



**REVISED Final Performance Report
Specialty Crop Block Grant Program
Kansas Department of Agriculture
USDA AMS Agreement Number: 12-25-B-0840**

Program Contact

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Growing, Marketing and Training for Edible Mushroom Production in Kansas

Kansas State University
Grant Awarded: \$36,810

Project Summary

There are very few commercial mushroom producers in Kansas, and none in the Manhattan area of which the project team was aware. The closest two are about 80 and about 120 miles away in Lawrence and Kansas City, respectively. The Willow Lake student farm at Kansas State University offers an opportunity for students to learn mushroom production, to practice what they learn and market mushrooms along with vegetables and fruit crops at the Manhattan downtown farmers' market. This project built on an earlier Specialty Crop Block Grant that helped with the first year of establishing the Willow Lake student farm, and another specialty crop grant which allowed the student farm to track budgets for various crops and to monitor any contamination of produce during the post-harvest handling steps.

Project Approach

The goal of this project was to grow and sell mushrooms, and teach others how to do so. In the first year of this grant, 30 oak and hackberry logs were procured from a local farm, and spawn for shitake mushrooms was purchased. The inoculated logs were maintained and harvested for two years. The project staff also developed a methodology for growing oyster mushroom spawn from agar plates onto milo grain, and then using the grain to inoculate pasteurized wheat straw in bags. Two 4' bags per week were started, and produced approximately 2 to 5 pounds of mushrooms per week, which were sold for \$15 per pound. Mushrooms were produced and successfully marketed in 2009 and 2010 using these methods. A third mushroom species, the King Stropharia, was established on wood chips outdoors in a shady area near the wash station at the farm. This species did not do as well, and failed to produce a crop. However, if it turns out that the spawn is viable, the project staff may be able to transplant this mushroom to other locations on the farm and use it as an intercropped species with vegetables, as it has nematicidal properties, and can protect plants from root diseases.

Goals and Outcomes Achieved

About 10 to 20 groups per year tour the student farm. These visitors are shown the mushroom production areas and are intrigued about the possibilities for Kansas. The project staff also conducted an evening workshop in the fall of 2009 and taught potential producers the basics of mushroom production. Each participant took home handouts and an inoculated bag of straw for growing the oyster mushrooms, after seeing and participating in each of the steps of production. One student continued to teach an evening class in the spring of 2010, and the vegetable crops class had a lab on mushroom production in the spring of 2010. Positive press was received for each of these activities, including a press release from K-State about the mushroom training workshop.

The "Project Plants" grant expired before the project staff had a chance to work with them on a mushroom production workshop. This was a program for 4th and 6th graders after school, so would not have led to any new mushroom growers any time soon. Project staff have done annual

workshops for Willow Lake student farm club members (about 20 people), and I also include mushroom production as a lab for a vegetable crops class (Hort 560). The lab is well received and popular with the students. About 40 students take the class and it is offered on alternate springs. Project staff also continues to respond to extension and outreach requests to give mushroom talks and demonstrations. The most recent workshop was part of the KS “Walnut Council Annual Field Day,” on June 1, 2012. The project team delivered a presentation that included demonstrating how to inoculate logs with shitake spawn, and bag of actual fruiting oyster mushroom, and used the Univ. of Missouri fact sheets as handouts. About 80+ people attended the field day.

Specific goals outlined in the grant included that were met were: 1) spawn production, 2) prepare bulk substrates (logs, straw), 3) spawning, 4) incubation, 5) fruiting, 6) selling post-harvest at local markets, and 7) conduct mushroom cultivation workshops and train interns.

The eighth goal to produce pamphlets and fact sheets is still a work in progress. Until the extension guide is published, the project staff has been using an excellent publication from ATTRA on mushroom cultivation. Information, photos and other resources have been collected for the fact sheet, and previous farm managers have written the outline.

