



Specialty Crop Block Grant

Lee Boyer

**USDA AMS
Project Number
12-25-B-0878**

**Annual
Performance
Report**

2011

JUNE 13

Genetic Improvement and Cultivar Development to Enhance Montana Dry Pea and Chickpea Production and Trade

Project Summary:

Dry pea, an important specialty crop in Montana, is not only an important commodity to Montana economy, but also serves as a crucial rotation crop with cereals (the major crops in Montana) for better disease and weed control, and biological nitrogen fixation. In recent years, dry pea planting acres have increased rapidly in Montana, but the cultivar development is behind the industry demand. Although several commercial field pea cultivars have been generally successfully grown in Montana, the cultivars were developed either in the Pacific Northwest, Canada, or Europe and could not realize the highest yield potential due to the difference in climate and soil conditions. Chickpea, another specialty crop for Montana, has declined rapidly in production, due to lack of disease resistant cultivars. Montana dry pea and chickpea producers have identified cultivar development and evaluation the primary research direction.

Scientists at the Central Agricultural Research Center (CARC), Montana State University (MSU) have been working with breeders from Pacific Northwest, Canada, and Europe to evaluate their advanced breeding lines and commercial cultivars for the adaptation to Montana soil and climate conditions. However, cultivars and advanced breeding lines obtained from the breeding programs were primarily selected under conditions where the breeding programs located and not under conditions typical of the northern plains. Specific selection of breeding lines for the new and expanding northern plains production region should be accomplished in the early stages of the breeding process and in the specific target environment. Selection within segregating populations in the target environment would identify specifically adapted genetic material and help ensure that the material fits the needs of local producers.

Project Approach:

One each of pea and chickpea nurseries of segregating breeding populations was planted at CARC in the spring 2008, and individual plants that demonstrate good agronomic characteristic and seed quality were selected from the segregating breeding populations. The breeding material included in those nurseries was specifically selected to address the problems of Montana. Specifically, pea breeding populations were chosen that will segregate for resistance to powdery mildew and *Ascochyta* blight, the semi-leafless trait, stiff upright stems and high yields. Chickpea breeding populations for inclusion in the nurseries included those with genes for resistance to the prevailing pathotypes of *Ascochyta rabiei* that cause *Ascochyta* blight, large seed size and high yields. Those selected individual plants were threshed separately in the laboratory by hand. Seeds collected from each plant were planted in a single row trial using a single row planter in the spring 2009 at CARC. Plants from each single row were harvested and threshed by hand. Seeds from those single rows were examined and screened for quality and potential end users. So far, we have selected 170 green pea, 87 yellow pea, 3 orange pea, 12 marrow fat pea, 9 black eye pea, and 10 wrinkled pea lines. Total of 36 chickpea lines (compound leaf and simple leaf types) were also selected. These lines were planted in single rows in 2010 for further screening and seed increasing.

The PI in this project realized the breeding and cultivar development is a multi-year effort. To meet the producer's immediate needs, a state-wide variety trial was established in 2008. Commonly grown commercial cultivars and advanced breeding lines were acquired from various breeding programs and private companies. These cultivars were planted at nine locations across Montana with distinct climate and soil conditions (seven MSU experiment stations and 2 production farms). The experiment was a randomized complete block design with 4 replications, and the plot dimensions were 6 ft. x 20ft.

planting date, days to flowering, plant height, lodging, seed size, and yield were recorded. Crop tours and field days were organized at several of the testing sites to give producers a visual comparison of cultivar performances. A Montana Pulse Day was organized by Northern Pulse Growers and Montana Department of Agriculture in Great Falls, MT on December 1st, 2009 with over 250 producers attending the meeting. Information from this project was presented at the meeting. Summaries of the state-wide trial have been posted on our website and also disseminated to producers in paper prints. Many scientists and technicians at the seven MSU research centers have made great contributions to this state-wide variety trial, participating farmers have also contributed land and time to the project. The individuals include:

Karnes Neill, Research Associate, CARC, Moccasin, MT
Johanna Hesar, Research Assistant III, CARC, Moccasin, MT
Kelly Arnold, Agricultural Field Technician, CARC, Moccasin, MT
Gregg Carlson, Superintendent/Associate Professor - Agronomy, NARC, Havre, MT
Peggy Lamb, Research Associate-Agronomy, NARC, Havre, MT
Grant Jackson, Professor - Agronomy, WTARC, Conrad, MT
John Miller, Research Associate-Agronomy, WTARC, Conrad, MT
Heather Mason, Assistant Professor - Agronomy, NWARC, Creston, MT
Louise Strange, Agricultural Research Specialist III - Agronomy, NWARC, Creston, MT
Malvern Westcott, Superintendent/Prof - Agronomy, WARC, Corvallis, MT
Marty Knox, Agricultural Research Specialist III, WARC, Corvallis, MT
Joyce Eckhoff, Associate Professor - Agronomy, EARC, Sidney, MT
Ken Kephart, Department Head/Professor – Agronomy, SARC, Huntley, MT
Geraldine (Gigi) Opena, Research Associate – Agronomy, SARC, Huntley, MT
Perry Miller, Associate Professor - Cropping Systems, MSU-Bozeman, Bozeman, MT
Jeff Holmes, Research Associate, MSU-Bozeman, Bozeman, MT
Marvin Tarum, Producer, Richland, MT
Verlin Koenig, MSU-AES, Valley County Extension Agent-retired, Glasgow, MT
Richard Fulton, Producer, Richland, MT
Steven Miner, Producer, Richland, MT

Goals and Outcomes Achieved:

The ultimate goal of this project is to select and develop suitable cultivars of pea and chickpea that adapted well to Montana's climate and soil conditions with disease resistance, high yield, and good quality.

