2014 Specialty Crop Block Grant Program Projects Selected for Funding

Applicant	Project Title	Funding Amount
Boise State University	Food Safety Protocol: Monitoring Potato Fryer Oil Quality	$ 155,735.00
Boise State University	Sunnyslope Soils Analysis (SSSA)	$ 72,420.00
Idaho Apple Commission	The Impact of Tree Architecture and Girdling at Full Maturity in a Modern Super High Density Orchard on Yield Efficiency, Fruit Quality, Mineral Partitioning and Postharvest Physiology of Apples in Idaho	$ 113,124.00
Idaho Bean Commission	Developing season-long integrated weed control systems in Idaho dry beans	$ 56,685.00
Idaho Bean Commission	Developing the Bean Seed Market in Costa Rica	$ 17,870.00
Idaho Grape Growers and Wine Producers Commission	Increase Quality, Awareness, and Sales of Idaho Wine	$ 88,400.00
Idaho Hop Commission	Evaluating Experimental Hop Selections in Unique Idaho Terroir Conditions	$ 68,250.00
Idaho Nursery & Landscape Association	Idaho Wholesale Nursery Map and Consumer Plant Something Magazine	$ 23,500.00
Idaho Nursery & Landscape Association	Media Plant Something Marketing Campaign	$ 24,750.00
Idaho Potato Commission	Identification of potato genes conferring resistance to NTN and N-Wilga recombinants of Potato Virus Y	$ 149,420.00
Idaho Potato Commission	International Development for Idaho Potatoes - 2014	$ 114,631.00
Idaho Preferred	Promoting Specialty Crops through Advertising and Retail Promotions	$ 213,990.29
Idaho-Eastern Oregon Onion Committee	Developing Awareness of Idaho-E. Oregon Onions and Building International Markets in Mexico and Central America through In-store Promotions and Trade Missions	$ 40,290.00
Northwest Nazarene University	Expanding the Application of the Crop Monitoring and Assessment Platform	$ 76,686.00
University of Idaho	Identification and exploitation of resistance to Zebra chip disease in potato	$ 95,090.00
University of Idaho	Studying Adaptation, Introduction, and Quality of Alternative Fruits to Enhance Profitability of Small Businesses and Public Health in Idaho	$ 103,420.00
USA Dry Pea & Lentil Council	Enhancing domestic trade of dry peas, lentils and chickpeas by educating the food/foodservices industry about the benefits of utilizing pulses as ingredients	$ 134,404.00
USDA-ARS	Deciphering the effects of grapevine virus on Idaho grape/wine quality	$ 64,940.00
USDA-ARS	Method Development for Automated, Real-time Monitoring of Wine Grape Vine Water Stress for Use in Wireless Sensor-based Irrigation Networks	$ 109,502.00

Boise State University

Food Safety Protocol: Monitoring Potato Fryer Oil Quality

Abstract

Near infrared spectrophotometry will be used to monitor potato fryer oil degradation during food processing operations. The development of a rapid testing method to determine fryer oil composition and quality will inform decisions that directly influence food safety, advance the chemistry of food processing, and guide economic decisions as they relate to production line shut down periods associated with cleaning and sanitation.

Boise State University

Sunnyslope Soils Analysis (SSSA)

Abstract

The proposed project studies the textural and chemical nature of vineyard soils in the Sunnyslope district of the Snake River Valley Appellation. This project will provide a baseline dataset and foundation for growth in Idaho's wine grape industry. Through a collaborative effort between growers, institutes of higher learning, and technology industry, a team of researchers has formed to not only identify soils, but also use cutting-edge technology for rapid retrieval of soil moisture and climate information that can be made quickly available to growers.

Much has been accomplished since the federal designation of the Snake River Valley Appellation (2007) and the mapping of its 8500 square miles to further identify the climate and landscape potential for quality wine production (2010-2012, IWC), which provides two legs of the terroir stool. The next step is to identify the different soils of this grape growing region as it is the soil types that influence the different flavors of the wines. With this third leg of the terroir stool established, the region can then begin campaigning to attract other large wineries to Idaho, to be able to further substantiate the unique region and why it should be sought for new vineyard plantings.

