Alaska Department of Natural Resources, Division of Agriculture

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USDA AMS Agreement #12-25-B-0906

FINAL REPORT

March 25, 2013

Project #1 Specialty Crop Project Assistant

FINAL REPORT

Project Summary

As the specialty crop industry in Alaska continues to grow, the Division of Agriculture remains focused on improving the communication and outreach amongst growers, wholesale buyers and the general public. The project assistant focused efforts on increasing the number of specialty crop growers who join the Alaska Grown program as well as increasing the number of individuals receiving an e-newsletter directed at those in the food service industry.

The project assistant was first brought on with 08 SCBG-FB funding.

Project Approach

The project assistant was successful at expanding the number of specialty crop growers who join the Alaska Grown program as well as at increasing the number of individuals who receive the weekly e-newsletter. This was achieved by increasing the amount of outreach conducted within the specialty crop industry. The project assistant attended more growers meetings, farmers markets and activities than in years" passed. Each time the project assistant attended an event, she mentioned the benefits of joining the program. It is assumed that word of mouth support from specialty crop growers was also received, encouraging new members.

The project assistant also focused outreach efforts on the food service industry, attending Chef"s Association events and making cold calls and drop-ins at restaurants. The project assistant encouraged growers to recommend the newsletter to their Chef/Food Service clients.

Goals & Outcomes Achieved

The original goals of this project included a 5% increase in the number of participants in the Alaska Grown program as well as a measurable increase in Alaska Grown specialty crop sales to the food service industry, both of which were achieved.

When the project assistant began working for the Division, 417 producers were members of the Alaska Grown program. At the end of one year, 475 producers were members, a 13.9% increase. Ninety-three percent of the new producers who joined the program were specialty crop producers.
The project assistant increased the number of individuals receiving the e-newsletter and became a point-of-contact for wholesalers and chefs seeking to source Alaska Grown specialty crops. Of the ten specialty crop producers surveyed, eight felt that their sales to Wholesalers/Chefs had increased during 2010; five reported that their buyer had mentioned the e-newsletter from the project assistant.

Beneficiaries

Direct beneficiaries of this project include the 58 producers who joined the Alaska Grown program as a result of being outreached to by the project assistant as well as the eight producers who reported an increase in sales to Wholesalers/Chefs.

Lessons Learned

The project assistant was housed in the Palmer office of the Division of Agriculture, which is located in the South Central region of Alaska. The majority of the large-scale vegetable producers are in this area; the population center of Anchorage is only 40 miles away providing hundreds of restaurants as potential clientele. Traditionally, only those producers who sell their specialty crops at a wholesale rate have restaurants as customers and in Alaska, those large scale producers are in South Central. Naturally, the e-newsletter focused on this region. As the „buy local" movement expands throughout Alaska, growers who sell at the farmers market are also seeing more Chefs come through as customers. Growers in other areas of the State have expressed an interest in having a similar newsletter for their area. Staff is exploring how this might work.

Contact Person

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Additional Information

Fresher by Far

Alaska Division of Agriculture
http://dnr.alaska.gov/ag/
907-761-3858
October 25, 2010
Volume 3, Issue 10

A Warm Fall

As you know, we have had an "Indian Summer" with much warmer fall temperatures than normal, and no snow fall. However, we did have some killing frosts which hardier crops were able to survive. The weather has allowed our Alaskan producers time to get all of their crops safely out of the field. Carrots and potatoes have been harvested and all are available for purchase.

Baby Alaska Grown Carrots

Alaska has a "processed," ready-to-eat Alaska Grown product. We have a local producer who "makes" baby carrots, which go through a unique process to become "baby carrots." I had heard several rumors of what baby carrots really were; "They are just small carrots that they cut the tips and greens off of" or "They just grow this way," etc. None of these stories were real. When I visited the carrot barn and processing facility, I learned the truth of carrot processing.

First, I want to discuss carrot storage. Carrots are stored at a very particular temperature and a specific humidity level. Our large carrot producers have high tech storage facilities that carefully regulate the environment they are stored in. Carrots are also stored with their tops cut off. A carrot is technically a root. The purpose of plant roots are to supply the plant with nutrients to grow and survive. As long as tops are still on the carrot, they are taking energy and nutrients from the root, (carrot) to stay alive. To retain the nutrient value and quality of the carrot, these are immediately removed, during harvest in the field. (This is why you do not find them for sale this way in the grocery store or from your distributor.)

Available Within 2 Weeks	
Product	**Specs**
Carrots	24/2#
Carrots	10/5#
Carrots	25# Cello
Carrots	50 lb Carton
Green Cabbage	12/24 Count
Red Cabbage	12/24 Count
Potatoes (White)	5/10#s
Potatoes (White)	10/5#s
Red Potatoes	10/5#s
Yellow Potatoes	16/3#s

The baby carrot process begins with regular sized carrots. They first sanitize all processing equipment, and set the bags and the packing system in place. Next, they begin the process by washing the carrots. They then go through an amazing roller that "scrubs" the skin off the carrots. After they are skinned, the carrots are then cut to a small size. This is where the term "baby carrot" comes from. Once they are cut to size they are bagged and sent to stores for consumers to purchase. These carrots are also eaten by Alaskan children in the school system. Be sure to ask your distributor for Baby Alaska Grown Carrots.

Another Season Passed!

As you know, this is a seasonal newsletter. Unfortunately, summer is over... However, while Alaska Grown greens are no longer available, many root and tuber crops are! We know you are big supporters of locally grown products and continue to utilize Alaska Grown products throughout the year, which is greatly appreciated by Alaska producers and those promoting Alaska Grown products. Thank you for your support and another great season! We will be in touch next spring to update you on the latest farming activities in Alaska.

Project #2 2010 Innovation Grants

FINAL REPORT

Project Summary

Specialty crop producers in Alaska are isolated from new technologies and equipment utilized in the lower 48. Specialty crop producers are also hindered by the extreme climate, short growing season, and access to markets within the State. The Innovation Grant project, originally launched in 2007, has proven extremely successful and popular within the specialty crop industry. Small grants allow more growers to benefit from new technologies; the requirement for public dissemination of project reports and knowledge gained resulted in more growers expressing interest in the program and requesting funding.

