conservation practices in organic systems.
- Prepared Conservation Activity Plans Supporting Organic Transition (Cap 138) for two organic/transitioning producers.
- Hosted four training sessions on organic production practices and conservation activities specific to organic production to 100 producers, NRCS employees, extensions agents, and soil and water conservation personnel.

PROJECT APPROACH

The primary beneficiaries of this project were solely specialty crop producers in SC. The job scenarios we reviewed and wrote technical fact sheets for were chosen because they 1) ranked the highest in the number of occurrences within the EQIP-OI program and 2) are specific to fruit and vegetable production.

In order to identify training needs of SC specialty crop producers transitioning to certified organic production, we relied on results from CFSA's 2012 Organic Transition Survey, data provided by CFSA's Organic Produce Market Survey, common obstacles identified by growers engaged in CFSA's organic transition consulting program, inspectors from the certifying agencies they work with, and information from growers at our regional listening session at the 2012 Sustainable Agriculture Conference (SAC). The topics and speakers identified spoke solely to the needs of fruit and vegetable production and did not cover livestock or row crop production.

OFCOP conducted four key activities to accomplish the two goals:

1. Increased access and utilization by organic/transitioning producers of NRCS EQIP-OI cost share programs by developing job scenarios and payment schedules specific to organic/transitioning operations.
2. A. Included NRCS staff on the agenda for CFSA producer-oriented trainings as trainers; and invite NRCS district conservationists to attend workshops as participants.
B. During the NRCS 2012 fall training, surveyed 30 SC NRCS district conservationists about their technical needs. The needs identified in this survey will be addressed in 2013 via technical fact sheets and guidance documents and workshops.
3. Developed guidance documents to assist in the transition to certified organic production, distributed via the CFSA website.
4. Conducted two training sessions based on organic transition guidance documents to 30 producers, interested or currently transitioning to organic.

GOALS AND OUTCOMES ACHIEVED

DELIVERABLE	STATUS/ACTUAL RESULTS
Ten (10) job scenarios and payment schedules for conservation practices most utilized by organic/transitioning farmers	<ul style="list-style-type: none"> • Reviewed job scenarios and payment schedules for Composting Facility (317), Field Border (386), Residue Management No-Till Direct Seed (329), and Mulching (484). • Drafted job scenarios for Residue and Tillage Management (329), Herbaceous Weed Control (315), Brush Management (314), Organic Cover Crop- Mixed (340), Organic Cover Crop-Legume (340), Integrated Pest Management-≤20 Mitigation (595), and Basic Nutrient Management (590).
Include NRCS staff on the agenda for CFSA producer-oriented trainings (i.e. Task 4 trainings) as trainers; and invite NRCS district	<ul style="list-style-type: none"> • Angel Sams, SC NRCS District Conservationist for Charleston Country presented information on the EQIP-OI program at the Organic Transition workshop held in Charleston, SC on Nov. 6th. • Gordon Mikell, SC NRCS State Agronomist presented on Soil Fertility management in Organic Production and EQIP-OI program information at the Organic Transition workshop held in Columbia, SC on Nov. 29th.

<p>conservationists to attend workshops as participants.</p>	<ul style="list-style-type: none"> • Organic Transition workshops were promoted to SC NRCS employees via email from Gordon Mikell.
<p>During the SC NRCS 2012 fall training, survey 30 SC NRCS district conservationists about their technical needs. The needs identified in this survey will be addressed in 2013 via technical fact sheets and guidance documents, and workshops.</p>	<ul style="list-style-type: none"> • Thirty-one SC NRCS district conservationist completed the Technical Needs Survey distributed in December 2012 during the EQIP 2012 program roll out training. • 52% of respondents do not feel that they have the necessary tools to work with organic and transitioning producers. • Respondents identified the following as training needs: National Organic Program regulations (45%), cover crop varieties for the SE (42%), high tunnel crop production (42%), soil fertility management (52%), pest management (42%), and implementing EQIP-OI conservation practices in organic production systems (52%). • Workshops (74%) were identified as the most useful format for DCs to receive training, as well as printed fact sheets (48%) and online resources (52%).
<p>50 producers will receive direct consulting, education and practical training on cost share funding opportunities for EQIP conservation practices.</p>	<ul style="list-style-type: none"> • Forty-two producers received consulting and education on the NRCS EQIP-OI training this fall during CFSA's organic transition workshops. • Nineteen producers received consulting and education on the NRCS EQIP-OI training during CFSA's Organic Certification workshop at the Sustainable Agriculture Conference. • Thirty producers received training on Best Practices in Soil and Water Conservation for livestock production during CFSA's Sustainable Agriculture Conference.
<p>Needs assessment</p>	<ul style="list-style-type: none"> • Visits to sixteen organic/transitioning farms were completed in the coastal, midland and upstate regions of SC. Attendance at two farmer meetings allowed for additional consultation and information gathering. • An online questionnaire was developed by CFSA and completed by 118 farmers. Responses were analyzed and reported to survey participants, CFSA members and the larger sustainable agriculture community through several listservs. • Survey result highlights were complimented with action items to address areas or concern and misinformation relating to certification including: certification cost share program forms/details, recordkeeping templates, interpreting NOP regulations, etc. • Participated on the SC SARE Advisory Board helping to identify critical issues, challenges and needs related to sustainable agriculture in South Carolina and develop a plan for educational/training programs to be organized in 2013 to address the critical issues, challenges and needs identified.
<p>Guidance documents to assist</p>	<ul style="list-style-type: none"> • The <i>Carolina Organic Transition Handbook for Produce Farmers</i> will be published on the CFSA website around