Idaho Apple Commission

The Impact of Tree Architecture and Girdling at Full Maturity in a Modern Super High Density Orchard on Yield Efficiency, Fruit Quality, Mineral Partitioning and Postharvest Physiology of Apples in Idaho

Abstract

Idaho is an outstanding region for production of high quality apples. However, usable land is becoming scarce and lost to urbanization. Idaho produces considerable volume of apples, but does not have the population to consume all its production locally. Thus, sustainability of this industry depends on the export market, and this global market is extremely competitive and demands high quality fruit. The goal of this project is to increase yield and fruit quality and optimize mineral nutrient uptake through the use of various tree architectures in combination with new dwarf rootstocks and trunk girdling in high density orchards in 'Fuji' apple when trees are fully mature. With a suitable combination of tree architecture and rootstock, trees could start production in the second year after planting rather fourth or fifth year. This study focuses on sustainability of production and fruit quality after trees are completely mature, starting October 2014. It is expected to see a major shift (improvement) in the practice of apple

production and enhanced profit in Idaho after conclusion of this study. Various tree architecture systems in combination with RN29 and Bud 9 rootstocks will be used in a super high density orchard system at the University of Idaho Parma Research Center.

Idaho Bean Commission

Developing season-long integrated weed control systems in Idaho dry beans

Abstract

In cooperation with the Idaho Bean Commission, weed scientists at the University of Idaho will conduct three field experiments to develop more effective integrated weed control systems in sprinkler and furrow irrigated dry bean production in Idaho. Sprinkler irrigated field studies will utilize three integrated weed management practices- sequential herbicide applications, dry bean variety based on plant growth habit (viney prostrate-type versus upright plant architecture), and dry bean row spacing-narrow (8-inch) row versus standard (22-inch) row spacing. In furrow-irrigated beans, weed control with several herbicides will be compared with and without cultivation, followed by different timings of furrow-irrigation. The third experiment will evaluate bentazon (Basagran) postemergence applications made at various times of the day (6:00 am, 9:00 am, 12:00 pm, 3:00 pm, 6:00 pm and 9:00 pm) to determine the effect of relative humidity and temperature on weed control and crop safety. These experiments will be repeated over two years.

Idaho Bean Commission

Developing the Bean Seed Market in Costa Rica

Abstract

The Idaho Bean Commission recently participated on a Western U.S. Agricultural Trade Association Trade Mission to the Dominican Republic and Costa Rica. The meetings with two particular companies in Costa Rica promised great opportunity. Wal-Mart in Costa Rica sells a high volume of beans. Corporacion Frijol Cinco Mil S.A. is a major supplier of both red and black beans to Walmart. Both Walmart and Corporacion Frijol Cinco Mil S.A. are interested in using disease-free Idaho seed. The seed currently used in Costa Rica has many disease issues and many growers save and reuse seed. The Commission would like to take their local preferred varieties, grow them in our disease free environment, and then supply them certified Idaho seed. This seed will be grown in trial plots in Costa Rica and a field day will be held for local growers.

Idaho Grape Growers and Wine Producers Commission

Increase Quality, Awareness, and Sales of Idaho Wine

Abstract

Since 2002, the Idaho wine industry has seen a 355% increase in the number of licensed wineries. With this growth has come a boom in marketing and awareness about the industry as a whole. The Idaho Grape Growers and Wine Producers Commission (IWC) has had the opportunity and resources available in recent years to capitalize on this growth and run with the momentum and buzz through marketing and outreach. The IWC would like to focus on local Idahoans for consuming wine within the state, as

well as consumers across neighboring boarders to expand Idaho's wine industry exposure in other markets and to more consumers.