Project Approach

The Division advertised the grant availability through many resources: a newsletter, webinar, list serv, email announcement, and through several conferences. The Division received 20 grant applications, for a total funding request of over $75,000. Matching funds totaled $190,000. Through a competitive process, the Division awarded twelve grants for a total of $50,000.

Goals & Outcomes Achieved

The original goals of this project were stated as:

- Develop methods for season extension and increased crop productivity through small grants to specialty crop producers, and
- Increase the awareness of new technologies through producer presentations.

Both of these goals were 100% achieved. The grant recipients were able to extend their season and increase their productivity through their projects and many more specialty crop producers learned of the methodologies through both hearing the presentations and reading the reports on our web page.

Project #1 Alaska Blues Controlled Growing Environment
*No SCBG funds were used for construction or capital improvements; matching funds provided by the recipient covered those costs.

Goal: To determine if it is possible to produce wild berry seedlings from wild berry seeds.

Outcome: Project results were positive. "The seedlings from our experiment with the CGE are available for resell and/or transplanting this year. We have only eight viable, self sustaining plants from our air-layering experiment that we started four years ago and over 1000 seedlings from use of the CGE, in less than half the time."

Impact: Grower has proven a methodology for producing wild berry seedlings that reduces the propagation time by at least 75%.

Outreach: The grower presented the data at multiple community meetings, reaching over 100 potential specialty crop producers. The presentation and information has been accessed on our web site 74 times; as a result of reading the presentation, other growers can now replicate the seed production.

http://dnr.alaska.gov/ag/ag_reportsAAIG2010.htm

Project #2 Alaska Hardy Fertigation System

Goal: To determine if a fertigation system (application of chemicals through irrigation) would enhance plant productivity, time to harvest, etc.

Outcome: Grower determined that two years is not enough time to show any significant changes in plant development. Delays in project implementation and extreme weather resulted in a lack of significant data to date.

Impact: Grower is still waiting to determine full impact.

Outreach: Grower has spoken at two Alaska Peony Growers Association (APGA) meetings, sharing data and information with over 300 flower growers. All details of the project were completely shared, from the type of tubing, the chemicals used and the problems incurred. Other growers now have the ability to replicate the system. The grower has returned to New Zealand twice, where original fertigation system is in use, for more assistance and information.

Project #3 Off-grid Greenhouse

*No SCBG funds were used for construction or capital improvements; matching funds provided by the recipient covered those costs.

Goal: Season extension through energy efficient greenhouse.

Outcome: Grower realized between 3-5 months of additional production time as a result of this project.

Impact: Grower is able to produce significantly more specialty crops, experiment with new heat-loving crops, and extend season, resulting in increased sales.

Outreach: The grower gave a presentation of her findings to 10 community members and other specialty crop producers. The grower has given consultations to at least five other specialty crop producers trying to replicate the system.

Project #4 **Chena Hot Springs LED System**

Goal: To identify ideal LED lights to use in an array in a large arrangement for producing high quality plants for commercial use and to identify if use of LED lights results in energy savings.

Outcome: The grower realized increased production of over 5200 plants per year and a cost savings of $7985 per year.

Impact: The grower has been able to significantly increase production, while still reducing costs, increasing in increased profit.

Outreach: The grower gave to presentations at two different specialty crop producer meetings, reaching over 200 growers.

http://dnr.alaska.gov/ag/Grants/ChenaHotSpringsLEDSystem.pdf

Project #6 **Birch Syrup Tubing/Vacuum Extraction**

Goal: To determine if implementing a tubing/vacuum (T/V) extraction system would increase production while decreasing impact to both the forest ecosystem and individual trees, cut fuel consumption and labor costs, and potentially increase the length of harvest.

Outcome: Sap production per tree was variable across the board, fuel and labor costs were far less in the T/V system, and extension of the harvest in future years seems quite feasible.

Impact: Greater efficiency, higher yield and lower costs resulted in increased production and therefore increased sales.

Outreach: The grower gave a tour of the facility and system with five other birch syrup producers in attendance. Although this number may seem low, it represented over 80% of the birch syrup producers in the state. Other birch syrup producers can now duplicate the system and have learned from the mistakes the project manager made; the project manager has agreed to provide guidance and assistance to other growers who choose to utilize the same TV system.

http://dnr.alaska.gov/ag/Grants/KahiltnaBirchworksReportPhotos.pdf

Project #7 **Cool-Bot Technology**

Goal: To determine if cool-bot technology, in conjunction with a Teds Box, would remove field heat from cut peony and maintain desired temperature during harvest periods.

Outcome: Currently available technology does not result in desired outcomes.

Impact: Grower will continue working with Teds Box manufacturer to create a unit that will meet the expectations and demands of peony growers.

Outreach: Grower presented at two conferences, reaching over 300 specialty crop producers. Other growers benefited from this project in that they now know the results of utilizing the cool-bot and Teds Box. Other growers saved money by not investing in the technology that ultimately did not result in the desired outcome.

http://dnr.alaska.gov/ag/Grants/CoolbotTechnologywithPeoniesReport.pdf

Project #8 **Sod Harvester**

Goal: To reduce costs of producing sod by eliminating labor costs associated with harvest.

Outcome: The grower realized a season extension of three weeks and a dramatic reduction in labor costs. A labor comparison: prior to the implementation of the harvester, grower could harvest 100-150 (approximately 9sq ft each) rolls per hour with a crew of 4-5. The harvester allows for harvest of 1500 square feet per hour with a crew of 2.

Impact: The grower can increase production and sales as result of the season extension and reduction in labor costs.

Outreach: The grower gave a presentation to 75 other specialty crop producers. Producers now fully understand the investment required and benefits associated with upgrading.

http://dnr.alaska.gov/ag/Grants/SodHarvesterFinalReport2010.pdf

Project #9 Greenhouse Apples

*No SCBG funds were used for construction or capital improvements; matching funds provided by the recipient covered those costs.

Goal: To determine if fruit production in Alaska can be successful with the utilization of greenhouses.

Outcome: Grower realized increased production by eliminating some of the most detrimental barriers to fruit production in Alaska, including, moose, bears, and snow damage.

Impact: The grower is still gathering data as trees outside of the greenhouse have been in production for many years. Initial results demonstrate that greenhouse production has a positive impact on overall yield.