The student farm sold mushrooms on a weekly basis through its farmers’ market stand and the People’s Grocery organic food co-op during the 2009 and 2010 growing seasons (the period of the grant). As stated in the report, up to 5 pounds per week were sold during the growing season (3 months), or roughly 60 pounds over the season, at \$15 per pound for a gross return of approximately \$900 per year. In addition, a few pounds of shitake mushrooms were also produced each summer, but sales were less than the oyster mushroom. This is less than the 400 to 600 pounds mentioned in the grant proposal, which was an estimate. The project team experienced a learning curve in the first year, and in the second year the heat combined with trying the wrong strain of mushroom limited production.

Demand for mushrooms, on the other hand, was and continues to be quite strong. The students often reported that many customers came to their stand because of the mushrooms, and were disappointed when they would sell out early. The People’s Grocery has, and continues to buy all that we can produce. A restaurant in Manhattan, “The Little Apple,” has started something in the evening called “the white menu.” On it they feature special entrees and desserts, many of which contain all or some local ingredients. They have purchased the farm’s mushrooms in the past, and continue to support the student farm now by purchasing significant quantities of raspberries and black berries. They would likely buy all the mushrooms the farm could produce.

The project team hasn’t yet offered workshops through the Growing Growers program. As mentioned in the narrative above, they continue to train students and land owners in the Manhattan area on mushroom production methods, and demand for the product is high. It will continue to be promoted as a value-added opportunity for diversified farms in Kansas.

Beneficiaries

Beneficiaries include Kansas State University students, in particular student farm interns in 2009 and 2010 who had direct experience and training in three types of mushroom production, harvest,

and sales. Many of these students plan to go on and farm after graduation. One of these students, who managed the student farm in 2009, graduated and started a mushroom operation in Newton, Kan., as a result of his positive experience through this grant. Other beneficiaries are the consumers in Manhattan, who have been shown to buy as many mushrooms as the farm can produce. The project team believes there is still an unmet demand in Manhattan for locally grown mushrooms. Other beneficiaries are other potential mushroom growers in Kansas who attended the workshop, the nighttime class, or will read the fact sheets or visit the student farm.

Lessons Learned

In 2009 the project team used a mushroom strain that was growing locally, and had better success with that than with one that was purchased commercially from a different region of the United States. The team also learned that some people, including students, and interns, have more of a passion for mushroom production than others, and one has to have some passion or at least interest in the subject because attention to detail is very important. It is critical that each group of students pass on their knowledge to the next group. As students graduate, the project team saw the need to keep the knowledge, especially the how-to information about the details of the production system alive. An engineering student took interest in the project in 2011, and the team plans to continue producing both shiitakes and oyster mushrooms into the future. Hands-on workshops will also be needed if this project is continued in order to train other growers – and these workshops take time. The project team has applied for other grants to continue this project through other agencies and hasn't been successful, but the team intends to keep growing them at the student farm and publish the fact sheet both in print and on the web.

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Additional Information

N/A

Increase Wine Grape Production Using Cost-Share Monies to Purchase Specialized Equipment

Kansas Grape Growers and Winemakers Association

Grant Awarded: \$20,000

Project Summary

The Kansas grape and wine industry is a fledgling industry, needing everything, including capital, to help it grow. Capital allows vineyards to purchase specialized equipment to better mechanize their operations-yielding increased crop quantity and crop quality. The goal of these actions was to produce benefits that would result in faster industry growth.

A previous Specialty Crop Block Grant provided cost-share monies to purchase vines that would be planted in sufficient quantities to produce a crop large enough to be usable by a winery. This grant built on that "vine" grant to allow growers with that kind of acreage (arbitrarily defined as three acres or more) to purchase vineyard equipment with cost-share monies.

Project Approach

An application form was designed and potential participants were solicited using Kansas "grape lists", email listservs open to members of the industry, industry partners, or those who are just interested in the industry. The application form and the email solicitation are attached below.

Participation requirements were given and deadlines were set. General use equipment, such as tractors, ATV's, skid steers, boom sprayers, etc. was not funded under this grant. Participants were also required to either use the grape crop in their own Kansas farm winery or sell their crop to a Kansas farm winery, as opposed to selling the grapes to other states.