Idaho Hop Commission

Evaluating Experimental Hop Selections in Unique Idaho Terroir Conditions

Abstract

Demand for hops has expanded rapidly in the past decade, largely due to the consistent annual growth of American craft brewers' market share and the popularity of their recipes incorporating larger quantities of hops. The Idaho Hop Commsion recognizes the growing demand in the brewing industry for new varieties that can both satisfy the required flavor and aroma characteristics, but are also reliably available to brewers. Several Idaho growers separately maintain small "test plots" of new selections from USDA and university hop breeding programs to determine vigor and potential in Idaho's ground and climate. Properly harvesting these plots is inefficient due to stationary picking machines that are not well suited to small quantities, difficulties in correlation of data, and disruption to the overall harvest. A properly scaled, efficient harvesting process would improve timeliness and effectiveness in the collection of agronomic and chemistry data including vigor, growing characteristics, aroma and oil, disease pressures, yield, and optimum harvest timing. This proposal requests funds to establish a central test plot where new selections can be harvested and evaluated more effectively, enabling Idaho growers to be on the cutting edge in development of new public varieties and increase market share in an expanding global hop market.

Idaho Nursery and Landscape Association

Idaho Wholesale Nursery Map and Consumer Plant Something Magazine

Abstract

The Idaho Nursery & Landscape Association (INLA) is applying for this grant to promote and encourage the production, sale and use of Idaho's specialty crop nursery products. The first component of the project is to print an Idaho Wholesale Nursery Locator Map which will be a tool to enhance the marketability of Idaho specialty crop growers within the state of Idaho and beyond. A grant given by the Specialty Crop Program in 2010 supported printing of the map and now it is time to reprint and reach out to new potential buyers. Growers found the map to be a vital tool for buyers to use as a quick reference for planning and purchasing plant material grown and shipped from Idaho. Maps will be direct mailed to retail nurseries/garden centers and landscape contractors in Idaho, Montana, Colorado, Wyoming and Utah. Additionally the map will be distributed at trade shows, mailed to all members, featured on the INLA website and sent to potential buyers upon request. The second component of the grant request is funding to produce and distribute a magazine that features Idaho retail nurseries/garden centers and landscape services. The listing includes the business name, location, contact information, the type of services offered, and the certifications held by each company's employees. This message has been INLA's theme for the last few years, with the help of other Specialty Crop Grants, and has now become a national campaign with twelve state partners, Long Island and British Columbia currently participating in the *Plant Something* campaign. Educating consumers on the environmental benefits of planting and the reason to *Don't Just Stand There – Plant Something* has paid off through increased sales of nursery crops. The momentum of the movement is going strong we would like to continue to see our industry slowly recover from a very tough recession.

Idaho Nursery and Landscape Association

Media Plant Something Marketing Campaign

Abstract

The Idaho Nursery and Landscape Association (INLA) is applying for a *Plant Something* media campaign marketing support grant which is a continuation of grants awarded in previous cycles. It has been established that the most effective form of advertising is repetitive “hits" of the same message. Research shows consumers need to be exposed to your message 7 – 10 times before remembering it or taking action. The goal of this grant is to continue to expose consumers in Idaho to the successful *Plant Something* promotion with a goal of increasing the sale and use of Idaho grown nursery crops. This proposal will fund marketing efforts throughout Idaho on radio and television stations such as HGTV to spread the *Plant Something* message. The same message will be sent in banners and marketing materials to retail nurseries and garden centers and shared with cities throughout Idaho who promote planting through Arbor Day activities. The Idaho Nursery and Landscape Association has prioritized the *Plant Something* campaign and has consistently determined it is in the nursery industry’s best interest to continue building upon this successful campaign. INLA believes the 2015 campaign will reach thousands of consumers with the *Plant Something* message.

Idaho Potato Commission

Identification of potato genes conferring resistance to NTN and N-Wilga recombinants of Potato Virus Y

Abstract

A shift in the PVY strain population circulating in the U.S. has been documented recently, with recombinant isolates from NTN and N-Wi strains now representing over 70% of field isolates. Tuber necrosis, or PTNRD, has been primarily associated with recombinant, NTN strains of PVY. However, other types of PVY recombinants had been reported to induce PTNRD as well, albeit at a lower frequency than PVYNTN. Resistance genes to these recombinant strains of PVY have not been identified yet, and molecular markers associated with such genes are not known at the moment. Recently, we described a group of new genes in potato cultivars conferring hypersensitive resistance to recombinant strains of PVY. This proposal aims to use the recently developed PVY genetic system to address two of the most pressing issues related to recombinant PVY strains: identification of genes conferring resistance to main recombinant PVY strains responsible for the PTNRD induction, and development of molecular markers linked to the potato genes responsible for resistance against PVY recombinants.