Outreach: The grower gave a presentation to 30 other specialty crop producers in Alaska. Other growers benefited from this project in that they now understand techniques that can be utilized to increase fruit production in Alaska.

http://dnr.alaska.gov/ag/Grants/InsulatedGreenhouseforFruitGrowing.pdf

Project #10 Barrel-Washer

Goal: Reduce processing time and therefore increase sales.

Outcome: Grower realized dramatic reduction in processing time, allowing for increased production the following season.

Impact: Increased production will result in increased sales.

Outreach: Grower hosted a demonstration day at his farm with five other specialty crop producers in attendance; grower gave a presentation at a conference with 150 producers in the audience. Grower has allowed other small farmers in the area to utilize the barrel washer at no cost.

Project #11 Hydro-Electric Heated Greenhouse

*No SCBG funds were used for construction or capital improvements; matching funds provided by the recipient covered those costs.

Goal: Extend season through implementation of a hydro-electric energy system.

Outcome: The grower experienced a three-month season extension, virtually resulting in a doubling of his previous growing time.

Impact: Increased production results in increased sales.

Outreach: The grower gave a presentation to 50 specialty crop producers who now understand how to implement hydro-electric techniques to extend their season and increase their production.

http://dnr.alaska.gov/ag/Grants/HydroelectricHeatedGreenhouseBedsReport.pdf

Project #12 Passive Solar Greenhouse

*No SCBG funds were used for construction or capital improvements; matching funds provided by the recipient covered those costs.

Goal: Increase production through earlier seed starting and new variety production with the utilization of a greenhouse.

Outcome: Full results have not been realized as the project was delayed multiple times.

Impact: The grower gave a final presentation of results at the 2013 SARE conference, reaching 150 other specialty crop producers.

Outreach: The grower has hosted multiple farm tours throughout construction to demonstrate techniques to other growers considering utilizing the same techniques; the grower spoke to 150 specialty crop producers in March who now understand and could replicate the techniques utilized in this project.

http://dnr.alaska.gov/ag/Grants/PassiveSolarGreenhouseFinal.pdf

Beneficiaries

Eleven specialty crop producers benefited directly from receiving innovation grants. Presentation audiences totaled a minimum of 1444 specialty crop producers over two years.

Lessons Learned

Managing mini-grants is time consuming. Each individual recipient will need specialized attention and have unique challenges in project implementation, due to weather, budget, and unforeseen circumstances.

Contact Person

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Additional Information

The full list of project reports, power points and additional information regarding this project can be found at http://dnr.alaska.gov/ag/ag_reportsAAIG2010.htm

Project #3 Eat Local Challenge 2010

FINAL REPORT

Project Summary

The food service industry in Alaska is reliant on specialty crops imported from the lower 48. Often Chefs" are unaware of the available of specialty crops grown in Alaska. In order to encourage Chefs to source Alaska Grown specialty crops, the Division launched an Eat Local Challenge (ELC) targeted at consumers who frequent restaurants. The idea was that if consumers requested more Alaska Grown specialty crops products from the restaurants they frequented, in turn, Chefs would request more Alaska Grown specialty crops from their wholesale suppliers.

The first ELC week was in 2008, launched with FY 06 USDA SCBG funding and many improvements have been made over the years. We successfully involved many groups outside of our agency and funding to be involved in and support the project, resulting in many unique activities taking place during the Eat Local Challenge week.

Project Approach

Division staff contracted with a marketing firm to design, develop and launch the ELC campaign in 2010. Staff outlined to the firm and included in the contract the requirement that only specialty crops could be included in the promotion. Staff met with wholesale produce companies to make them aware of the timing of the event, encourage their participation and ask for input. Staff met with specialty crop producers to gather their input and ideas about the event and campaign. Staff encouraged other entities (farmers markets, Governor"s office, etc.) to also capitalize on this effort by creating their own ELC week events.

Goals & Outcomes Achieved

The original goal of this project included

- targeting 50 restaurants to participate in the campaign with at least 25 of them reporting an increase in purchases of Alaska Grown specialty crops during the ELC week,
- having at least 10 producers report an increase in sales during the challenge week and,
- having 100 consumers participate in an online survey portion of the event.

The marketing firm sent promotional media kits with instructions to over 50 restaurants soliciting their participation in the ELC campaign. Thirty restaurants participated in the promotion by handing out the customer surveys; unfortunately only nine restaurants returned the surveys. Only nine restaurants indicated an increase in purchasing, however, this number was not supported with the data gathered from the producers, none of whom reported an increase in sales.

The firm conducted a follow-up survey with 57 restaurants two months after the ELC week with a response rate of 31% (18 restaurants). Based on the responses the following recommendations were provided by the marketing firm:

1. The overwhelming majority of restaurants think their customers appreciate Alaska Grown food - but some believe that seafood over produce is more valued.

2. Cafe posters and "what's in season" charts were identified as promotional items that would be preferred. Many individuals mentioned the season charts would be helpful for kitchen staff orders.

3. The biggest barriers for restaurants sourcing Alaska Grown produce is price, consistent pricing and availability.

Unfortunately, the project was not seen as a success from the perspective of the specialty crop producers surveyed; none of them reported an increase in sales during the ELC week.
Although only 63 consumers participated in the online survey, a paper survey given out at nine participating restaurants resulted in over 1000 respondents.

Beneficiaries

Over 1000 people participated in the 2010 Eat Local Challenge campaign in some capacity – either answering questions in an online/paper survey or participating in an event at a farmers market. This participation is assumed to have lead to greater awareness about the availability of Alaska Grown specialty crops and in turn should lead to increased sales for specialty crop producers.

Lessons Learned

Influencing a private business sector, such as the wholesale produce industry, is a difficult task and should not be taken lightly. Staff at the Division will continue to seek out ways to influence the general public, which will hopefully lead to incremental changes overtime in the wholesale produce industry.

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Additional Information

The nine restaurants that returned their customer response surveys were awarded a plaque of appreciation. Nine customers were selected as "Eat Local Challenge" winners and received an Alaska Grown sweatshirt as a prize.