Genetic improvement and cultivar development requires multi-year efforts. We have made good progress toward the achievement. So far we have selected 170 green peas, 87 yellow peas, 3 orange peas, 12 marrow fat peas, 9 black eye peas, and 10 wrinkled pea breeding lines. We also selected 36 chickpea lines (compound leaf and simple leaf types). Results are very promising.

In the state-wide variety trial, about 13 pea and 13 lentil cultivars were conducted at 9 locations for two years (chickpea cultivars were only tested at two locations due to the disease pressure). Farmers close to each testing site across the state were invited to see the cultivar performances at specific locations during the crop tours and field days, which helps them to choose what cultivar to grow.

Furthermore, the principle investigator at the MSU/CARC has established corporations with dry pea and chickpea breeders at the USDA-ARS Legume Genetics and Physiology Research Unit at Pullman, WA

and the North Dakota State University at Fargo, ND. The early generation breeding material collected from the breeders at Pullman and Fargo has been planted at CARC for evaluation and selection.

Beneficiaries:

As of 2010, the dry pea planting acres have reached 240,000 acres in Montana, and the lentil planting acres increased from 122,000 acres in 2009 to 260,000 acres in 2010. Although the expansion of the production is mainly determined by the economic returns and rotation benefits of those crops, the state-wide variety trial has provided visual demonstration to farmers about pea and lentil adaptation to climate and soil conditions across Montana.

Field days organized at each of MSU research centers, and the Montana Pulse Day held in Great Falls, MT have provided more comprehensive information to producers on pea and lentil variety performance, production technology, and economical returns etc.

All these activities have helped Montana farmers to understand and adopt these specialty crops. The expansion of pea and lentil planting area from northeastern Montana to central and north central Montana may reflect a portion of the beneficiaries of this research project. Because of the expansion of production area, several pea and lentil buyers have set up buying and processing facilities at several locations in Montana.

Lessons Learned:

Chickpea is most susceptible to Ascochyta blight. Several chickpea cultivars performed well at central Montana were severely damaged by the disease at northeastern Montana in 2010. Cultivar development for Ascochyta resistance will be a multi-year effort. The integrated pest management (IPM) strategies (including disease resistant cultivars, fungicide applications, and cultural practices) will be needed for chickpea production.

Contact Person:

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Moccasin, MT 59462

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Additional Information:

The funding from this Specialty Crop Block Grant only supported the planting, selection, harvesting, and sample processing of pea and chickpea plant population and single row nurseries. The state-wide pea and lentil variety trials at seven MSU research centers and two producer farms were supported by the Montana Agricultural Experiment Station and the USA Dry Pea and Lentil Council. The PI's salary is paid by Montana State University.

Each of the 2009 state-wide pea and lentil variety trials consisted of 13 pea cultivars and 13 lentil cultivars. Of the 13 pea cultivars, five are commercially available smooth green, five are commercially available smooth yellow and three are experimental smooth yellow dry pea lines from the USDA-ARS Grain Legume Genetics and Physiology program at Pullman, Washington; of the 13 lentil cultivars, four

are commercially available medium green varieties, two are commercially available small red varieties, three are commercially available large green varieties, and four are experimental lines from the USDA-ARS program. A copy of the 2009 state-wide variety trial report is attached to this project report.

Nursery Promotion of Native Plants & Xeriscaping

PROJECT SUMMARY

Montana Nursery and Land Association (MNLA) sees an important need to educate nursery and landscape professionals and their customers regarding the use of plants native to Montana, and to increase xeriscaping throughout the state. Because Montana's native plant materials are suited to Montana's unique growing conditions, they require less water, fewer pesticides, and a reduced amount of fertilizers in their maintenance. By promoting the use of natives, we will also help to reduce the influx of competing introduced and noxious plant species.

Xeriscaping is an important step in planting residential and commercial properties for long term sustainability, as it dramatically reduces water requirements, leaving precious water resources available for agricultural crops, and general human needs. The MNLA believes that these initiatives will increase the revenues to Montana growers and nurseries from local plant material sales, reduce the demand on our water systems, help to protect waterways and soils from nitrogen- and phosphorous-laden runoff, and reduce the amount of excess carbon contribution to the atmosphere by having fewer plant materials moved long distances by truck.

PROJECT APPROACH

Promotional Programs

Educational Presentations:

We hired and provided 5 professional speakers to provide individual 1-hour presentations on native plant & xeriscaping topics and the Montana Green Expo. Speakers included Dan Heims of Terra Nova Nurseries, Kathy Settevendemie of the Native Plant Society, Tara Luna a Glacier Park Botanist, David Schmetterling a wildlife biologist and native plant expert, and Tim Meikle of Great Bear Restoration. These sessions were attended by approximately 500 industry professionals including nursery owners, growers, retailers, landscapers, and landscape designers. We also produced two large displays, and had three native plant booths at the Montana Green Expo (Center for Native Plants, Montana Native Plant Society, and the University Of Montana Native Plant group. Each booth was visited by about 500 attendees.