Goals and Outcomes Achieved

Applications were received and reviewed. Most, but not all applications met the pre-determined guidelines. Ten applications were received, seven were approved. Funds were disbursed when proof of purchase was received from the applicant. In general, applicants purchased netting, irrigation components, vineyard sprayers, and trellis material. A total of \$42,229.35 in purchases was made using this \$20,000 grant. All applications, except the last one, were funded at the full 50 percent. The final application was funded at 44 percent.

The program staff found it was unable to quantify the results using the criteria in the application. The next step for the team to look for data was to consider a recently-completed survey of the Kansas wine and grape industry conducted by the Kansas field office of National Agricultural Statistics Service of USDA. It has provided the most accurate information available of the state's industry. However, it was conducted and completed after this project ended, so it turned out not to be an option for the project team to gather data. The project staff consequently had to fall back on anecdotal information to measure the results of this project. All participants stated they at least doubled their yields from 2009 to 2010 due to their new equipment purchases. One grower purchased nets and commented this was the first year the birds did not get the entire harvest; so that grower went from no crop to a crop. Efficiencies were increased to the point of allowing the

growers to increase acreage planted without increasing labor costs. And according to the growers, all funded projects directly resulted in higher quality fruit going to the winemaker.

Beneficiaries

Growers received a leg up in accelerating their capital asset acquisition plan. The vineyard equipment purchased allowed them to produce higher yields of higher quality fruit. With this grant, three vineyards were harvested using the equipment. A “tailgate” workshop to explain the equipment was conducted, and 10 people attended. After the project concluded, an additional 25 people or so were expected for another workshop that would highlight the use of the equipment.

Additional beneficiaries were Kansas wineries, which received more, higher quality fruit allowing them to increase their production and reputation for producing quality wines. The end user, the consumer, has quality wine, and more of it, to select for purchase.

In terms of economic impact, a study from Iowa found that every \$1 in wine sales generates an additional \$30 in economic activity. This is widely believed throughout the Kansas grape and industry to be a similar situation for this state.

Lessons Learned

On the plus side, the participating growers have more specialized equipment, geared to their current scale of production and not their starting scale of production. In general, growers estimated their production doubled or more than doubled because of the purchase of upgraded and/or new equipment facilitated by these grant monies.

On the negative side, not every grower had equipment needs (or available capital) in the exact year of the grant.

The project team recommends the creation of an open grant that would receive an annual recharge of money would benefit a larger population of growers. Specifically, the team suggested that future grants should retain the minimum vineyard size as a requirement for specific grant participation, in order to provide wineries with deliveries of crop that are economically feasible for them to process.

Contact

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Additional Information

Attached below.

Kansas Grape Growers and Winemakers Association (KGGWA) has received a specialty crop block grant from Kansas Department of Agriculture.

The stated purpose of this grant is:

- to increase both quantity and quality of Kansas-grown grapes going to Kansas Farm Wineries
- by providing cost-share monies (up to 50%) for the purchase of specialized vineyard equipment.

Minimum program requirements/restrictions:

- All equipment purchased with these cost-share funds must be used directly in the growing of grapes on land owned or leased in the state of Kansas. Qualifying purchases must be in 2009.
- It is intended these funds be used to purchase industry-specific equipment.
This specialized equipment includes: vineyard sprayers, vineyard cultivators, hydraulic pruners, netting, and other items as approved by the grant review panel. General purpose equipment and hand tools will not be funded. Examples of general purpose equipment include: tractors, boom sprayers, ATVs, skid steers, back pack sprayers, etc
- Netting purchases must cover at least one acre. Preference will be given to larger areas.
- A Kansas Farm Winery must be the end user of the resulting grape crop. Preference will be given to grapes being grown under written contract.
- Growers shall be committed to advancing the Kansas grape and wine industry.
- Growers shall have a minimum of three acres in their vineyard operations. For purposes of this grant: vineyard operations are defined as total plantings as of the grant application date; one acre is defined as 545 vines.
- To allow for greater participation, individual grant requests may be approved for amounts smaller than the requested amount.
- Applications to this grant may be made in anticipation of qualifying purchases, but payment to the grower will be made only after proof of payment has been submitted.

Grant administration: A grant review panel will be assembled to review and approve/disapprove applications. The panel will also be empowered to interpret the above items and/or add additional items, as needed, to facilitate the administration of this grant.