Lemongrass
THAI CUISINE SINCE 1996
Eat Local Challenge

Project #4 Alaska Peony Cultivation Research & Web Vending Site Development

FINAL REPORT

Project Summary

The Alaska Peony Growers Association (APGA) members have experienced poor growth and vigor in their plants without explanation. A research project was undertaken whereby soil and plant tissue samples collected from Alaska peony farms were compared to similar samples collected from successful lower 48 peony farms. APGA contracted with a horticultural consultant to develop sampling protocols, visit the participant farms, and evaluate the data.

The first group of APGA growers to harvest and sell flowers were not able to sell all of their product due to an inefficient method for putting buyers and sellers together. Any request for peonies was simply circulated amongst the APGA membership at large and left to individual growers to respond; this meant that a single buyer got multiple responses – or none. Neither result was satisfactory and both buyers and sellers were frustrated with this lack of a systematic interface to conduct business. APGA contracted with a web designer to develop an "availability page" whereby each grower would be able to post product information, availability dates, quantities, and product descriptions on an as-needed basis without needing to contact a web master.

Project Approach

For the research component of the project, APGA contracted with a horticultural consultant from Oregon and arranged for grower participation from three lower 48 peony growers and 10 Alaska peony growers. All of the participating growers were assigned five-digit code names so the publically released data could not be linked to any specific farm. This study was designed to establish a baseline of data for Alaskan Peony growers centered on their existing fertility programs, soil conditions and geographic limitations compared to known, quality Peony growers in Oregon"s Northern Willamette valley. It uses

soil and tissue fertility data gathered during the spring/summer of 2010 to evaluate the effectiveness of the individual grower‟s production programs and to highlight the differences between the Alaskan and Oregon environmental conditions affecting the growth of this important perennial cut-flower crop.
A collection protocol brochure was developed and disseminated to all growers documenting the supplies required, timing, mailing instructions and collection methods for the soil and tissue samples. A video training session was also conducted on-line with the help of Ron Illingworth to visually review and explain the collection protocol brochure and to answer any questions from the growers.
Soil and tissue samples were collected; the individual grower data sheets were difficult to collect and many were incomplete. The researcher contacted a few of the growers and went through a standardized list of questions in an effort to fill in the blanks. All the collected soil and tissue data was analyzed and graphs were developed to better illustrate the comparisons of sites and results for the major nutrients, pH, key micronutrients and other influential standards

For the website, APGA first surveyed potential buyers for suggestions of what to include on a seller/buyer web page. The suggestions included:

- Variety type, color and height in cm's;
- Price per stem and price per bundles of 5;
- Packaging info, boxing charges, method of shipping;
- Schedules for varieties‟ availability;
- Photographs of each cultivar; and
- Photographs of the farms themselves and information on how the peonies are grown.

APGA then contracted with a web designer to create the desired interface.

Goals & Outcomes Achieved

The goals of both subsets of this project were 100% achieved. The results of the research study were extensive; the principal findings were summarized by the consultant as:

1. Alaska plants have symptoms consistent with low boron, such as a shortened intermodal spacing and necrosis of leaf tips.
2. Alaska peonies have symptoms consistent with low phosphorous, including red/purple foliage, thin cupped leaves with wavy edges and interveinal chlorosis.
3. Alaska soils are very high in organic matter.

The results indicated the need for increased Phosphorus and Boron availability to the plant. The researcher recommends the manipulation of the soil pH as a method of increasing both elements and a reduction in the use of organic additives that contribute to a higher than normal organic matter content in soils already high in organic matter. Other additives used for fertility should be tested first to determine their nutrient content and applied according to a soil test indicating how much of which elements are required.

The data from this study form a very preliminary look at what are the minimum, optimum and excess plant nutrient concentrations for peonies, something that does not appear to have been systematically studied and/or published previously. The tissue data can be used in conjunction with a farm"s soil data to help refine each growers fertilization program.

The web site upgrades were completed in January and fully utilized during the 2011 harvest season allowing for an updated look, a picture gallery, enhanced navigation controls, improved information management with a dynamic database for instant updates and modifications and improved connectivity between buyers and APGA members.

Beneficiaries

APGA currently recognizes over 100 members, each of whom will eventually benefit from both parts of this project. The data gathered in the research component of this project is available to not only the growers who participated, but also to any peony grower who wants to collect the relevant information from their plants and make comparisons. The web component of this project has benefited 16 grower members who have made sales through the site.

Lessons Learned

APGA members have determined that additional research is necessary to expand upon the findings of this project, including information on things such as testing young leaves rather than basal leaves, testing response to alternative fertilization applications and farm-specific tests for improving plant vitality. The web designer recommended further improvements to the site which could include a members forum, a ListServ to help with communication and a regular newsletter.

Contact Person

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Additional Information

The APGA website is available at www.alaskapeonies.org .

The final findings report from the research consultant is attached to the end of the report as Appendix A.

Project #5 2010 Teacher Scholarship Program

FINAL REPORT

Project Summary

The purpose of the Teacher Scholarship Program is to expand the agriculture knowledge of both teachers and students in Alaska. The Alaska Agriculture in the Classroom (AITC) program has been widely successful at educating those it reaches. However, one common complaint is that it is hard for teachers to secure funding to implement the programs that they learn about through AITC

training. The agriculture education scholarships will allow teachers to implement specialty crop education into their curriculums; this program will expand the awareness of and appreciation for the Alaska specialty crop industries leading to increased demand, sales and support.

Project Approach

The Division announced the availability of funding through the below RFP which was announced through e-mail newsletters, the Division website, various school district contacts as well as the AITC database.

Thursday, April 29, 2010

2010 Alaska Teachers' Scholarship Program Request for Proposals ~ Application Deadline August 31st, 2010

To: Interested Alaskan Teachers

Director Franci Havemeister is pleased to announce the availability of funds through the new Alaska Teachers' Scholarship Program (ATSP). Funding is a result of the successful USDA Specialty Crop Block Grant (SCBG) proposal submitted by the Division of Agriculture.

Eligible *specialty crops* include fruits, vegetables, and nursery crops including floriculture. Your projects must focus on eligible Alaska Grown specialty crops. Crops that **DO NOT** qualify as specialty crops under the federal agreement are: feed crops (such as barley, corn, hay, oats) livestock, dairy products, eggs and aquaculture products.