<p>in the transition to certified organic production</p>	<p>December 15th. 50+ existing guidance documents were compiled to be included in the handbook to address important factors to organic certification and production for horticultural operations in South Carolina. Original documents were written to fill in gaps where sufficient information has not been developed for the region or is out of date.</p>
<p>Two training sessions based on those documents to 30 producers interested in or currently transitioning to organic producers.</p>	<ul style="list-style-type: none"> • Two all-day Organic Transition training sessions were held on November 6th and 29th at the GrowFood Carolina Warehouse in Charleston, SC and City Roots Farm in Columbia, SC, respectively. Producers learned about the organic certification and inspection process, allowed and prohibited inputs, developing an Organic System Plan, effective recordkeeping, insect and disease management strategies and potential marketing options. The training at City Roots included an in-the-field discussion of organic compliance and production techniques used by a farm currently in the transition process.
<p>50 producers will be provided with the information they need to make the transition to certified organic production.</p>	<ul style="list-style-type: none"> • Through producer surveys, survey follow ups, farm visits and individual inquiries about our Organic Transition Program, we have made connections with a number of producers considering certification. To date, 20 producers in SC have received direct consultation on organic certification/production via phone, email and in person. Additionally, relevant information to clear up misconceptions about organic certification has been sent out in targeted emailing through several regional listservs that reach 170+ producers in SC. <ul style="list-style-type: none"> • The guidance documents that make up the <i>Carolina Organic Transition Handbook for Produce Farmers</i> will be available on the CFSA website (http://www.carolinafarmstewards.org/organic-transition-handbook/). • Digital copies of the handbook are currently being produced on CD and will be disseminated to participants from both training workshops and the CFSA Sustainable Agriculture Conference (SAC) organic certification workshop. We anticipate reaching 100 producers via the website by December 31, 2012.
<p>25 producers will begin the transition process.</p>	<ul style="list-style-type: none"> • Five producers we have been working with have begun the transition process.

Achievements:

- Over 1,000 unique views of the Organic Production Handbook on the CFSA website.
- Arranged for NRCS to participate at the Sustainable Agriculture Conference by leading a workshop, *Best Practices in Soil and Water Conservation through Livestock*.
- Survey results on training needs by NRCS district conservationists from 2011 were used to develop an organic production training program with Clemson University. See attachments for survey results.

- Successful outreach to several producers throughout the state to inform the development of training sessions and documents that address specific pitfalls in SC for certified organic producers.
- Engaging Clemson staff, current organic farmers, and NRCS staff to be involved in both training sessions planned in November and in selecting existing publications to include in the *Carolina Organic Transition Handbook*.
- An excellent turn out at each of the two training sessions, allowing farmers to connect with others in the SC organic community.

Lessons Learned

- Due to the huge success of outreach to producers in 2011, a large number of producers signed contracts with NRCS. Since many contracts are for three years, numbers this year are down from last year because so many of the organic and transitioning producers in South Carolina currently have contracts with NRCS. Moving forward, we need to capture and highlight the success stories of current program users, provide EQIP-OI information to producers thinking about transitioning to certified production and identify the EQIP-OI as a resource to help them make that transition.
- Job scenarios and payment schedules have been regionalized resulting in less program control on the state level. Job scenarios and payment schedules are being written in order to benefit entire regions, rather than on the state level and the South Carolina state office has less options regarding what types of jobs can be covered in each practice. We were unable to review all job scenarios offered in the EQIP-OI because they have not yet been made available. We will review them in 2013 when they are available.
- A lack of regional research and extension support on organic production to draw from in the development of the *Carolina Organic Transition Handbook*.
- SC producers' misconceptions about organic certification requirements and resulting pre-existing biases against considering certifying.
- Determining how many producers have begun the transition to certified organic production is challenging and difficult to determine this soon after our fall workshops. We have a list of all SC producers who attendee SAC, and the two other organic transition workshops, who we will contact in the spring to determine how many of them have begun the transition process.

Beneficiaries

The primary beneficiaries of this project were the operators of the state's 1,520 vegetable farms and 630 fruit farms.

As a result of our work:

- Eighty-one producers received direct consulting, education and practical training on cost share funding opportunities for EQIP conservation practices.
- Forty-two producers received training and information on how to make the transition to certified organic production via two workshops.

- Seventy-five producers will receive a digital copy of the *Carolina Organic Transition Handbook for Produce Farmers*.
- Twenty producers received direct consulting and information on transitioning to certified organic production.
- Five producers have begun the transition process.
- Seven hundred SC producers received our monthly eNews with information on organic production practices, EQIP-OI program, and training opportunities.
- Two hundred SC producers received quarterly newsletters with information on organic production practices, EQIP-OI program, and training opportunities.
- Two SC producers have applied for CFSA's direct consulting program to get assistance in transitioning to certified organic production.