Seminars:

We developed, marketed, and ran three seminars in three cities: Bozeman, Billings, and Great Falls. Tim Meikle of Great Bear Restoration, Jolene Rieck from Peeks to Plains Design, and Kathy Settevendemie from Blackfoot Native Plants were the three seminar speakers. There were approximately 50-75 attendees at each of the three city seminars. Attendees included nursery owners, growers, retailers, landscapers, and landscape designers.

GOALS AND OUTCOMES ACHIEVED

Booklets:

The ***Native Plants in Montana*** booklet was 36 pages, full color, with a section on Getting to Know, Grow, and Use Native Plants; Using Native Plants; Thinking Native; and a complete listing of Native Plants divided into Aquatics, Cactus, Grasses, Groundcovers, Shrubs, Trees, Vines, Wetlands, and Wildflowers, with a full legend. It included 144 color plates and resource links. Contributors of materials included the Blackfoot Native Nursery and the Montana Native Plant Society. We published 2000 Native Plant booklets which were distributed at the Montana Green Expo, the Native Plant Seminar Series, and through MNLA member organizations.

Drought Tolerant Plants & Xeriscaping in Montana included sections on Drought Tolerant Plants & Xeriscaping, a complete listing of plants, 48 color plates, a common name/Latin name cross reference, and resource links. Contributors of materials included Gardening Under the Big Sky, Blackfoot Native Plants, and numerous public domain photos. We published and distributed 1000 Drought Tolerant booklets which were distributed at the Montana Green Expo, the Native Plant Seminar Series, and through MNLA member organizations.

Website Marketing:

We sent out direct mail pieces and did blast email mailings to drive industry people to our website where the booklets, seminar information, and Montana Green Expo talks were posted.

In the *Goals and Outcomes Achieved* section, please report on the Goals listed in your approved State Plan. Specifically, please indicate your progress towards the following:

Increase industry and consumer awareness of the importance and benefits of xeriscaping, and Increase industry and consumer awareness of the importance and benefits of growing and using native plant materials.

We increased industry and consumer awareness of the importance and benefits of growing and using native plant materials and the importance and benefits of xeriscaping by exposing approximately 2000 landscape and nursery professional to our content, including seminar attendees Montana Green Expo attendees, and recipients of the booklets. Exposures gave theoretical and historical information and provided application information to encourage implementation

BENEFICIARIES

The focus of this project was on making horticulture professionals more aware of the importance of native plants, drought tolerant plants and xeriscaping within the state. It is hoped that this knowledge will now be passed on to others in the state; namely retailers and consumers (private individuals and organizations).

Furthermore, we have now created a solid starting point; a visible reference of what can and should be done to "get the word out" on these important topics. We anticipate that more seminars and training would be welcome and well attended. We are hopeful that the knowledgeable horticulturalists within the community will now step forward to assist in creating the next generation of tools and training to further heighten the awareness within the horticulture community.

LESSONS LEARNED

1. There are not many available compiled sources of knowledge within the state regarding native plants or drought tolerant plants. Those organizations that are the most practiced in these areas (e.g., Montana

Native Plant Society, Blackfoot Native Plants, and Gardening under the Big Sky) were quite helpful, but nonetheless the data, the photos, and the regional-level application knowledge are relatively scarce and unevenly dispersed.

2. The enthusiasm and interest in native plants, drought tolerant plants, and xeriscaping in Montana was well beyond our expectations. Seminars were well attended both at the MT Green Expo in 2010 and the follow-on regional seminars held in the state. It is clear that more of this type of information is needed and wanted.
3. It would be a great next step to create a state-level web site dedicated to this topic area. It could become a tremendous resource within the state for easy reference and applications knowledge on native plants and drought tolerant plants & xeriscaping. USDA's website is an excellent overall source, but the regional knowledge we have within the state needs to be captured in an easy to navigate and understand web environment.
4. There is a great deal of know-how within the horticulture community, at the Dept. of Ag and other sources which could help consumers and practitioners to understand the "on-the-street" dos and don'ts about native and drought tolerant plants. Just listening in the hallways at the MT Green Expo it was clear that a great number of people know a lot about this topic area. The challenge is to effectively capture that know-how and replay it to others in a cost-effective manner.
5. Booklets:
 6. The ***Native Plants in Montana*** booklet was 36 pages, full color, with a section on Getting to Know, Grow, and Use Native Plants; Using Native Plants; Thinking Native; and a complete listing of Native Plants divided into Aquatics, Cactus, Grasses, Groundcovers, Shrubs, Trees, Vines, Wetlands, and Wildflowers, with a full legend. It included 144 color plates and resource links. Contributors of materials included the Blackfoot Native Nursery and the Montana Native Plant Society.
 7. We published 2000 Native Plant booklets which were distributed at the Montana Green Expo, the Native Plant Seminar Series, and through MNLA member organizations.
 8. ***Drought Tolerant Plants & Xeriscaping in Montana*** included sections on Drought Tolerant Plants & Xeriscaping, a complete listing of plants, 48 color plates, a common name/Latin name cross reference, and resource links. Contributors of materials included Gardening Under the Big Sky, Blackfoot Native Plants, and numerous public domain photos. We published and distributed 1000 Drought Tolerant booklets which were distributed at the Montana Green Expo, the Native Plant Seminar Series, and through MNLA member organizations.
9. Website Marketing:
 10. We sent out direct mail pieces and did blast email mailings to drive industry people to our website where the booklets, seminar information, and Montana Green Expo talks were posted.
 11. In the *Goals and Outcomes Achieved* section, please report on the Goals listed in your approved State Plan. Specifically, please indicate your progress towards the following:
 12. *Increase industry and consumer awareness of the importance and benefits of xeriscaping, and*
 13. *Increase industry and consumer awareness of the importance and benefits of growing and using native plant materials.*