Scholarship amounts for the ATSP are $500 each. Applicants will be eligible for up 50% of the scholarship amount ($250) up front. After the final report is turned in, the remaining 50% ($250) will be paid out to awarded recipients. Contracts will be made with the teachers directly, and will not go through the school districts. Because the funding amount is under $600 you will not have to report this as personal income.

The purpose of the ATSP is to introduce or expand agricultural in your curriculum. Scholarship funding can be used to purchase: books, videos, supplies, transportation to participate in a farm tour, etc. Teachers can apply independently for scholarships or teachers can collaborate with one another on their projects. If teachers do apply for a "group" project, each will still be responsible to complete an application and final report. This scholarship program is open to home schooling teachers. If you home school, and only have a few children, you can partner with other teachers to reach the minimum number of 20 students/ project. There is an exception for villages, where only a minimum of 10 students must be met. For village schools the scholarship amount is $300 per 10 students.

Requirements of the contracts will include:

- ***Contracting directly with teachers, not with the school districts.***
- ***Minimum number of 20 students reached (for each $500 grant) through the curriculum utilized.***
- ***Maximum of three teachers collaborating per project (for a total of $1500 and minimum of 60 students reached).***
- ***Village schools must reach 10 students per $300 scholarship. Collaborating with other***

villages is approved and encouraged. Maximum of three teachers collaborating per project (for a total of $900 per project and minimum of 30 students reached).

- ***Documenting how you tracked results to demonstrate that students have a better understanding of agriculture.***
- ***A list of items purchased with receipts.***
- ***Conducting two surveys, one prior to and one following the implementation of the project, to gauge students' knowledge of agriculture.***

Applicants should submit proposals using the proposal requirements supplied. Please review the application information **carefully**. The application, evaluation methods, sample proposal and budget sheet can be found online. Click here to access it.

Proposals will be evaluated based on the curriculum outlined, number of students reached and future ability to utilize curriculum, participation and collaboration with Ag in the Classroom (AITC) or an expert in your project area. Please see the criteria and points associated with each evaluation method. The Division of Agriculture intends to award multiple contracts from this solicitation.

Proposals must be received at either the Central or Northern Region Division of Agriculture (Division) offices (see above addresses) by 5:00 pm on Tuesday, August 31, 2010.

Selected proposals will be announced by September 17, 2010. Projects and reports must be complete and submitted to the Central office of the Division by 5:00 pm on June 18, 2011. Final reports received after that time and date will be considered late and influence evaluation points given on future proposals. If you have any questions, please contact Patricia O'Neil at Patricia.ONeil@alaska.gov, (907) 761-3858.

Sincerely,
Patricia O'Neil Natural Resource Specialist
Cc: Franci Havemeister Douglas Warner, Marketing & Inspection Administrator

The Division received 17 grant applications, for a total funding request of $8,300. We awarded all 17 proposals grants for a total of $8,300.

Goals & Outcomes Achieved

While it was anticipated that 24 teachers would apply for and receive funding from this project, only 17 applications were received. Although the number of teachers participating was less than expected, the outreach to students exceeded the goal of 480 by 30 students. All of the students were surveyed before and after the activities to gauge knowledge and awareness of Alaska Grown specialty crops. The average rate of knowledge pre-activity was 41%; the average rate of knowledge post-activity was 89%.

Beneficiaries

Seventeen teachers and 510 students benefited from this project through an increased awareness of Alaska Grown specialty crops and specialty crop production.

Lessons Learned

Teachers are mobile, often changing schools and school districts at the end of a school year. The timing of the grant was meant to coincide with the school year, such that project reports would be turned in prior to the end of the school year. However, if a project experienced any delays, then teachers were difficult (if not impossible) to reach beyond the school year.

Contact Person

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Project #6 2010 Alaska Grown Source Book

FINAL REPORT

Project Summary

In order to increase access to Alaska Grown specialty crop producers, the Division produces and releases the Alaska Grown Source Book (AGSB) every two years. The AGSB is the only statewide listing of all of the farmers who have products for sale in Alaska.

The AGSB was first funded with 2007 SCBG funding and underwent a print design overhaul. In 2010 the focus was on updating the web component of the Source Book, making information submission easier for the farmers and information access easier for the users.

Project Approach

Staff began outreaching to Alaskan farmers about the opportunity to be listed in the AGSB, with a focus on specialty crop producers, in the spring of 2010. Staff made announcements at four different growers meetings, sent postcards out to over 400 recipients and mentioned the availability in the Division e-newsletter.

Staff released an official Request for Proposals to printing companies in Alaska to find the best suited for production of the final print document.
Specialty crop funding was solely used to enhance the competitiveness of specialty crops; State funds were utilized on the project which covered the inclusion of non-specialty crop farmers in the publication.

Goals & Outcomes Achieved

The original goal of this project was to increase the number of producers listed in the book by 10% over the 2008 print publication. When the deadline for the print publication passed, staff had missed this goal by 1 farmer. Throughout the year staff continued to accept information for the online version of the document and have now surpassed the original goal; one hundred and ninety-two farms are listed in the online version, and 11.5% increase over 2008.

Of the 188 farmers listed in the print version, 127 (68%) are specialty crop producers. Of the 192 farms listed on the online version, 131 (68%) are specialty crop producers.

Beneficiaries

One hundred and ninety-two farms benefited from being listed in the AGSB, the only statewide listing of farmers and producers in Alaska. Over 5000 members of the public benefited from receiving a print copy of the AGSB. The statistics from the web site show that on average 387 people per month view the AGSB online, with 75% of them viewing the vegetable break-out page.

Lessons Learned

The Division continues to seek out methodologies which will allow for ease of use both by the farmers submitting their information for the book and end users trying to access the information.

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Additional Information

The AGSB is available on the Division of Agriculture website at
http://dnr.alaska.gov/ag/ag_AKGrownResourceBook.htm

Project #7 Alaska Grown Twist Ties

FINAL REPORT

Project Summary

In order to highlight Alaska Grown specialty crops in the marketplace (grocery stores, farmers markets, farm stands) the Division of Agriculture purchased and distributed twist ties.

Project Approach

In accordance with State Law, the Division solicited bids from multiple companies that manufacture produce twist ties and selected the low cost bidder. Upon receipt of the twist ties, they were widely distributed to grocery stores, farmers markets, and to individual farmers with the clear instruction that they were ONLY to be used on Alaska Grown specialty crops. Division staff then conducted retail visits to ensure proper use.