Organic production and marketing is only one of many specialty crop niches available to small scale producers in South Carolina. However, much of the information that was presented at each producer training session and compiled in the *Organic Transition Handbook for Carolina Produce Farmers* will be useful in enhancing the competitiveness of producers in the broader specialty crop community as well. Training time and guidance documents developed and compiled with project funding were intended only for specialty crop producers and did not provide information about management and marketing techniques in other sectors of organic agriculture such as commodity crops, dairy or livestock production.

Producer training sessions in Charleston and Columbia were specifically focused on certification and production of fruits and vegetables. Speaker talks covered low-input disease and integrative pest management, diversified crop rotation planning, efficient recordkeeping and the foundational principles of organic systems. Each of these topics are relevant for any producer to 1) reduce input costs for production, 2) recognize and capitalize on intrinsic ecosystem services, and 3) market a product for which a growing number of environmentally- and health-conscious consumers are willing to pay a premium. Whether or not participants choose to take the certified organic marketing approach, each speaker offered an alternative perspective that will help diversify the management toolbox necessary for any successful specialty crop producer.

The *Organic Transition Handbook for Carolina Produce Farmers* includes a wealth of information on a wide range of topics that again are useful for any specialty crop producer, even those not ascribing to the purely organic approach. Approximately 60% of the handbook content is applicable for those interested in using more sustainable practices and is not limited to strictly organic production. Recordkeeping templates and tips encourage a consistent and organized system needed to track production strengths and weakness. Documents that cover identifying and managing common pest, weed and disease issues offer a wealth of information on the biology and lifecycles of specific problem species. The marketing section provides a number of key points to reduce common mistakes in the direct marketing approach employed by many specialty crop producers. The Table of Contents, in **Appendix A**, highlights documents in red that are beneficial to the entire specialty crop community – not just organic producers.

CONTACT INFORMATION

For any additional information, please contact:

Laura M. Wurts, Operations Director
Carolina Farm Stewardship Association

Phone: 919-265-8090

Email: laura@carolinafarmstewards.org

APPENDIX A

Organic Transition Handbook for Carolina Produce Farmers

Compiled by Eric Soderholm

Organic Transition Coordinator
Carolina Farm Stewardship Association

How to Use the Handbook

Organic Certification

1. *What is Organic Certification, National Organic Program*
2. *Overview of National Organic Program Requirements, Riddle*
3. *How to Pick a Certifier, Kleese*
4. *USDA Accredited Certifying Agents that Operating in the Carolinas, Soderholm*
5. *Comparison of the Major Certification Agencies in the Carolinas, Hamilton & Soderholm*
6. *Organic Certification Application Template*
7. *Preparing for an Organic Inspection, Baier*
8. *Most Common Mistakes Made by Cert. Crop Operators and/or Cert. Applicants, Riddle*
9. *Organic Certification Cost Share Program Details for the Carolinas, Soderholm*
10. *Organic Certification of Vegetable Operations, Riddle*

Recordkeeping

1. *Introduction: Tips for Successful Recordkeeping, Soderholm*
2. *Organic Vegetable Operation Record Keeping Systems, Riddle*
3. *Record Keeping Form Templates for Organic Farmers, Riddle*
4. *Organic Market Farm Documentation Forms, Born, Kuepper & Cone*
5. *Organic Orchard, Vineyard and Berry Crop Documentation Forms, Kuepper & Cone*

Allowed and Prohibited Substances

1. *Introduction: Avoiding Contamination by Prohibited Substances, Soderholm*
2. *National List of Allowed and Prohibited Substances for Crop Production*

National Organic Program

1. *Organic Materials Compliance, Baier and Gegner*
2. *Potting Mixes for Certified Organic Production, Kuepper & Everett*
3. *Sources of Certified Organic Seed and Untreated Non-GMO Seed, Soderholm*

Developing an Organic System Plan

1. *Introduction: Developing an Organic System Plan, Soderholm*
2. *Organic System Plans: Market Farms and Greenhouses, Kuepper*

Soil Fertility

1. *Introduction: The Soil is Your Greatest Resource, Soderholm*

2. *Soil Fertility on Organic Farms*, Baldwin
3. *How to Convert an Inorganic Fertilizer Recommendation to an Organic One*, McLaurin & Reeves
4. *Cover Crops for Organic Farms*, Baldwin & Creamer
5. *Using Organic Nutrient Sources*, Sanchez & Richard
6. *Cover Crops and Crop Rotation*, Hitt, Roos & Wynne
7. *Crop Rotation on Organic Farms*, Baldwin
8. *Practical Nutrient Management for Organic Vegetable Crops*, Schonbeck
9. *Composting on Organic Farms*, Baldwin & Greenfield
10. *Manures for Organic Production*, Kuepper
11. *Sources of Organic Fertilizer Inputs for the Carolinas*, Soderholm