14. We increased industry and consumer awareness of the importance and benefits of growing and
15. using native plant materials and the importance and benefits of xeriscaping by exposing approximately 2000 landscape and nursery professional to our content, including seminar attendees Montana Green Expo attendees, and recipients of the booklets. Exposures gave theoretical and historical information and provided application information to encourage implementation

Contact
Steve Lehenbauer
MNLA Board of Directors
Sylvan Landscaping
406.839.2993

Montana Locally Grown Promotion

PROJECT SUMMARY

Farmers markets are traditionally the first outlet through which Montana specialty crop producers (SCPs) market their products. As more consumers become aware of Montana farmers markets and attend them, the more SCP is purchased. Reaching consumers is a difficult issue, however, so we determined that a need for increased signage and other materials directing the public to the markets would be a way to address that need. Additionally, Montana farmers markets are organized mostly by volunteers with little experience in developing and hosting markets. A farmer's market association appeared to be a tool through which we could address the needs of developing more markets and enhancing the effectiveness of the current markets.

PROJECT APPROACH

Below is a summary of the activities performed:

- **Montana farmers market banners, posters, and sandwich boards:** We provided 2 banners, 20 posters, and 1 sandwich board to each of the 41 markets, at a cost of \$14,818.50. The markets put these out to promote the location of their markets weekly. We absorbed the cost of the delivery of these items.
- **Montana farmer's market radio & TV PSAs:** We created radio and TV PSAs, sending them out to TV and radio stations statewide at a cost of \$930. The Department paid for the development and filming of this PSA. Please see the script at the end of this report.
- **Montana Farmers Market website:** The Department has begun to host a Montana Farmers Market website, farmersmarkets.mt.gov, in which all markets can gather appropriate information, and consumers can look to for market information.
- **Montana farmer's market directory:** We printed 1,000 farmers' market directories and distributed to Visitor Information Centers and other tourist stops throughout the state. This directory is also provided on farmersmarkets.mt.gov, as well as our tourism site: http://visitmt.com/experiences/food_and_beverage/farmers_markets/.

- **Montana farmer's market association development:** We contracted with two grassroots development organizations, AERO (<http://www.aeromt.org/>), and NCAT (<http://www.ncat.org/>) to help with putting together the association (cost \$3703.90). First, we surveyed farmers markets across the state to determine their interest (see Farmers Market Survey 2009). Then we hosted a steering committee meeting in December 2009, asking the group to come up with the direction for the association. The group surveyed farmers markets again, asking them to prioritize identified association functions (see Farmer's Market Association Survey - March 2010).

GOALS AND OUTCOMES ACHIEVED

- According to our survey data, sales at farmers markets in 2010 were approximately \$1.9 million, a 7% increase in reported sales over 2009.
- Reported vendor numbers also increased 12% over 2009.
- The number of reported farmers markets increased from 47 to 52, a 13% increase over 2009.
- The Montana Farmers Market Association did not come to fruition. After several attempts to secure meetings to formalize the structure of the organization, our contractors reported back the lack of interest in the formation of the association. However, we will continue to host the farmer's market website, and we've also contracted with AERO to publish a direct marketing manual for specialty crop growers.

BENEFICIARIES

The groups that benefited from this project are as follows:

- Montana Farmers Markets: received more than \$22,000 worth of promotion statewide, encouraging more people to attend farmers markets.
- AERO and NCAT: learned that creating a non-profit organization from statewide, mostly volunteer groups was not possible.

LESSONS LEARNED

- We found that delivery was difficult because shipping the banners was expensive; additionally, shipping the sandwich boards was next to impossible, so we had to rely on our staff to deliver them as they traveled around the state.
- We also found that providing generic signage was not the markets' preference and not always useful.
- We found that, contrary to the information provided in surveys, Montana farmers markets are not interested in or capable of formal organization. Market managers change year to year, and many of the markets don't have consistent contact information. Furthermore, since market managers are mostly volunteers, and usually farmers themselves, they don't have the time or the

wherewithal to help organize an association. We had a hard time even getting managers to attend formation meetings.

- Also, since Montana is a large state with daunting distances between “centralized” meeting sites, it was difficult to get managers and vendors to attend any sort of training consistently.
- In the future, if trainings are to be held, I would look into webinars available on-demand, rather than live trainings at which the participant must travel long distances.