Goals & Outcomes Achieved

The goal of increased awareness and additional sales was achieved. The retail grocery store providing sales data indicated a 7% increase over last year. Although the original goal was 10%, the reduced impact could be attributed to many other circumstances, primarily that of the extreme cold weather that resulted in produce reaching retail outlets later than normal.

Eight of the ten producers contact at farmers markets indicated positive responses and increased interaction with customers as a result of using the new Alaska Grown twist ties.

Beneficiaries

The beneficiaries of this project included over 100 specialty crop producers that received the twist ties and saw increased sales as a result of using them.

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APPENDIX A

DETERMINING A BASELINE OF EXISTING FERTILITY APPLICATIONS IN ALASKAN PEONY PRODUCTION COMPARED TO OREGON PEONY PRODUCTION

APGA PROJECT #2010-01

W. Donald Richards[i], December 29, 2010

Abstract. A one-year study was designed to determine a baseline of existing fertility applications in assorted Peony production sites close to Homer, Soldotna and Fairbanks, Alaska compared to two sites in Oregon's upper Willamette valley. The Oregon sites were chosen based on the known plant quality of each producer assuming their balanced fertility programs played a major role in that quality. Alaskan growers had reported leaf and flower development inconsistent with what they had observed from nurseries in the lower 48 states. The trial consisted of both soil and tissue analyses from the two Oregon growers compared to nine Alaskan growers, some with multiple sites. Both varietal hybrid Peony and *lactiflora* species plants were included in this trial. A collection protocol was determined and communicated to each grower via video training, a brochure and verbally by telephone or in person. Soil sample collections were made from each site to correspond with plant emergence and bloom time. Tissue sample collections were made from each site to correspond with a point in time when the plants had their first three sets of leaves, again approximately two weeks later, again approximately four weeks later, and a final sample at bloom time. Both foliage and petioles were collected from older leaf-sets in an effort to capture stored nutrients available to the plant rather than from the terminal growth where nutrient levels could be erratic and unreliable as a standard of measure. General maintenance and care were given to the plants at each site with no variation in the normal fertility programs. Irrigation and general husbandry practices varied from site to site. Weather observations were made and reflected the geographic differences between Oregon and Alaska as well as between the individual Alaskan sites in Homer, Soldotna and Fairbanks where temperatures and rainfall varied substantially. A mid-season visit to the Oregon and Alaskan sites was made by the researcher to visually record any growth symptoms in the Peony plants for further analysis. Final observations were made comparing the soil and tissue analyses between the sites and a report of findings and conclusions is offered herein. The results indicated the need for increased Phosphorus and Boron availability to the plant. The researcher recommends the manipulation of the soil pH as a method of increasing both elements and a reduction in the use of organic additives that contribute to a higher than normal organic matter content in soils already high in organic matter. Other additives used for fertility should be tested first to determine their nutrient content and applied according to a soil test indicating how much of which elements are required.

Introduction

This study was designed to establish a baseline of data for Alaskan Peony growers centered on their existing fertility programs, soil conditions and geographic limitations compared to known, quality Peony growers in Oregon's Northern Willamette valley. It uses soil and tissue fertility data gathered during the spring/summer of 2010 to evaluate the effectiveness of the individual grower's production programs and to highlight the differences between the Alaskan and Oregon environmental conditions affecting the growth of this important perennial cut-flower crop.

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Alaskan Department of Agriculture identified perennial Peony plants used for cut flowers as a potential cash-crop for small land owners in Alaska. Perennial Peony cut flowers from Alaska would fill a niche market demand for Peony flowers at a time of year when other growers from the lower 48 states have already completed their deliveries. A small group of interested individuals established the Alaska Peony Growers Association to represent its members and provide industry knowledge, production training/information as well as market support. This study is part of a combined effort to improve their member's understanding of the basics of fertility and its relationship to quality cut flowers.

The Alaskan sites close to the Ocean (Homer and Soldotna) are on alluvial soil types with gentle slopes where boreal forests existed before cultivation, on tidal grasslands where adequate drainage and cultivation was possible and sometimes on former farm land. Permafrost is a factor in the production ability on inland Alaskan sites. It was very pronounced on sites close to Fairbanks where winter temperatures can reach extreme lows without coastal marine influence. This permafrost layer is shallow and just below the Peony plant root zone in many instances. Some growers use raised beds and/or ground cloth cover in attempt to increase the soil profile (depth) and temperature. Growers at all Alaskan sites consistently struggle with moose damage, invasive weeds such as horsetail and fireweed, occasional hail damage, insect pests such as thrips and spittle bugs and disease pressure from Botrytis, Phytophthora and other water-mold organisms. Many of these were evident during the mid-season visit by the researcher. Although the crops were generally planted on spacing similar to those utilized in the lower 48 states, this spacing appears to be a bit too close together for the Alaskan sites based on the amount of disease pressure and climatic conditions observed by the researcher. The data collected during this study was needed to determine a baseline for best management practices specifically related to fertility and improved growth and flower development for sales as cut flowers. The Oregon sites in the upper Willamette river valley of Oregon's prime farmland are also on alluvial soil types with no slopes where farmland existed before cultivation of perennial Peony plants (typically food crops or grass seed) and adequate drainage exists. Permafrost is not an issue in Oregon and the loamy soils are consistent throughout the soil profile from the topsoil level to well below plow depth. Growers in Oregon use raised beds for improved drainage and aeration and clean-cultivation production methods (primarily mechanical) to eliminate weed pressure. Thrips and spittle bugs can also be a problem at these sites as well, but are monitored closely and treated with pesticides if the threshold for damage is exceeded. Deer damage is rare, but possible in Oregon's Willamette valley. Hail damage is an occasional problem. Disease pressure from Botrytis, Phytophthora and other water-mold organisms is also a problem in Oregon, but similar to insect control, the plants are monitored closely and treated with pesticides if the threshold for damage is exceeded.

The objectives of this study were to: 1) determine the baseline of fertility at two Oregon nurseries known for their high-quality cut Peony flowers; 2) determine the comparative baseline fertility at nine Alaskan Peony nurseries located in and around Homer, Soldotna and Fairbanks; and 3) identify any individual nutrients or fertility factors that could be improved by the Alaskan growers to influence their cut-flower Peony crops.