Direct all inquiries and/or applications to

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**This is an application/agreement between _____,
a Kansas grape grower, and Kansas Grape Growers and Winemakers Association (KGGWA).**

Application to receive 2009 cost-share monies that will be used to purchase vineyard equipment.

Applicant _____ Qualifying purchase _____
Business name _____ Cost _____
Where will this purchased item be used? _____
Business office _____ Do you sell your grape crop? Y / N
_____ If no, do you (check one)
 Process it in your own winery.
 Use it for personal purposes.
Vineyard location _____ If yes, are your grapes sold (check what applies)
_____ Under a written contract.
 Under a verbal contract.
 On the spot market.
Vineyard size _____ Who purchases your crop? _____
(as of application date) _____
Signed _____ Date _____

If approved, the following information will be required before grant funds will be disbursed

1. Proof of purchase documents
2. FEIN (SSN) if not a corporation _____
3. 2008 yield information:
_____ total acres _____ Tons/acre _____ total yield
4. Expected benefits resulting from this purchase _____

The following information will be required at year end from participating growers (NLT 11/30)

1. 2009 yield information:
_____ total acres _____ Tons/acre _____ total yield
2. How these monies have enabled you, the grower, to increase yield and/or acreage.
... Labor savings and/or efficiencies ... Impact on business plans for future years
... Increased operational efficiencies ... Anecdotal info re: benefits gained from this grant

Expanding the Kansas River Valley Local Foods Website to Serve All Kansas Communities

Kansas Rural Center
Grant Awarded: \$28,050

Project Summary

The goal of this project was to increase the sales of Kansas grown or manufactured specialty crops, foods, and agriculture products throughout and beyond the state of Kansas. The project team believed that farmers needed a centralized communications tool where they could offer their production, and institutional food services could buy fresh, local, in-season crops. It was also felt that this website could help facilitate the creation of linkages between wholesale and retail buyers and producers. This project expanded and enhanced an earlier website.

Project Approach

The approach was to overhaul a website that already existed. The team provided for an ongoing needs assessment and developed new features for the website after consultation with producers, buyers, Kansas State University Research and Extension, and the Kansas Department of Commerce. The team modified the website's architecture to incorporate new features and consulted with a contract programmer to code new website tools. They provided education and outreach to current and new producers and current and new buyers, as well as to schools, service organizations, and provided the media with information on specialty crops and the local foods of Kansas. The goal was to increase market share of specialty crops for Kansas producers through marketing of the website, and to develop a revenue model for the project to become self-supporting within three years. The team hoped to interact with specialty crop producer organizations and individual producers to increase market share.

Goals and Outcomes Achieved

The team developed an interactive Kansas map framework and accompanying producer's page that could be clicked on, and recruited 30 new producers to the site. They added restaurants and markets to the site, and moved the site to a new, higher speed server. They printed and distributed flyers at producers meetings and the local four-state Growers Conference. The site had over 5,000 visits. The team developed an income model whereby a small percentage of sales were designated to return to support the project. They hosted an event where growers and institutional buyers met briefly to learn more about such topics as products, needs, and seasonality.

There were very few sales ever made through the website. It served to introduce growers and buyers, but transactions were made outside the purview of the website. So, while the project proved useful in terms of specialty crop sales, actual data could not be tracked. Also, a survey was not completed, because there were not enough producers who used the website. Also, during this time, harvests were poor and there was a general lack of produce that was marketed in northeast Kansas. And, other websites (such as Local Harvest) became more popular during the project timeframe.

The decision was made to incorporate the information into a separate website which provided more producer support and consumer interaction, so all growers were migrated to the Our Local Food website, run by the Kansas Rural Center: <http://www.kawrivervalley.org/p/business-membership-restaurants.html>. This site operates on a membership basis, and was at the time supported by 10 restaurants, seven farmers markets and 38 farmer members paying dues. It is confined to the Kansas River Valley area, but the Our Local Food designation was recently expanded to two more areas, one around Wichita and another around Emporia, Kansas. The expansion was made possible by a Specialty Crop Block Grant made in 2010. This is proving to be a much more lively and effective website for facilitating sales, and restaurants have had days when they designate percentages of their sales to the project.