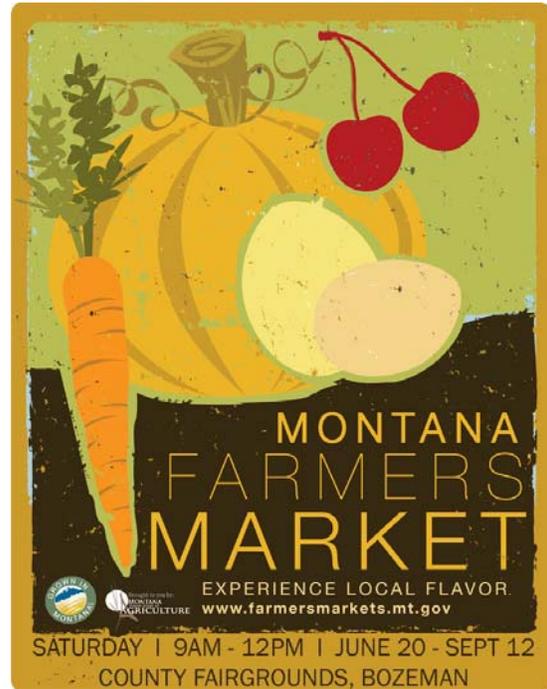
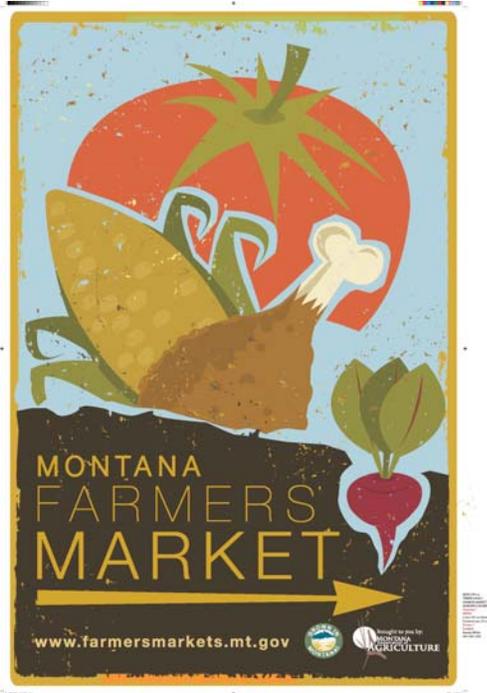
	Balance		\$ 25,000.00
Jun-09	Montana farmers market sign graphics	\$ 5,547.60	\$ 19,452.40
Jun-09	Montana farmers market banners, sandwich boards, etc.	\$ 14,818.50	\$ 4,633.90
Jul-09	Montana farmers market radio & TV PSAs	\$ 930.00	\$ 3,703.90
Dec-09	Montana farmers market association development	\$ 3,703.90	\$ -

Contact person

Angelyn DeYoung
Marketing Officer.
Montana Department of Agriculture
PO Box 200201. 302 N. Roberts. Helena,
MT 59620
{406} 444-5424 {406} 444-9442 fax
agr.mt.gov adeyoung@mt.gov

Montana Farmers Market Posters

Montana Farmers Market Sandwich boards



Montana Farmers Market Banners



Farmers Market Radio & TV PSA

Female on-camera;

“Summertime in Montana means fresh produce at local farmer’s markets all across our state.”

Husband and wife strolling through Farmers Market, each with small basket in hand

Male: on- camera;

“We love it because of all the healthy, fresh produce that’s grown locally!”

(Husband stops, grabs a produce item delivers line to camera)

Female on-camera;

“It is a fun way to shop, and you get to meet the farmers who actually grow the food!”

(Husband and wife smile – make sure FARMER/VENDOR is in the background - then continue walking out of frame)

Cut to new angle, different background with various vendor stands

Male on- camera;

“Farmers markets also have a positive effect on our local economy.”

Female on-camera;

“Montana Farmers get direct sales to customers, and we get great products!”

Male on-camera;

“Many Farmer’s Markets in our state are now accepting food coupons under programs such as WIC Farmers' Market Nutrition Program.

(at this point, the Husband and Wife exit scene.)

Female voice-over

“Look for Montana Farmers Markets in your area, and help support Montana Agriculture.”

Department logo on screen

Text on screen:

*Montana Department of Agriculture
(406) 444-2402*

Farmers Market Survey 2009

Q. Would you be interested in paying a small fee (\$100 - \$200 annually) to participate in a statewide farmers' market promotional effort, hosted by the Montana Department of Agriculture, if such a program were developed?

- 17 yes
- 19 no

Q. Are you interested in the formation of a state farmers' market association, which would include networking opportunities, annual conferences, etc.?

- 26 yes
- 12 no

Q. Would you prefer an association run by the State or by a private organization?

- 12 no preference
- 8 private
- 9 state

Q. Would you (market master) attend an annual conference for Montana farmers' markets? What topics would be of interest to you?

- 28 yes
- 10 no
- Topics:
 - advertising & growth of the market
 - advertising/promotion, special events, marketing, tips/ideas for vendors
 - advertising/promotion, special events, marketing, tips/ideas for vendors
 - canning, baking, gardening
 - community gardens and green houses
 - educating consumers on benefits of farmers markets; incentives for farmer participation

- how to develop local farmers
- How to encourage more produce vendors. How to encourage vendors to grow a wider variety of vegetables and fruits.
- how to get younger vendors
- Liability Insurance, training, promotion
- marketing
- marketing
- marketing the market, how to get more produce vendors, keep the fee for the market low
- marketing, recruiting vendors, grant opportunities
- new growers, entertainment, trends
- Pricing of item, approaching customers, attract vendors, more buyers, less lookers, getting local community involved
- public outreach and education; ways to help vendors get more customers
- USDA regulations regarding processing & sale of raw milk products & meat
- vendor ideas / products to help them market at the market to look more appealing

Q. Would your vendors be interested in attending an annual conference for Montana farmers' markets? What topics would be of interest to them?