Materials and Methods

Cooperative nursery sites were identified in both Oregon and Alaska to compare fertility data and production methods. Meetings were arranged with the Oregon growers to discuss the methodology and anticipated outcomes.

A collection protocol brochure was developed and disseminated to all growers documenting the supplies required, timing, mailing instructions and collection methods for the soil and tissue samples.

A video training session was also conducted on-line with the help of Ron Illingworth to visually review and explain the collection protocol brochure and to answer any questions from the growers. Soil and tissue samples were collected as described in the attached collection protocol brochure. The individual grower data sheets were difficult to collect and many were incomplete. The researcher contacted a few of the growers and went through a standardized list of questions in an effort to fill in the blanks.

The researcher visited some of the Alaskan sites and both of the Oregon sites to make visual observations regarding the physical attributes of each site and the plant growth at the time. The Oregon visits were conducted in early June and the Alaskan visits were in mid-July. Photographs were taken at several sites in Alaska and are attached as Photographic Exhibits 1 through 8. The Alaskan growers in Homer were all experiencing a cooler and wetter than normal summer and the plants were somewhat stunted in appearance. Many exhibited symptoms consistent with low Boron[1] levels such as shortened internodal spacing and necrosis of the leaf tips as well as low Phosphorus levels where the symptoms exhibited were red or purple foliage, thin, cupped leaves with wavy edges and interveinal chlorosis. Some of the causes for these symptoms may include cool soil temperatures and high organic matter content. Some of the necrosis was attributable to Botrytis gray mold due to cool, wet conditions and poor air circulation around much of the foliage due to the close spacing. The only site where Botrytis was not observed as a significant problem was the Botanical Garden where plants were adequately spaced for improved air circulation. The increased presence of anthocyanin (red color) pigment in some of the Alaskan-grown plants appears to be a symptom of stress and may be associated with low Boron and Phosphorus and poor oxygenation caused by a shallow soil profile diminished by the presence of permafrost from the inland sites. Nitrogen and Potassium were adequate in all sites and the remainder of micronutrients are in good order and in a balanced condition. Calcium and Magnesium ratios were a little off in some of the sites, but may be adjusted by the addition of calcium lime (calcium carbonate $CaCO_3$) or dolomitic lime (calcium magnesium carbonate $CaMgCO_3$) dependant on the specific conditions. A few plants exhibited the symptoms of a virus or chimera, but this was not widespread and was inconsistent throughout the Alaskan sites.

The plants grown in Oregon exhibited none of these symptoms.
The researcher employed the assistance of other plant fertility professionals. Meetings with Mr. Darcy Peebles[2] and Dr. James Owen[3] were arranged to review the soil and tissue data and the photographic exhibits and to gain insight regarding potential causes and effects observed at individual grower sites.

[1] *Plant Analysis Handbook*, Mills, Harry A. and J. Benton Jones, Jr., 1996, Chapter 2, pg.15-18 and pg. 35-39. [2] Darcy Peebles, Agronomist with A & L Western Agricultural Laboratories, Portland, Oregon. [3] Dr. James Owen, Ornamental Horticulture Fertility Specialist, North Willamette Research and Extension
Service, Oregon State University.

Results and Discussion

All the collected soil and tissue data was analyzed and graphs were developed to better illustrate the comparisons of sites and results for the major nutrients, pH, key micronutrients and other influential standards.

Sampling dates and the number of times collections should occur were not strictly adhered to, but the data was sufficient for developing a thesis of cause and effect.

The soil organic matter content for all Alaskan locations was consistently higher than what was found in Oregon. This is partially attributable to the amount of time the Oregon sites have been under agricultural cultivation and for individual Alaskan growers, partially attributable to the amount of organic additives such as fishy peat, cow manure, horse manure, llama manure, fish bone fertilizer, vegetation compost, bone meal, kelp root dip, compost tea and other amendments applied to the crops. A higher than normal organic matter content can contribute to low Phosphorus conversion from soil to tissue and low to moderately-low Boron conversion from soil to tissue. These in turn contribute to symptoms such as red or purple foliage, thin, cupped leaves with wavy edges, interveinal chlorosis, shortened internodal spacing and some necrosis in the leaf tips as described earlier. A soil high in organic matter also has a high cation exchange capacity (CEC) because it holds nutrients tight to the soil particles not allowing them to go in to solution.

Since good bud set and flower production is dependent on adequate Phosphorus reserves, this particular nutrient deficiency is magnified in importance as the plants become older and ready to commercially harvest. Phosphorus availability is highest between pH 6.5 and 7.0 (at a pH of 7.0 the millivolt (mV) value is 0).

The best approach for modifying the Phosphorus content in plant tissue on small acreages is by increasing pH and supplementing this nutrient with liquid fertilizer applications. The one site using liquid fertilization (Merlo) appears to be having success with this technique as was exhibited by the rich green foliage and stem color and good bud set observed. Increasing the pH also has a positive effect on the availability of existing Boron cations. Most of the sites had adequate Boron content in the soil, but the conversion from soil Boron to tissue Boron was poor. The foliar symptoms were more prevalent in the Homer and Soldotna, Alaska locations and this may be attributed to cooler soil temperatures and higher organic matter content. Generally speaking, sites that were once farmland, native grasslands or tidal grasslands produced a better plant than those that were once boreal forest. The most impressive plants were observed at the Botanical Garden where the researcher is unaware of the exact fertilizer regime. It would be interesting to know exactly what was being done at this site.

Increasing soil pH takes time. As pH only measures the hydrogen (H^+) in soil solution, buffer pH was used as the reviewed measure in our observations. The buffer pH measures all the hydrogen in both soil solution and the attached soil particles giving a more accurate reading for organic soils. A single application of lime will not significantly affect the soil pH in one season. The best time to apply lime is in late summer/early fall. This allows the lime to be carried in to the soil by rainfall and begin the work of modification of the soil profile. If a fall application is not possible, an early spring application after the soil has thawed will also work. The lime application should be my means of Dolomite in soils where the Magnesium level is low (Zuma 1, 2 & 3) or by Calcium Carbonate where the Magnesium levels are adequate (everywhere else). Prilled forms of both Dolomite and Calcium Carbonate are available as Doloprill and Calprill. Rates vary, but in order to raise the pH from 6.6 to 7.0, a rate of 4,000 pounds per acre (about 8.5 pounds per 100 square feet) over two years would be considered as a typical application rate. This roughly equates to 1,000 pounds of lime per acre for each 1/10 pH unit less than 7.0.