Beneficiaries

The fruit and vegetable growers listed above benefited directly from the tools developed by the project. Institutional food programs, especially schools, were made knowledgeable about the variety and availability of local food production. The project did increase sales, but not through the mechanism of the website, so it was not traceable. In its present incarnation, the project seems to be taking off, as evidenced by the commitment to provide funding from various restaurants and markets.

Lessons Learned

The team learned that there is more food available in Kansas than previously thought. A key lesson learned is that producers prefer to deal directly with customers, rather than through a website. The lists of interested growers developed through the project proved to be fertile ground for contributing to the success of the new websites and projects of Our Local Food. The team learned that having a website in place is only part of the story: the website and the program must be also be marketed. The new website has an active Facebook presence, with 535 friends.

Contact

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Additional Information

N/A

High-Tunnel Agriculture—Construction and Use

Flint Hills Technical College
Grant Awarded: \$2,432

Project Summary

Building the high tunnel at Flint Hills Technical College met several specific needs. The first one was to build a cost-effective high tunnel to show the public that high tunnels could be built and used for a minimal cost. By using the plans offered by Kansas State Extension and Research Center in Olathe, Kan., the team was able to build a high tunnel using PVC pipe and six-mil greenhouse plastic for \$1.05 per square-foot. This allowed the team to show how low-cost high tunnels can be incorporated into farming or gardening operations at a minimal cost.

The second purpose for building the high tunnel was to increase the curriculum offering of the Culinary Arts program at the Flint Hills Technical College. The program is now offering two courses on Sustainable Food Production/Culinary Applications. This promises to be a positive influence on the overall program.

The third purpose was to have a working high tunnel on the college's campus in order to offer workshops and visitations to area and state vocational agriculture programs, which began in the Fall of 2010.

Project Approach

Rationale: The building of the high tunnel offered the students in the Construction Technology program and the Culinary Arts program the opportunity to build a high tunnel structure. This included stakeout, some concrete work, leveling, and fabrication.

- Goals: The first part of the project's goals was met by having the students build a high tunnel. Through this hands-on opportunity, students learned valuable skills and the understanding of how they could do this again. The plans in building were simple enough that they will easily transfer to other projects.

Goals and Outcomes Achieved

Teaching the students construction methods and introducing them to the concept of high tunnels has been achieved. As the Culinary Arts students plant seeds for their crops and Vocational Agriculture programs are invited to experience the high tunnel growing potential our other objectives will be met.

Tomatoes, carrots, greens, onions, peppers, melons, herbs, garlic and artichokes are among the specialty crops that have been produced in this project for the culinary arts program. This

produce is used in both classroom instruction and catering meals at the school, such as the Sustainable Agriculture conference that takes place there each year.

The high tunnel is used to teach Hospitality/Culinary Arts students (HCA 116 Sustainable Food Production/Culinary Applications) about sustainable ag, with hands-on instruction in planting, tending, harvesting, soil amendment, season planning, etc. It also exposes students to specialty crops not previously used in instruction, which will create future demand for the crops.

The high tunnel has been used to educate the public at events hosted at the college such as Sustainable Agriculture Conference, two sustainability fairs, high tunnel workshops, sustainable agriculture workshops, and through small community based classes. Students from an after-school program come and work in it and the community garden once a month and 4-H groups and school groups come by sometimes. There have been hundreds of people through the high tunnel either helping or just seeing how they are made and how they work.

Because of the hoophouse at the college, the team was able to partner with the local health department on a small grant and built 3 others in the community. One at Sacred Heart school, one at Camp Alexander, and one at a farm northwest of Emporia. The one northwest of town is a different design to see if we could increase vertical growing and try a different way to ventilate. This farm now has 4 hoophouses and is growing food for the school system.

High tunnels were also instrumental in starting a cooperative venture among local food producers.

Beneficiaries

Multiple groups have been beneficiaries of this project. The high tunnels have been the subject of educational tours for the local middle school's after-school program. Four statistics classes from Emporia State University have participated in work days at the high tunnel.