- 12 yes
- 9 no
- 11 don't know
- Topics:
 - benefits & incentives to small sale organic growers, other than to only big business with large commodities
 - canning, baking, gardening
 - food safety, marketing, trends, regulations
 - how to sell at the market
 - marketing
 - Marketing of products, processing availability
 - marketing, new trends, business plans

- Pricing of item, approaching customers, attract vendors, more buyers, less lookers, getting local community involved
- some may find it interesting, others not so much

Farmer's Market Association Survey - March 2010

Please return return by May 3, 2010, with the Montana Farmers' Market Update 2010, to the Montana Department of Agriculture:

- *via mail: PO Box 200201*

Helena, MT 59620-0201

- *via fax: (406) 444-9442*

- *via email: adeyoung@mt.gov*

We would like to hear your opinion. At the winter meeting, our crew of farmers market managers and agriculture organizations identified several functions of an association. Now we would like to hear your input on these ideas. The following is a list of functions. We would like for you to circle the top five with the highest priority. The steering committee will then take the top five priorities and start working on them. Please write in your comments or suggestions below.

- Consumer education component
- Outreach and sharing of promotional activities
- Help educate and assist starting new EBT/FMNP programs; help maintain existing programs
- Perform food system research
- Provide manager and vendor training and education; topics to include: how to develop a market, improving and troubleshooting existing markets
- Crisis management: provide knowledge and support
- Networking of markets through annual meetings, list serve, and website
- Act as information clearinghouse for markets, managers, and vendors
- Act as liaison to national movement and models
- Research and promote economic value of farmers markets to local communities and agricultural sector
- Develop a farmers' market association website for managers, vendors, and consumers
- Liaison service exchange site for wholesale markets/broker to institutions for vendors
- Insurance pool – liability (market); health (managers & vendors); Worker's Comp (managers)
- Provide a policy voice – through education of legislators regarding FM issues/concerns

- Financial support through mini grants
- Provide legal information and support pertaining to licensing and sanitarian regulations
- Liaise between Montana Department of Agriculture and markets for promotion and regulatory issues (same with Montana Departments of Commerce, Public Health & Human Services, and other agencies)

Comments/Suggestions:

We would like to invite anyone who is interested and motivated to get this effort off the ground to participate in the Farmers Market Association Steering Committee. This would involve an annual meeting and quarterly conference calls. The steering committee will help to identify farmers market association tasks and next steps, partners, and resources to carry on the association. If you are interested Kim Degner at AERO (406) 443-7272.

Farmers' Market Association Survey Results – June 2010

In December of 2009 a crew of farmers' market managers and agriculture organizations identified several functions of a farmers' market association. By March 2010 a survey was sent out to market managers across the state to decide which functions of a farmers' market association seemed to have the highest priority for market managers. Seven surveys from market managers across Montana were received back.

According to the survey results, five markets think the two highest priorities for a farmers' market association are:

- To research and promote the economic value of farmers' markets to local communities and the agriculture sector;
- And provide financial support through mini grants.

Three markets think the next highest priorities are:

- To help educate and assist starting new EBT/FMNP programs, and help maintain existing programs;
- Networking of markets through annual meetings, list serve, and website;
- Provide a policy voice to farmers' markets – through education of legislators regarding farmers' market issues/concerns;
- And provide liaison between State Department of Agriculture and markets for promotion and regulatory issues (same with Departments of Commerce, Public Health & Human Services, and other agencies).

One or two markets were also interested in:

- Outreach and sharing of promotional activities;
- Manager and vendor training and education; topics to include: how to develop a market, improving and troubleshooting existing markets;
- Crisis management: provide knowledge and support;
- An information clearinghouse for markets, managers, and vendors;
- A liaison to national movement and models;

- A farmers' market association website for managers, vendors, and consumers;
- An insurance pool – liability (market); health (managers & vendors); Worker's Comp (managers);
- And legal information and support pertaining to licensing and sanitarian regulations.

One comment was made at the end of the survey that the generalization of promotional signs and campaigns is problematic. The signs from last year are a little generic with arrows. They could be personalized for each market even though this would be more expensive.

Organic

The organic project supported by this Specialty Crop Block Grant included three separate initiatives:

- 1. Provision of organic certification;**
- 2. Facilitation of international marketing; and**
- 3. Development of enhanced forms for specialty crop certification**

Project Summary

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that, was addressed by this project.

The overall purpose of the department's specialty crop projects was to enhance the value and diversity of Montana agriculture by increasing the production and marketability of specialty crops in Montana. The organic projects served these same purposes.

Organic certification provides enhanced marketing opportunities to specialty crop growers. Unfortunately, some of the highest value markets for organic specialty crops require additional international certifications. SCBG funds were used to support the department's accreditation under the International Standards Organization (ISO) Guide 65 program. This accreditation, in turn, allowed the department to offer certification to international organic standards. International certification provided additional high-value marketing opportunities to specialty crop growers.

In order to provide organic certification (service) to specialty crop growers, the department needed additional staff adequately trained to understand the unique production systems and certification requirements of organic specialty crop producers. To that end, the department contracted with the International Organic Inspectors Association (IOIA) to conduct an inspector training for new and existing department staff and contractors involved with the certification program.