Pest Management

1. *Introduction: Pest Management in the Carolinas*, Soderholm

Insect Pests

1. *Overview of Monitoring and Identification Techniques for Insect Pests*, Zehnder
2. *Insect Management on Organic Farms*, Linker, Orr & Barbercheck
3. *Farmscaping: Making Use of Nature's Pest Management Services*, Zehnder
4. *Top Eight Reported Insect Pests of Carolina Organic Farms*, NC Extension: AG 295
5. *Squash Bug and Squash Vine Borer: Organic Controls*, Adam
6. *Flea Beetle: Organic Control Options*, Kuepper
7. *Greenhouse IPM: Sustainable Aphid Control*, Greer
8. *Stink Bug Management Using Trap Crops in Organic Farming*, Mizell
9. *Cucumber Beetles: Organic and Biorational Integrated Pest Management*, Diver & Hinman
10. *Colorado Potato Beetle: Organic Control Options*, Kuepper

Weeds

1. *Principles of Organic Weed Management in Organic Cropping Systems*, Schonbeck
2. *Top Ten Reported Problem Weeds of Carolina Organic Farms*, VT Weed ID Guide

Diseases

1. *Organic Disease Management*, Colucci
2. *General Guidelines for Managing Vegetable Diseases Organically*, McGrath
3. *Guidelines for Managing Specific Vegetable Diseases Organically*, McGrath
4. *Downy Mildew Control in Cucurbits*, Kuepper
5. *Managing Cucurbit Powdery Mildew Organically*, McGrath
6. *Organic Management of Late Blight (*Phytophthora infestans*) of Potato and Tomato*, Stone
7. *Biopesticides for Managing Plant Diseases Organically*, McGrath

Marketing

1. *Understanding Organic Pricing and Costs of Production*, Post

2. *Tips for Selling at Farmers' Markets*, ATTRA
3. *Tips for Selling through Community Supported Agriculture*, ATTRA
4. *Tips for Selling to Restaurants*, ATTRA
5. *Tips for Selling to Grocery Stores*, ATTRA
6. *Tips for Selling to Distributors*, ATTRA
7. *Wholesale Buyers in the Carolinas*, Soderholm

Appendix B

SC NRCS District Conservationist 2012 Survey Results

The Technical Needs Survey was distributed to SC NRCS district conservationists in December 2012 during the EQIP 2012 program roll out training. The objective of the survey was to get an idea as to

What technical training needs DCs have in order to better serve organic and transitioning producers.

Survey results will be used to develop a training agenda for 2013. It is recommended that the results of this survey be shared with the organic subcommittee of the state technical committee in order for the subcommittee to collaborate on how to as best meet the training needs of district conservationists.

Forty eight percent of respondents feel that they have the tools they need to provide technical and financial assistance to organic and transitioning producers. This is an increase from those who responded to the 2011 survey, in which only 32% of respondents felt they had the tools they need to provide technical and financial assistance to organic or transitioning growers. However, 52% of respondents still do not feel that they have the necessary tools to work with organic and transitioning producers.

Respondents identified the following as training needs: National Organic Program regulations (45%), cover crop varieties for the SE (42%), high tunnel crop production (42%), soil fertility management (52%), pest management (42%), and implementing EQIP-OI conservation practices in organic production systems (52%). CFSA will try and address as many of these needs as possible through workshops and the development of technical fact sheets.

Workshops (74%) were identified as the most useful format for DCs to receive training, as well as printed fact sheets (48%) and online resources (52%). Sixteen percent of respondents said it would be helpful if they could call a help desk to speak with someone one on one.

A number of additional activities CFSA could provide to better assist DCs in providing technical and financial assistance to organic and transition producers were identified. They included farm visits w/ DCs, more guidelines for organic practices, local workshops, on farm workshops, keeping personnel up to date on new regulations as related to the NOP, providing more training to the ones applying for transition & organic, provide guidance to implementing organic practices, and continuing to allow DCs to funnel producers to varying experts.

PROJECT TEN

Project Title: Expanding Marketing Concepts, Opportunities, and efforts to buyers and consumers in National, Regional and Local Markets

Project Partner: SCDA, Sonny Dickinson, Project Manager

Project Summary

The purpose of the project was to provide the SCDA and its specialty crop producing constituents with additional tools to promote and facilitate the sale of specialty crops through traditional industry marketing channels, and to seek additional niche market opportunities for smaller volume specialty crops and organics produced in South Carolina. Large, high volume trade shows and festivals were targeted by the SCDA for involvement by the SCDA staff. Events included the Produce Marketing Association Fresh Summit, Southeast Produce Council Southern Exposure Expo, South Carolina Plant and Flower Festivals and the Eastern Produce Council. These shows offered a broad reach to potential buyers so that individual producers as well as commodity groups were able to feature Certified SC Grown specialty crops.

There is need of continued attendance/presence of the SCDA employees, as well as specialty crop stakeholders at trade shows, as that these arenas are the major vehicle to introduce, promote, educate and foster deeper seller (grower)/buyer relationships for the marketplace share of SC Grown fruits and vegetables. Expanding trade areas for SC growers is a byproduct of trade show participation, industry meeting attendance, and flower festival hosting.