The college had two "Flint Hills Sustainability Fairs" open to community members where USDA staff came to provide information about obtaining high tunnels.

Winners of 4-H horticulture awards, including 30 children and 15 adults, visited the project site, along with potential students of the college's sustainability studies program. It also was used as a demonstration tunnel for regional workshops, which has led to the creation of other tunnels in the area – including a handful constructed at rural schools, such as Reading, Kan.

Additionally, the project provides 15 to 20 pounds of produce each season to the Culinary Arts program which reduces the cost to the school.

Lessons Learned

The results of the construction part of this project were positive. Several students in the Construction Technology and Culinary Arts programs mentioned how interesting and enjoyable it was to be involved in this project. They realized how this project could be duplicated and used in the future.

Another positive aspect of this project is that it will be ongoing, offering students opportunities to learn how to produce food for their own use as well as for market.

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Additional Information

A photo of the high tunnel, as well as other information about the project, may be accessed at this website: <http://www.fhc.edu/programs-and-majors/sustainable-living-center.aspx>

Highland Community College Research and Instruction Vineyard

Highland Community College
Grant Awarded: \$16,650

Project Summary

As Highland Community College (HCC) began approving individual courses in viticulture and enology (en route to eventual degree programs), it became apparent that having a vineyard for instructional use would become an invaluable tool, both from the standpoint of not needing to schedule time with a local commercial vineyard and not needing to worry about "hurting" someone else's vineyard. The college sought funding for this project to provide a readily available outdoor classroom for their students. Also, a portion of the vineyard was planted to experimental varieties for Kansas to see how those vines would perform. Finally, the vineyard will eventually provide a source of income to the program.

Project Approach

This project was about planting a vineyard from start to finish. By combining Specialty Crop Block Grant funds with existing funds, HCC found some economies of scale which allowed the planting of a 2-acre vineyard rather than the 1-acre written into this grant. HCC rented roughly 2.5 acres of farm ground near its Wamego Center in Wamego, KS. The 1,400 vines were purchased, an existing water well improved, electric meter installed, vines planted and trellis constructed. The original vineyard was split into two separate fields, sizes 1.25 Acres (840 vines) and 0.75 Acre (560 vines). The smaller field was in the middle of a soybean field in a grassy area not being farmed.

The summer and fall of 2008 saw far-above-average precipitation totals which, combined with below-average temperatures that winter turned out to have a vastly negative effect on the smaller field. That grassy area that was chosen was not being farmed for a reason. The water table rose from the increased precipitation, and a natural spring opened up in that field. The old adage "vines don't like wet feet" held true. The wet conditions caused the vines to go dormant later in the season than usual which didn't allow them to be properly prepared for the severe winter in 2008-09. The end result was that nearly the entire small field was lost to winter-kill. The remaining vines have been gradually transplanted to the big field to fill in holes where other vines died for one reason or another, and the smaller field has essentially been abandoned.

The remaining field of 1.25 acres is a thriving vineyard. The vineyard consists of 125 vines of "experimental" grape varieties; that is, varieties that are not traditional to Kansas (25 each of Vignoles, Chardonnay, Riesling, Lemberger and Sauvignon Blanc). The remaining 715 vines are roughly an equal split of Chambourcin and Traminette varieties. The summer/fall of 2012 will mark the first harvest for the vineyard. The college will utilize a small portion of the fruit from the vineyard to teach winemaking, but the majority of the fruit this year will be sold to local wineries in the Wamego area.

The college created certificate and degree programs in Viticulture and Enology. The Viticulture courses include:

- VIN111 Intro to Viticulture and Vineyard Establishment

- VIN113 Winter Viticulture Technology
- VIN114 Spring Viticulture Technology
- VIN115 Summer/Fall Viticulture Technology
- VIN211 Integrated Pest Management
- VIN213 Midwest Vineyard Management
- VIN293 Soils for Viticulture

Goals and Outcomes Achieved

The main goal of this project was to create an outdoor classroom for HCC's Viticulture classes. The onus was to have a location readily available within a short drive of the HCC-Wamego Center for field trips as the students learn the hands-on skills required for vineyard work. The college had previously and continues to conduct field trips to privately owned, commercial vineyards in the area, but having their own vineyard allows students to learn the techniques and best practices without worrying about "messing up" someone's privately owned, commercial vineyard.