The department used a single form for all types of crop producers applying for organic certification. While this Organic System Plan (OSP) form worked reasonably well for many growers and fairly well for most, it did not work very well for most specialty crop growers. Specialty crop growers- both new applicants and long-time organic growers repeatedly complained that our OSP form did not work as a tool to describe their diverse operations. Having seen and heard this problem, the department utilized SCBG funds to develop better forms for certification of specialty crop growers. Having better forms will encourage more organic growers to add specialty crops to their operations and will facilitate new organic growers in applying for certification.

Establish the motivation for this project by presenting the importance and timeliness of the project.

Organic specialty crop growers fall largely into two categories. One category are small scale fruit and vegetable producers who market their products locally through farmer's markets, direct sales and Community Supported Agriculture (CSA) arrangements. The other are larger-scale grain growers who grow pulse crops as a means of diversifying their crop rotations, providing fertility and enhancing weed, pest and disease management. Montana needs more growers in each category.

There is a significant un-met demand for locally-grown organic food. Existing organic fruit and vegetable growers report that they "turn customers away," due to inadequate production. Farmers markets are in place in most of Montana's towns and see great interest from consumers. Even given the economic recession, many consumers see buying locally-grown organic foods, shopping at farmers markets and preparing (more) food at home as methods to save money and eat healthier- having their vegetables and eating them too!

Montana has long been a leader in organic grain production. Our state's organic producers consistently seed and harvest more acres of organic wheat than any other. Unfortunately, the long term sustainability of many farms is imperiled by inadequate crop diversity. Traditionally, Montana farmers have grown wheat in alternate years with fallow in order to preserve soil moisture. In years with more moisture, they grow more wheat; in drier years more land is fallowed. Organic growers have too often used this same farming practice. Statistics published by the USDA (Economic Research Service) consistently indicate that Montana has more than four acres of organic wheat for every acre of all other crops combined. One may wonder how all of that wheat qualifies for certification. Perhaps more importantly, wheat monoculture systems are definitely not sustainable under organic management. More crop diversity is necessary to maintain soil fertility and organic matter, manage weeds, pests and disease, and to prevent soil erosion. Pulse crops, such as dry peas, lentils and vetches are among the best alternative crops to add needed diversity to organic rotations. These specialty crops may be harvested for seed, used as forage, or incorporated into the soil as "green manure." The latter practice is especially beneficial to improving soil fertility and organic matter, while still preserving soil moisture. If Montana is to continue to be a leader in organic crop production, it will have to increase the acreage devoted to specialty (pulse) crops.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complimented and enhanced previously completed work.

Each of the initiatives supported by this SCBG built on previously-funded projects. By utilizing this SCBG, we were able to:

- Enhance the knowledge of expertise of existing certification program staff to better understand organic specialty crop production and better serve organic specialty crop growers;
- Train additional staff and contractors to provide more efficient and timely service to organic specialty crop growers;
- Maintain ISO Guide 65 accreditation, so as to provide additional, international, certifications for organic specialty crop growers;
- Complete development of improved forms for certification of organic specialty crop growers.

Project Approach

Briefly summarize activities performed and tasks performed during the grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.

1. Training of program staff to better understand and serve specialty crop growers.

The first initiative of the organic project was to facilitate marketing of specialty crops. This was to be done by providing organic certification to specialty crop growers and by offering additional, international certifications. Organic certification is a marketing tool, which allows growers to sell, label and represent their crops as

“organic.” Often there are substantial premiums for organic crops, relative to prices paid for non-organic version of the same commodity. Certification to additional standards may “open the door” to even greater value-added international markets.

Organic is the fastest growing segment of Montana agriculture. As a result, the demand for certification services is also rapidly growing. Keeping up with this demand for service is a challenge. In order to meet the need for additional certification services, particularly to specialty crop growers, the department needed more staff and training to increase the competency of existing staff.

The department contracted with the IOIA to conduct a full-week-long training session for organic inspectors and reviewers. The training was held in Helena, near our main office. The training includes a “basic” course for new inspectors, as well as an “advanced” track for current inspectors and reviewers. Four department field inspectors, based in Billings, Great Falls, Havre and Glasgow, were trained as new organic inspectors. Two additional contractors also benefited from the basic training and were added to our roster of inspectors. These six additional inspectors have greatly enhanced the quality, timeliness and efficiency of our program. In the “advanced” tract, nine existing staff and contractors received training on certification standards and inspection procedures specific to specialty crop production and processing. The training enhanced the staff members’ knowledge and skill in providing certification to organic specialty crop producers and processors.

2. Maintaining ISO Guide 65 accreditation to facilitate international (organic) certification of specialty crop growers.

Providing certification to additional organic standards provided our growers with access to high-value international markets for organic crops and products. In order to provide these certifications, the department has to maintain accreditation under the International Standards Organization (ISO) Guide 65 program. This accreditation requires multiple annual audits. SCBG funds were used to fund the costs of maintaining the ISO accreditation.

While ISO accreditation is necessary to offer certification to international standards, it is no longer sufficient. In 2008, new regulations in the European Union (EU) required that certifying agents be directly accredited by the EU commission. The department was able to negotiate a cooperative agreement with the Washington State Department of Agriculture (WSDA) to provide our organic growers with international certifications. Under this agreement, the department acts as an inspection body for the WSDA. We conduct the on-site inspections, provide reports to the WSDA and they issue the international certifications. This agreement allowed us to continue providing international certifications without incurring the additional costs of EU accreditation.