In regards to the importance and timeliness of the project, two things are apparent: local initiatives have matured to take extreme advantage of timeliness. The focus on retail and foodservice is propelled by consumer demand in restaurants and grocery outlets. Consumers want and demand to know where their food is produced. The more local, the more comfortable the consumer feels about freshness and food safety in their buying decisions. It is of utmost importance for retail and foodservice decision makers to work in concert to give consumers a locally grown choice. Trade shows outside of SC provide a timely opportunity for working together to formulate plans to address in store promotions, merchandising, and consumer education as retail as well as new healthy menu additions for the foodservice sector. The results: increased sales in both sectors.

The SCDA makes it an annual priority to remain involved in the out-of-state trade shows so that all members of the specialty crop sector in the state can receive representation to the retailers/buyers present at these shows. For differing reasons, not every grower is able to attend the trade shows. The staff of the SCDA is committed to remaining neutral to all grower interests, and assisting the buyers/consumers in finding the best specialty crop producers for their establishments, and not just the ones participating in the trade shows, or being represented by their sales agents.

Previous funding for a similar project for the SCDA was made available from the Specialty Crop Block Grant Agreement #12-25-B-1093. The previous project provided a baseline for growth. Upfront investment in prior years paved the way for greater

exposure for growers/buyers during this funding cycle. As a result, there is a much deeper commitment on all sides to formulate distribution objectives and promote local fruits and vegetables at a higher rate of frequency. The completion of this goal results in the establishment of stronger sales of Certified SC Grown specialty crops by 1) special pricing via ad support and 2) aggressive displays at retail. Contacts are also made with foodservice sales representatives who depend on weekly sales sheets for their customers promoting produce with grower organizations.

The project also insured positive growth for horticultural crops by enabling the SCDA to aggressively promote the six plant and flower show/festivals at the three state owned farmers markets. These shows highlight locally grown ornamentals, herbs, and fruit and vegetable plants for sale. The events help the ornamental industry promote their activities and increase the visibility directly to consumers.

Project Approach

The ultimate goal at the retail events was to expand the influence and knowledge of all Certified SC Grown specialty crops to all levels of the supply chain: including retailers, wholesalers, and food service accounts. Pre show activity consisted of the SCDA marketing staff sending mailers to buyers, making personal phone invitations for meetings, participating in booth graphics and design appointments, and scheduling post show meetings with growers. The specialty crop growers participating in the events also conducted contact activities prior to shows with the buyers, independently of the SCDA.

The selection process for trade show participation is the same for each venue. The Executive Director of each Specialty Crop commodity board is notified about the upcoming opportunities for trade shows and industry meetings, including show/meeting dates, locations, and costs to exhibit, or ways to otherwise attend. The Project Manager attends these meetings, and discusses the opportunities that these professional venues afford to present new varieties in production, update retailers on branding campaigns for their companies, and that in return of their presence, receive educational training on current major issues that address food safety, foreign trade avenues, and overall trending channels or changes in the produce industry. Most boards and/or companies determine their participation based on location and financial obligation. New exhibitors this cycle included the SC Watermelon Association and Palmetto Sweets. Palmetto Sweets is the branded name of raw green onions that are produced in South Carolina. The Palmetto Sweets label is made up of a grower cooperative of farms located across five counties in the state. In SC, sweet green onions (similar in flavor to a Vidalia onion), have similar growing requirements as strawberries, and many farmers are now growing both side by side in the same fields. This new niche market is growing in popularity as Palmetto Sweets continues to outreach sales of Vidalia onions when they are available. New acreage is being planted each year, as growers are seeking alternatives to traditional row cropping.

Outside of the reach of the commodity associations, all other potential participants are contacted directly, in a fair and equitable process. The growers targeted are larger, progressive growers that target the higher volume retail chain stores, and food service

operations as their customer base. The smaller growers of specialty crops whose audience is more in the direct retail sales are assisted by the SCDA through other marketing efforts.

This process has steadily brought results that have been in some repeat companies and/or commodity groups representing a number of companies collectively. These participants have the overall financial stability, logistical capability, and adequate staffing to effectively represent themselves in both national and regional trade shows and meetings, and to support any current as well as new customer bases.

Those specialty crop producers who choose not to exhibit may still participate at these events by attending on individual basis. These producers are offered the opportunity to attend by taking advantage of the extra badges or registrations the SCDA receives as an ongoing exhibitor or attendee of these venues. An additional 50 specialty crop producers attended the shows in this capacity.

The SCDA marketing staff then focused their show activities on making buyer contacts, exchanging promotional materials/ideas, attending seminars on relevant topics to increasing sales, having daily recap discussions and conducting product presentations/tastings. Post show activities centered on making specific appointments for product follow up, grower visits by retail and foodservice buyer personnel. Follow up phone and email contacts with sales leads were made.

During the timeframe of this project, 5 out of state trade shows were conducted:

PMA Fresh Summit	Atlanta, GA and Anaheim, CA
Southeast Produce Council	Orlando, FL (2 years)
Eastern Produce Council	New York, NY (2 years)

The grower/commodity boards represented were the SC Peach Council, the SC Watermelon Association, WP Rawl, Coosaw Farms, Williams Farms, Richter and Company, and Chappell Farms.