Field preparation was observed at only one location in Homer and the amount of residue remaining on the soil surface during planting was extensive. It is understood this may not be typical of all fields prepared for planting in Alaska. Typically, it is better to rough plow the soil in the fall well ahead of the first frost allowing enough time for the soil to dry eliminating some of the pressure to plow, disc and roto-till the soil during the wet spring months. This will also help with weed suppression. Planting spacing on most plants observed (with the exception of those at the Botanical Garden) were all generally too close together for the conditions. Although this may be the typical planting spacing recommended by growers from the lower 48 states or in trade magazines, the overlapping foliage and the wet spring conditions in Alaska contribute to the incidence and severity of Botrytis gray mold and other harmful organisms. When space is available, a wider spacing between plants will allow for better air circulation for improved disease prevention, better root development outside the planting hole and an increased ability to develop stiff flower stems from the natural callous built by the action of gently swaying in the wind.

The use of drip tape installed at planting time is recommended as a method to reduce the amount of excess water applied to the foliage, which will help with disease prevention and works as an excellent delivery method for subsurface, soluble, liquid fertilizer applications closest to the plant roots. This could also be installed post planting along the side of the plants if desired. It is understood that filtering of these systems is critical to proper function. Make sure this is addressed when designing a system. Growers already utilizing these systems are perfectly set up for liquid fertilizer applications with only minor additional design, set-up and implementation costs required. Refer to this web site http://www.ehow.com/video_4427688_using-drip-tape-water-garden.html for additional information on how to set up a simple drip tape system.

Fertilization regimes vary widely from grower to grower. Applications of commercial fertilizers ranging from 0-45-0 to 20-20-20 and every variation in between were utilized along with the organic or natural amendments where the fertility levels are an unknown. The Oregon growers were consistent in their use of commercial fertilizer applications based on soil test results and tailored to their particular soil types. No organic or natural amendments were applied. However, few of the

natural materials available to the Alaskan growers are commercially available in Oregon. This variation in fertility adjustment techniques may offer some unique challenges to Alaskan growers.

References Cited

Western Fertilizer Handbook; Hawkes, George R., et.al; 1980. *Agronomy Handbook*; Thorup, R.M., PhD; 1984. *Commercial Specialty Cut Flower Production – Peonies*; Cooperative Extension Service, Kansas State University; Stevens, Susan, et.al; 1993. *Plant Analysis Handbook;* Mills, Harry A. and J. Benton Jones, Jr.; 1996.

Soil Fertility for Field-grown Cut Flowers; Greenhouse Product News; Cox, Douglas; 2002.
Dr. James Owen, Ornamental Horticulture Fertility Specialist; North Willamette Research and Extension Service, Oregon State University; 2010.

Darcy Peebles, Agronomist with A & L Western Agricultural Laboratories; Portland, Oregon; 2010.
Charles Knight, Northern Region Manager, Division of Agriculture, State of Alaska, 2010.

Proposed Future Studies

Based on the results of this study, a one-two year study evaluating the fertility adjustments recommended in this report could be set up utilizing the same participants.

Photographic Exhibits

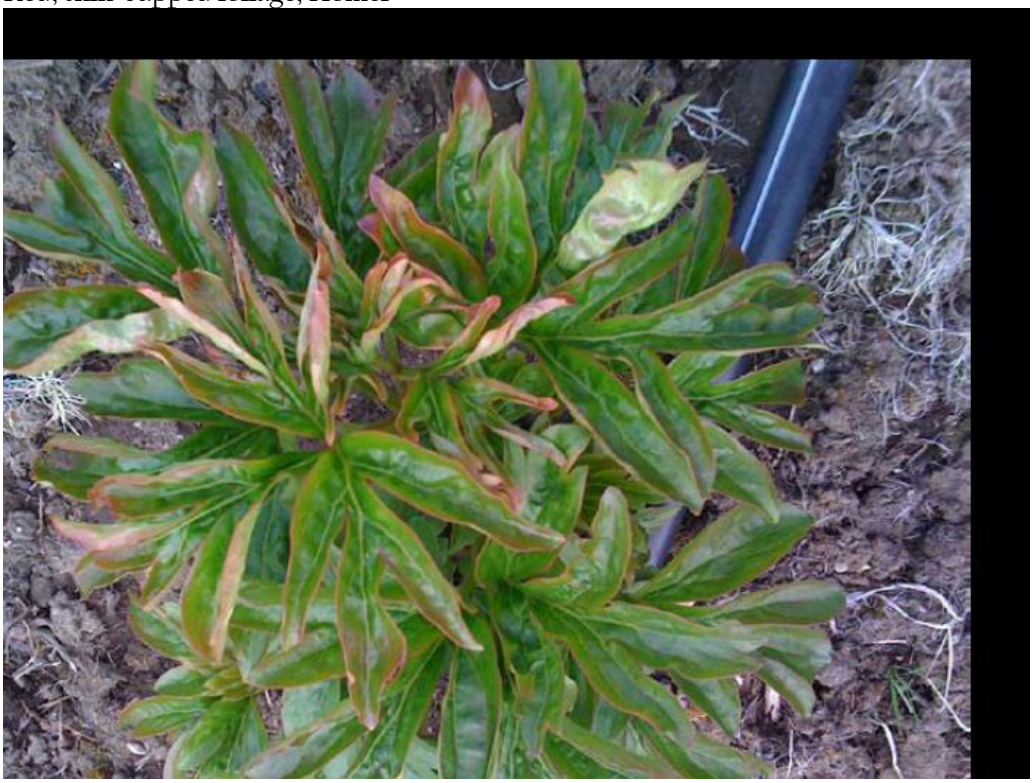
Alaska Peony Growers Association Project #2010-01

Peony Flower Ready to Harvest

Mature Peony Plants, Homer

Botrytscinerea Symptoms, Homer

Red, thin-cupped foliage, Homer



Virus Symptoms, Fairbanks