3. Developing “customized” forms for organic certification of specialty crop growers.

The department contracted with the National Center for Appropriate Technology (NCAT) to develop Organic System Plan (OSP) forms that better accommodate the needs of specialty crop growers. The new forms are shorter, have more pertinent questions and have fewer questions that are “not applicable” to operators. Rather than the “one-size-fits-all” form we had used, we now have specific OSP forms for Field Crops, Diverse Crops, Tree and Perennial Crop, Hay and Pasture and Mushrooms. Additional addenda are available for producers with greenhouses, those who use compost or manure, who do post-harvest handling and who gather wild-crops. The forms were developed in 2009 and provided to growers for use in 2010.

National Organic Program (NOP) certification requires an annual, on-site, inspection of each certified operation. Specific forms were developed for Inspection Reports for crop, livestock and (food) handling operations. The Inspection Report forms were designed in coordination with the OSP forms. So, when the OSP forms were changed, we also needed to redesign the Inspection Report forms. This SCBG provided funds to contract with the National Center for Alternative Technology (NCAT) to design new Inspection Report forms to coordinate with the OSP forms. The new inspection forms were used in 2010 and received positive feedback from our organic inspectors.

Present the significant contributions and role of project partners in the project.

N/A

Goals and Outcomes Achieved

Supply the activities that were completed in order to achieve the performance goals and measurable outcomes for the project.

As described above, the activities completed were:

1. Training of program staff to better understand and serve specialty crop growers;
2. Maintaining ISO Guide 65 accreditation to facilitate international (organic) certification of specialty crop growers; and
3. Developing “customized” forms for organic certification of specialty crop growers.

If outcome measures were long term, summarize the progress that has been made towards achievement.

Provide a comparison of actual accomplishments with the goals established for the reporting period.

In 2008, the department certified 93 organic crop producers, including 54 growers of specialty crops. By the end of 2010, we had certified 105 crop producers and 72 specialty crop growers. This represents a 13% increase in the number of organic crop producers and a 33% increase in specialty crop growers. The percentage of organic growers producing specialty crops increased from 58% to 68%. We also certify 44 (food) handling operations, including 32 (72%) that process and/or purchase specialty crops. These organic food handlers provide a growing market of grower-producers of specialty crops. We continue to see tremendous opportunity for specialty crop growers in the organic market and significant opportunities for organic growers to add specialty crops to their operations.

Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.

The number one goal of this project was to increase the number of organic specialty crop growers in Montana. We projected a 10% annual growth and a total of 64 certified growers by the end of 2010. As indicated, we actually certified 72 specialty crop growers in 2010, 17% annual growth.

The second goal was to increase the number and value of markets for specialty crop growers. Our success in this area was (is) much more difficult to quantify. As previously articulated, organic specialty crop growers in Montana are of two primary types- intensive producers of fruit and vegetable crops for local markets and extensive producers of pulse crops. Each group presents unique challenges in quantifying their market value.

For the intensive producers, the markets are direct sales, farmers markets and CSA's. While these growers use organic certification as a marketing tool, they do not receive a measurable premium for organic crops, per se. We have interviewed several of the growers and found that they feel certification may increase the number of customers who seek out their products, more so than the prices they charge. There is no practical means of measuring the added value of certification for these growers.

For the extensive growers, pulse (specialty) crops are grown for three distinct purposes, in this order of importance and volume: as green manures, as seed for subsequent use on the farm or by neighboring producers, and lastly as food or feed crops. Each year far more peas, lentils and vetches are incorporated into the soil than are actually harvested. While there is a definite value of the green manure crops, it can only be quantified indirectly. The value is in the enhanced production (yield) and value of subsequent crops. Similarly, crops grown for seed are not reported as income and are thus difficult to value. Even crops "sold" to others as seed are often provide in barter or other non-cash transactions, which do not show up on the sales report. The value of organic specialty crops that are indicated on sales reports is a miniscule fraction of the true value of the crops.

Overall, we believe that the project has been successful. That success is most readily measured by the 33% increase in the number of specialty crop growers. The increase in growers also may be assumed to have increased the production acreage of specialty crops. Providing certification and international certification options to specialty crop growers has undoubtedly increased the number and value of markets for specialty crops, though this outcome is difficult to quantify.

Beneficiaries

Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.

A number of groups have benefited from this project. Among them are the (existing) organic growers, who have access to additional international markets for their products. Also, the new certified organic growers who now have value-added markets for their crops, due to certification. Both groups benefited from the improved forms, which will improve the efficiency of the certification process. Finally, our program staff and those growers that we serve have benefitted significantly from the training and increased expertise of our staff.

Clearly state the quantitative data that concerns the beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

Explained above...

Lessons Learned

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.

Lessons learned from this project include the impressive number (72) and percentage (68%) of certified organic crop producers who grow specialty crops. Another interesting observation concerns the prevalence of pulse crops, especially dry peas that are grown as green manure by organic producers. It was surprising how few of the pulse (specialty) crop growers harvest their peas and that even fewer sell peas as a cash crop.

Another interesting observation was that the fruit and vegetable growers do not report a direct premium from the organic market. While most growers felt that they had more customers due to being organically certified, they were unable to assign a direct economic advantage to the certification.

Provide unexpected outcomes or results that were an effect of implementing this project.

See “lessons learned,” above.

If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.

N/A

Contact Person

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Additional Information

Provide additional information available (i.e. publications, websites, photographs) that is not applicable to any of the prior sections.

N/A