Also, six plant and flower festivals were held at the three farmers markets for the ornamental producers to participate. The funding from this grant agreement was used by the SCDA to advertise for these festivals, to increase the attendance. These six direct sales events enable the participating producers to earn thousands of dollars directly, as over 100,000 persons typically visit these events on an annual basis. The purpose of these festivals are to host annual events which showcase the best of South Carolina horticulture products in central locations, making shopping ideal for the consumer wanting to support our local growers and economy.

Goals and Outcomes Achieved

Trade Show and Retail Events:

Significant results were obtained in several areas:

- Person to person contact with key buyers from leading retail food service distributors to include: Walmart, Publix, Piggly Wiggly, Foodlion, Harris Teeter, Kroger, Winn Dixie, Bilo, Associated Grocers, SYSCO, US Foodservice, ALDI,

- C & S Wholesale, Fresh Point, Ingle's, K-VA-T/Food City, Lowe's Stores, Military Produce Group, Rouses, Sobys, Supervalu, Whole Foods and IGA.
- Walmart expanded to 19 distribution centers for SC peaches; the previous representation was 12 distribution centers.
 - Distribution was obtained for watermelon and cantaloupe in Walmart, Rouses and the Military Produce Group; all of these channels were previously taken by producers from other states.
 - Fifteen key retailers committed to merchandising and promotional plans for SC Grown produce = 1127 stores

Specific Events:

- Southeastern Produce Council, March 2012, 2200 attendees, 11 new sales contacts made (62 vs. 51, >10% increase)
- Eastern Produce Council, April 2012, 400 attendees, 5 new sales contacts made (37 vs. 32, >10% increase)
- Southeast Produce Council, September 2012, 300 attendees, 5 new sales contacts made (40 vs. 35, >10% increase)
- PMA, October 2012, Anaheim, CA, 6 new sales contacts made (42 vs. 36)
- New York Produce Show, New York NY, 6000 attendees, 9 new sales contacts made (37 vs. 28, >20% increase)

Show participation is the most effective means for maximum use of time, for the opportunity to reach buyers, present new varieties and engineering plans for increasing sales, and to educate and build relationships with key retail and foodservice buyers.

Plant and Flower Festivals:

The following graph depicts the success of the six SCDA festivals, and their impact on the participants:

Year/Season	Location	#Persons Attending	\$ Invested of USDA/SCDA funds	Average Sales per vendor	% Increase of sales or % remaining same
'13/Spring	Florence April 11-14	35,000	\$8778.00 10 newspaper ads 100 radio spots 381 TV spots	\$1001- \$2000	5% vendors had improved sales; 45% sales approximately the same as previous years
'13/Spring	Columbia	54,000	\$19,999.00 4 outdoor boards 240 radio spots 4 newspaper ads 1 magazine ad 3 facebook ads 200 online ROS ads on TV station sites	\$6000 +	60% vendors had increased sales; 5% reported sales about the same as

			210 online web ads on newspaper site		previous five years
'13/Spring	Greenville May 2-5	8500	\$11,050.00 150 radio spots 6 – 12-25 digital outdoor boards 11 newspaper ads 1 online banner	\$1001- \$2000	100% vendors had decrease in sales
'13/Fall	Florence	18,000	\$5500.00 8 newspaper ads 150 radio spots	\$501- \$1000	30% vendors saw increase in sales; 50% reported sales the same as previous years
'13/Fall	Columbia	22,500	\$14,637.00 6 outdoor ads 174 radio spots 65 TV ads	\$1001- \$2000	10% vendors had increased sales
'13/Fall	Greenville	11,000	\$7510.00 125 radio spots 7 newspaper ads 1 online banner	\$1001- \$2000	20% vendors had increased sales; 60% had decreased sales

Beneficiaries

Specialty crop growers are the primary beneficiaries due to established contacts and new buyer contacts made at the shows. Retail and foodservice buyers received updates on varieties, new crop introductions, projected volumes for upcoming seasons, and were then able to successfully implement a strong sales program for SC Grown fruits and vegetables.

Approximately 35 specialty crop producers/firms were affected by the economic impact of the project. Expansion of this impact across SCDA and other grower organizations could translate into a projected economic increase of \$36 million in sales based on the current value of specialty crops at \$360 million. Also, individual impact could very well reach 350-400 additional jobs across the state.

The ornamental nurserymen who were exhibitors at the six Plant and Flower festivals were also beneficiaries.

Lessons Learned

The project manager gives recommendations for the continuation of participation at these events based on the following:

- Recent waves of potential acquisitions and mergers in the retail arena
- Key buyer personnel changes

- Constant evolution of food safety initiatives
- Need for joint efforts for driving sales between buyers and SC growers
- Continuous changes and improvements in packaging

Growers (project partners) were invaluable support with buyer contact, information sheets, crop/new variety updates, scheduling farm visits for buyers, problem solving and helping to plan promotions.

Attendance records for buyer attendee analysis and determined that 85% of buyer participation was an average number for the shows.

Attendees were contacted post-show for feedback and 95% felt that their time was well spent and would continue making show attendance a priority.