Idaho Potato Commission

International Development for Idaho Potatoes – 2014

Abstract

The goal of this project is to build and/or heighten awareness of Idaho® potatoes (fresh, frozen and dehydrated) and the Idaho® potato brand in newly launched regions, educate and enhance awareness in highly competitive markets and introduce the Idaho® potato brand to markets newly opened to fresh potatoes. Activities for this project will include promotional activities at the retail level; conducting in-bound and out-bound trade missions; participation in trade shows; and development and

implementation of training workshops for end-consumers, foodservice and wholesale and retail distribution.

Idaho Preferred

Promoting Specialty Crops through Advertising and Retail Promotions

Abstract

As a result of successful promotions conducted on behalf of specialty crop growers, the Idaho Preferred® program has attained brand awareness of 50% of consumers statewide, according to research conducted by the University of Idaho in October 2012. Awareness among young consumers 18-34 is even higher at 60% and 51% of consumers report seeing specialty crops, including fruits and vegetables, wine, and nursery products, in advertising and promotion materials. Additionally, the number of consumers reporting having seen Idaho Preferred® signage at a retail location has more than doubled from 19% in 2008 to 40% in 2012. This level of awareness is due to the combination of an effective advertising campaign and a successful retail promotion strategy. The goal of the 2014 Specialty Crop Block Grant is to continue this productive campaign through advertising and demand-building promotions carried out by staff.

Idaho-Eastern Oregon Onion Committee

Developing Awareness of Idaho-E. Oregon Onions and Building International Markets in Mexico and Central America through In-store Promotions and Trade Missions

Abstract

This proposal is for a project to be conducted by the Idaho-Eastern Oregon Onion Export Committee (IEOOC). Idaho and Eastern Oregon's crop is 90% yellow onions and it is important to stay in front of the Mexico retailers and consumers and let them know of the versatility, the availability, and the benefits of yellow onions. The two-year project will include yellow onion in-store promotions in 2014 in several Mexico cities as well as three trade missions--two 2014 WUSATA Trade Missions and a 2015 Trade Mission with Idaho's Governor Otter. Trade missions are an effective way to learn new markets as they provide opportunities to meet new buyers one-on-one. These missions also provide in-depth information about the country visited giving the shippers and business owners an insight to the demographics of the country and other useful information when making a decision to sell to a certain country.

Northwest Nazarene University

Expanding the Application of the Crop Monitoring and Assessment Platform

Abstract

The Robotics Vision Group of Northwest Nazarene University has developed the Crop Monitoring and Assessment Platform (C-MAP), a cost-effective state-of-the-art monitoring technology. The C-MAP is an off-the-shelf unmanned aerial vehicle equipped with a multispectral camera (color/NIR) and coupled with an image processing and analysis program. Preliminary results have shown that the calculated Normalized Difference Vegetation Index (NDVI) of the multispectral image correlated with water

deficiency at the experimental apple orchard of the University of Idaho. This promising result could potentially optimize water usage and minimize negative crop health and environmental impact. With this demonstrated success, it is reasonable to investigate expanded capabilities for C-MAP to other specialty crops grown in Idaho such as peaches and onions. The proposed study will investigate different vegetation indices, canopy cover/structure (plant training system), blossom density, and their correlation with yield and crop/soil condition. Expanding the application of C-MAP to other fruits and vegetables will aid Idaho's specialty crop industry, helping them move forward with Precision Agriculture technologies. This leads to increased yield and quality while reducing cost, which results in an ability to be more competitive in the world market.

University of Idaho

Identification and exploitation of resistance to Zebra chip disease in potato

Abstract

Using a combination of molecular biology, biochemistry and molecular genetics, researchers will aim to identify and characterize defense response pathway(s) in potato to Candidatus Liberibacter solanacearum (Lso), the causal agent of Zebra chip potato disease, and explore new approaches to generate resistant potato lines.