Over the course of the three year grant period, there were 29 students who enrolled in Viticulture courses and 16 students who enrolled in Enology courses. There are nine students counted twice as they took courses in both fields of study. Therefore, a total of 35 (unduplicated) students enrolled in V&E courses over the period of the grant.

Initially, the courses started as being on 4-5 consecutive Saturdays. However, students said something more spread out would be better, so the project staff altered the courses to meeting one Saturday per month for 4-5 months. The team has realized a higher percentage of "repeat students" since making that change.

Since HCC only has one instructor, and he also manages the vineyard/winery operations, the college only offers 3 courses per semester: Intro to Viticulture, Intro to Enology, and one other course. They have found that there are no people in Kansas with an academic background in V&E; therefore, they've hired no adjuncts to enhance the course offerings and frequency. This lack of courses offered may have become a hindrance to students. After their initial semester, they can only take one new course per semester. As the program grows, the project team hopes to bring in a second instructor (likely from out of state) to teach courses and double the course offerings per semester.

VESTA reports that from 2003-2009, there were 36 students who had enrolled in at least one online course through their program. That number was reported to be 45 by the end of 2011. In January 2012, HCC hired an employee to be fulltime director of the program in charge of marketing and logistics for various program operations (course scheduling, student field trips, free workshops, consultation visits, etc). It is expected that numbers for on-the-ground as well as VESTA-online courses will increase due to increased efforts in marketing and general program support.

The college also sought to involve local high schools in the project and teach them about viticulture. The program's instructor, Dominic Martin has made a couple of high school visits to offer presentations on viticulture (at Chapman High School), but intends to keep making contacts

with other high schools. Project staff believes that setting fruit this year and planning for a harvest could make the vineyard a little more interesting for high school students to visit. Getting high schools involved in viticulture is a long-term goal of HCC and the larger consortium VESTA, and those efforts are expected to continue long after the end of this project.

Beneficiaries

First and foremost, the main beneficiaries of this project are HCC's viticulture students. Having the vineyard to practice techniques and learn the hand-on skills necessary to vineyard work made HCC's coursework more efficient and rounded. The vineyard also serves as a "model" that both students and other Kansas vineyard owners can use as a template of what a vineyard is supposed to look like.

Another direct beneficiary is the industry in general. Grape production is relatively new to Kansas, and many Kansans don't know grapes can be grown here. HCC's vineyard is on a well-traveled road in Pottawatomie County, Oregon Trail Road. Tourists and locals travel this road frequently, so the visual exposure allows Kansans to see a vineyard for the first time and realize that grapes grow in Kansas. This exposure gets people talking and creates a positive "buzz" about grapes and the Kansas wine industry.

Lessons Learned

There are several lessons learned from this project. The first is about site selection. When the water table rose in the small field, those vines didn't have a chance. That is something to consider when planting vines. Project staff learned that planting vines in a low-lying flood-zone type of field would be inadvisable due to the shallow water-table and potential for the vines to be "watered to death." Another lesson learned from this project comes from the research portion of the vineyard. The team has learned that Gewurtztraminer grapevines and Nebbiolo grapevines do not like the Kansas climate. The Gewurtztraminer vines were planted with the initial vines and only three of the 25 vines survived the winter. In 2010, the college planted an Italian variety, Nebbiolo in that row, and none of those vines survived the Kansas winter. The college intends to establish Sauvignon Blanc in that row in the future.

Other lessons learned are just the logistics of planting a vineyard. This was the first vineyard that HCC staff was a part of planting. HCC has since hired staff with more experience, so their overall ability to teach and manage the vineyard jumped significantly with the hire, but the initial planting was done by novices, and the process itself was an eye-opening, learning experience. That lack of previous experience was a factor in the small field failing, but that failure provided valuable lessons for everyone involved site selection.

Contact

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Additional Information