Long term outcomes provided progress consistent repeat buyers, and post show grower visits scheduled. The following goals were accomplished: a 10% buyer increase, promotional programs were presented to retail chains, new produce being grown in the state was introduced (Carolina Sweet Onion), and specialty crop production was increased by 16 million dollars.

Unfortunately, the lesson learned from the plant and flower shows is that no matter the amount of advertising made prior to an event, weather is the ultimate factor in the customers' decision making process, and foul weather can ruin a weekend event.

Contact Person

Mr. Sonny Dickinson, Assistant Director for Marketing, SCDA
803-734-2210/803-960-0441
sdickinson@scda.sc.gov

PROJECT ELEVEN

Project Title: Provide Marketing and Food Safety Workshops for Small and Minority Farmers

Project Partner: SC Fruit, Vegetable and Specialty Crop Association

Project Summary

The workshops assisted the participants in the improvement of their understanding of the topics and processes to be followed in the production and delivery of a safe food supply to the buying public. More and more, consumers are looking to local farmers as a source for the food they feed their families. These reasons include freshness, improved environmental stewardship, and buying safe food. But in order for produce to be innocuous, it has to be kept safe from the farm all the way to the market. There are many issues that can affect the safety of fresh produce and can pose liability issues for both the grower and the market in which it was sold. For these reasons, the workshop programs centered on “Enhancing the Safety of Locally Grown Produce” – best practices to be implemented at all levels to keep fresh fruits and vegetables safe and to reduce the risk of liability.

The mechanisms used to achieve these goals were to assist small, underprivileged and minority specialty crop farmers increase their farm income by providing educational training in workshop settings to help them improve their understanding of the risks that are generally associated with food production and the marketing of fresh fruits and vegetables. Market managers learned about some practices seen in farmers markets, and how to identify “best practices” and procedures to help keep the fresh fruits and vegetables sold safe.

Project Approach

Food Safety and Marketing Education workshops were held over a two day period at the SE Fruit and Vegetable EXPO in November 2012 and the workshops were open to all in attendance at the EXPO. There were 124 South Carolina specialty crop farmers in attendance at the EXPO. Two additional Food Safety and Marketing workshops were held for farmers in the rural communities. Program topics/dialogue included:

- What foodborne illness is, and most common causal pathogens
- Average awards of food borne liability settlements
- Source contamination points in/on plants
- Identifying practices that increase risk
 - Use of manure
 - Irrigation water source
 - Worker hygiene
 - Post harvest handling
 - Worker training for harvesting
 - Safe transport
 - Certification options
- Sales categories (farmers markets, wholesale, CSAs)
- Basic sanitation steps to keep produce safe
- On-farm food safety plans

At each of the workshops, the presenters included power point slides in their presentation and each farmer was given a pre- and post- survey. The food safety educational session covered field sanitation, water quality standards for irrigation and post-harvest washing and handling. The farmers were also provided with information about the benefits of being GAP certified and why it is important for farmers with packing facilities to develop a HACCP plan for their farm. The farmers were also given an overview of the Safe Quality Food (SQF) program.

One hundred and twenty four specialty cropfarmers (124) attended the SE Fruit and Vegetable EXPO in November 2012 and workshops of both Food Safety Education and Marketing were held over a two day period with sixty one (61) specialty crop growers attending.

During the spring of 2013 two additional workshops were held and sixty one (61) specialty crop producers attended them. The workshops were both held in Columbia, SC because only a small number of farmers responded and Columbia is centrally located in the state. The racial make-up of farmers attending the workshops was of two ethnic groups; 55% Caucasian and 45% African American.

Workshops were conducted on Good Agriculture Practices (GAPs) and more than 100 farmers attended. Fourteen farmers (14) were assisted in developing the Quality Manual for their Good Agriculture Practice (GAPs) and they received their GAP certification which allowed them to meet the Food Safety requirements for most commercial buyers.

The Fresh Produce Safety Task Force was organized to develop Food Safety Educational materials and/or collect research based information as guidance for farmers to help them understand the evolution of regulatory policies. The food safety faculty members at Clemson University, Clemson Extension, USDA Agriculture Marketing and Inspection Services and the SC Fruit, Vegetable and Specialty Crop Growers Association met in December 2012 and discussed the objectives of the group. Four additional meetings took place in 2013.

Goals and Outcomes Achieved

The primary goal of the project was to improve the understanding of food safety, and for growers to start incorporating the food safety guidelines in their day to day farming operation. The workshop attendees were required to complete a survey/evaluation. Fifty five (55%) of participants used conventional farming methods, while forty five (45%) used both organic and conventional farming methods. Nine (9%) percent had farmed for less than three years. Thirty six (36%) percent had been farming between four and nine years, and the remaining fifty five (55%) percent of the participants had been farming for more than ten years.

The specialty crop producers rated their knowledge of the 7 broad topics that influence the safety of fresh produce and also indicated the changes they plan to make as a result of the training provided. The seven topics included land use, water use, manure use, farm

worker hygiene, farm worker toilet and handwashing facilities, harvest and storage practices, and the transport of produce to market.