University of Idaho

Studying Adaptation, Introduction, and Quality of Alternative Fruits to Enhance Profitability of Small Businesses and Public Health in Idaho

Abstract

During the past 20 years, the University of Idaho Pomology Program has experimented with several new fruit crops, and as a result, a new alternative fruit industry, such as table grape, is emerging in Idaho. However, there are additional alternative fruits that should be studied in Idaho. Alternative fruits have become extremely popular, primarily due to the health benefits that exist in these fruits. This proposed project will have two sections: 1) research on new alternative fruit and nut crops, including table grapes; and 2) research on existing alternative fruit. In the first section, the feasibility of growing new fruit, nut, and berries will be studied under Idaho conditions. Among these materials are grapes, white apricots and plums, pomegranates, blue berries, strawberries, pecans, walnuts, persimmons, and almonds. In the second section, quality attributes, maturity dates, and cold tolerance of existing, fruit-bearing persimmons, Asian pears, and quinces will be studied. The project also includes tours, classes, and field days to educate the public about the benefits and methods of producing these alternative fruits in Idaho.

USA Dry Pea & Lentil Council

Enhancing domestic trade of dry peas, lentils and chickpeas by educating the food/foodservices industry about the benefits of utilizing pulses as ingredients

Abstract

The USA Dry Pea & Lentil Council (USADPLC) was established in 1965 as a non-profit organization to promote and protect the interests of U.S. growers, processors, warehousemen and sellers of dry peas, lentils and chickpeas.

The objective of this proposal is to increase the use of the regions peas, lentils and chickpeas in the United States as an ingredient in food products and food-service menus. The USADPLC is requesting funds to host an educational, informative and hands-on product development course that will target and educate a specific audience in the food industry including product development specialists, nutritionists, and food marketing professionals.

The USADPLC will design a two-day course introducing new applications for pulses along with technical demonstrations at the Culinary Institute of America in Hyde Park, New York and follow up activities to increase buyer interest in the region's pulse industry. In addition, the course will provide information on utilizing dry peas, lentils and chickpeas and their respective flours and isolates as ingredients to enhance the nutritional value of foods. Key technical information such as product formulations, process flows, research findings, and marketing considerations for new and traditional high value foods that utilize pulses as raw materials will be presented.

USDA-ARS

Deciphering the effects of grapevine virus on Idaho grape/wine quality

Abstract

This proposal outlines a multi-institution (state university, federal agency, and industry cooperators) collaborative project to expand upon previous Idaho wine grape, and product quality, findings. The last ten years have seen increased production and quality changes. Wine grape industry samples from 2000 to 2004 vintages were assessed for their quality constituents, and the results were published. The industry has undergone numerous changes since that time, it is now relevant to revisit grape product quality and compare the data to that of a decade ago.

USDA-ARS

Method Development for Automated, Real-time Monitoring of Wine Grape Vine Water Stress for Use in Wireless Sensor-based Irrigation Networks

Abstract

Irrigation is a critical resource Idaho wine grape growers use to produce an economically competitive quantity of quality grapes; however, precision irrigation decision making is hindered by the lack of an automated method for monitoring vine water status. Neural Network (NN) modeling and infrared thermography will be used to calculate a crop water stress index (CWSI) suitable for incorporation into a wireless sensor-based irrigation network (WSIN) to aid irrigation decision making. The method will be tested and validated in an existing research vineyard where replicated plots of vines will be irrigated

with fractional amounts of their estimated water demand and data from environmental and infrared sensors will be input into a NN model to calculate a CWSI. Values of the CWSI will be related to plant-based indicators of water status, yield, berry composition and water productivity. Fruit harvested from trial plots will be processed into replicated lots of wine and evaluated for sensory attributes by untrained industry panelists. Yield and quality data will be related to CWSI values. The environmental and economic benefits of WSIN have recently been documented in ornamental crop production and the expected outcome of this project is to develop a monitoring method that can be used to realize similar benefits for Idaho wine grape growers.