45% of the farmers rated their knowledge of the effects of the land that is used and the water that is used with produce on the safety of the product higher after the training than before the training. 27% rated their knowledge of how manure is used, how farm worker hygiene and how the harvest and storage methods used affect the safety of produce higher after the training than before the training. 18% of the producers rated their knowledge of the effect of having farm worker toilets and handwashing facilities and the effect of transportation methods on produce safety higher after the training than before the training.

The following numbers indicate the changes of the percentage of participants plan to make as a result of the program:

- 27% indicated that they had already adopted six or more of the practices prior to attending the training
- 82% plan to keep better records to enhance the safety of the produce they grow
- 73% plan to conduct self-inspections of their farms and facilities, provide more food safety training for their workers, switch to containers that can be cleaned and sanitized for use with produce and improve the way they sanitize facilities and equipment
- 64% plan to improve the way they clean facilities and equipment and to make improvements in the cleanliness of the vehicle used to transport produce to market
- 55% plan to make improvements in handwashing facilities for workers, monitor storage temperatures of produce and also to make a plan that allows them to better trace the produce from their farm
- 45% plan to make changes in the water used for washing produce to improve safety
- 27% plan to make changes in the water used for irrigation and the type of irrigation methods they are using with their produce in order to enhance safety, and also to make improvements in toilet facilities for workers
- 18% plan to make changes in the timing of irrigation to enhance produce safety

The second initiative was for the specialty crop growers to start adapting some of the marketing techniques that were covered in the workshop and incorporating the ideas into displaying their products in a format that is more appealing to the general public.

The workshops helped the participants improve their understanding of the topic and the process to produce and deliver a safe food supply to the buying public. It has also enhanced the farmers' awareness of specialty crop diseases and how to implement IPM practices in the fields.

There was a positive change of 5% increase from the pre to post survey of specialty crop growers who indicated that they would adopt the information that was provided to them.

The numbers of small underprivileged and minority farmers attending specialty crop workshops have increased since they have attending the food safety education and marketing workshops over the last two years.

Lessons Learned

The changes expected from specialty crop producers and other food handlers to make over the long term is to continuously adopt additional food safety guidelines as one of their risks management tools, and to increase sales at the direct levels so that their farms remain successful. Reaching this population is tough, and most of the farmers don't have computers; many cannot read.

These workshops need to continue so that the farmers will be helped. If there is no outreach programs to them, and materials given in a way they understand, this demographic of farmers will more than likely decline. These fruit and vegetable growers need help preparing for the marketplace needs and in making more informed decisions about managing their farming operation.

I am of the opinion that the educational workshops that are held will likely increase all the fruit and vegetable grower's interest in research activities concerning the development of new varieties of crops and the new techniques that may improve production and handling of specialty crops.

Contact Person

Weatherly Thomas, SCDA Small Farms Marketing Specialist
803-734-2210
wthomas@scda.sc.gov

PROJECT TWELVE

Project Title: Providing Incentives towards the cost of GAP/GHP Audits

Project Partner: SCDA Inspections Division

Project Summary

This project was intended to help South Carolina farmers grow and deliver a safe supply of food and improve their profitability by increasing the amount of new USDA GAP audits performed in the state. On-farm food safety is one of the most pressing issues in production agriculture today. Not only is food safety certification increasingly required in the marketplace, in 2011, Congress passed the Food Safety Modernization Act, which would require most all fresh fruit and vegetable growers to adhere to standardized rules and practices to help limit the number of food borne illness by pathogenic microorganisms in the nation's raw commodity food supply.

Project Approach

This project utilized funding from the Specialty Crop Block Grant Program to reimburse specialty crop producers in the state that received GAP certification from the USDA program, which is administered by the SCDA Grading and Inspections Division. All firms that received certification were eligible for reimbursements.

The SCDA offered up to \$600 to each specialty crop producers certified in GAP standards, and up to \$200 towards the reimbursements of water quality testing for wells, and/or water used in produce packing houses.

Goals and Outcomes Achieved

Forty two (42) new USDA GAP audits were performed in South Carolina from October 2011 to October 2012, a record increase. Audits were up more than 175% over previous years.

The success of the project led to the SCDA to continue the efforts of GAP certification reimbursements, and hire a full time GAP specialist under the Specialty Crop Block Grant Program Agreement #12-25-B-1486.

Beneficiaries

South Carolina farmers that produce fresh fruits and vegetables, both direct marketers and wholesale marketers, and those in need of food safety training and certification benefitted from this project. The forty two specialty crop producers who received reimbursement were the direct beneficiaries. The majority of these producers are small and/or disadvantaged socioeconomically. All forty two are in rural, poverty stricken areas of SC.

Lessons Learned

By providing financial incentives to the growers, many more have signed up for GAP training, and there is now a record setting number of GAP Certified producers in South Carolina. Whether the perception has changed to one of where the SCDA/USDA grading and inspection services has gone from us being the "bad guy" on the farm, only being

there to impose more regulations, to one of a “good guy” just trying to help cannot be proved, but the numbers speak for themselves. Offering reimbursements to these smaller producers of fruits and vegetables encourages them to participate in the GAP process and program. And the consumers are provided with a more safe food supply.

Contact Person

Jack Dantzler, SCDA Director of Grading, Inspections and Market News

803-734-2210

Jack.Dantzler@ams.usda.gov