



Washington
State Department of
Agriculture

SPECIALTY CROP BLOCK GRANT AWARDS 2024

In 2024, the Washington State Department of Agriculture received approximately \$4.8 million to help fund 20 projects:

Grant Recipient: Washington State University

Project Title: Systems approach for sustainable replanting practices in tree fruit orchards

Award: \$249,729

Abstract: Our team from Washington State University proposes to evaluate a systems approach for sustainable replanting of apple orchards. Currently, apple farmers in Washington begin the replant process by removing, piling, and burning trees. Growers consider this practice the most economical in the short term; however, it under-utilizes the natural resources and benefits associated with regenerative practices, and increases pollution. Alternative practices include chipping the trees (either on- or off-site) and incorporating the material back to the soil. This process can lead to nitrogen immobilization however, having negative effects on the growth of the new trees. Other preparation strategies for new orchard establishment include soil fumigation, use of compost and, more recently, applications of biochar. We propose to evaluate a circular, systems approach for reutilizing bioproducts, materials, and local resources for replanting apple orchards. This project will be developed in a commercial orchard and in collaboration with local dairy farms, biochar services and tree removal services from Washington state. This project will benefit Washington tree fruit producers and agricultural communities by reducing waste and pollution, regenerating natural systems, and enhancing grower competitiveness.

Grant Recipient: Washington State University

Project Title: Expanding specialty crop production through forest farming and bigleaf maple sugaring practices

Award: \$238,231

Abstract: Washington State University Extension in partnership with Agroforestry Northwest will address barriers maple sugaring in Washington State by developing capacity for local manufacturing of sugaring equipment, developing a region-specific bigleaf maple sugaring toolkit for producers, trialing complimentary forest farm crops to increase income from sugaring operations, and expanding markets for bigleaf maple syrup.

Grant Recipient: Northwest Cider Association

Project Title: Gatekeepers in Focus: Education and Activation to Drive Sales of Washington Cider

Award: \$249,839

Abstract: Northwest Cider Association in partnership with the Culinary Breeding Network will strive to increase culinary professionals' and consumers' awareness of preferences for, and purchase of Washington craft cider and cider made with Washington apples.

Grant Recipient: Washington Red Raspberry Commission

Project Title: Expanding the Washington Red Raspberry Market through Beverage Innovation and Promotion

Award: \$250,000

Abstract: The Washington Red Raspberry Commission (WRRRC) will tap into the growing beverage market to drive demand for underutilized red raspberry products and expand awareness of the Washington red raspberry brand through a Beverage Innovation Workshop, recipe and curriculum development, conferences/tradeshows, media outreach and advertising.

Grant Recipient: Washington State Wine Commission
Project Title: Marketing Sustainable WA to Domestic and International Audiences
Award: \$250,000

Abstract: The Washington Wine Commission campaign will target domestic and international audiences with an objective of raising awareness of Sustainable WA resulting in an increase in requests for certified sustainable Washington wines.

Grant Recipient: Washington Blueberry Commission
Project Title: Expanding Washington Blueberry Exports to India
Award: \$220,000

Abstract: The Washington Blueberry Commission (WBC) will conduct retail, foodservice, and culinary promotions in India for fresh, frozen, and dried blueberries.

Grant Recipient: Northwest Berry Foundation
Project Title: Strengthening the network: reconnecting berry researcher and grower collaboration
Award: \$199,157.60

Abstract: The Northwest Berry Foundation seeks to re-establish strong working relationships between berry researchers and key industry stakeholders through in-person farm tours.

Grant Recipient: Washington State University
Project Title: Washington Soil Health for Tree Fruit Long Term Agro-ecological Research and Extension Site
Award: \$241,178

Abstract: Washington State University and The Washington Soil Health Initiative aim to develop and evaluate management systems that optimize fruit yield and quality through sustainable soil health management practices.

Grant Recipient: Washington State University
Project Title: Aerial Imaging and Insect Monitoring to Study Viruses Impacting Blueberries in Northwestern Washington
Award: \$249,994

Abstract: Washington State University (WSU) will establish an agreement with the Washington State Department of Agriculture to address the emerging issues of blueberry viruses in Washington state. To improve virus management option for Washington blueberry growers, WSU is proposing the following objectives: 1) study temporal and spatial spread of viral diseases using both molecular diagnostic tool and remote sensing technology; 2) understand the phenology and vectoring potential of aphids in blueberry fields; and 3) establish blueberry virus working group with industry stakeholders and the university to improve research and extension outputs for increasing stakeholder awareness of the range of blueberry viruses as well as their management in the PNW.

Grant Recipient: Washington State University
Project Title: Management of Climate-Induced Stress and Root Diseases in Pacific Northwest Christmas Tree Plantations
Award: \$183,312

Abstract: Washington State University will examine biotic and abiotic factors contributing to heat damage and increasing mortality in Pacific Northwest (PNW) Christmas tree plantations.

Grant Recipient: Washington State University

Project Title: A practical approach for managing grapevine leafroll disease by purging the virus employing phloem-girdling

Award: \$249,835

Abstract: Washington State University will manage grapevine leafroll virus disease using the scientifically based practical purging technique of phloem girdling and disseminating the results to the wine industry and stakeholders through field days, workshops, and industry meetings.

Grant Recipient: USDA Agricultural Research Service

Project Title: Sustainable management of wireworms by targeting the adult click beetles

Award: \$245,364

Abstract: The USDA Agricultural Research Service (ARS), in collaboration with Washington State University (WSU) will establish an agreement with the Washington State Department of Agriculture to aid Washington's specialty crop growers in reducing injury from a top pest, wireworms, through improved monitoring and management of their adult life-stage, click beetles.

Grant Recipient: USDA Agriculture Research Service

Project Title: Beet leafhopper and associated pathogens in Columbia Basin: Impact of crop type and abiotic factors

Award: \$249,517

Abstract: The United States Department of Agriculture, Agricultural Research Service in Washington State, in collaboration with Washington State University will study relative pathogen transmission rates and beet leafhopper abundance among crops, provide near real-time pathogen data to inform grower integrated pest management decisions, and work to integrate abiotic factors into forecasting models that can be used as a decision aid tool by the grower.

Grant Recipient: Washington State University

Project Title: Antimicrobial coating plus heated drying in inactivation of *Listeria* on fresh apples

Award: \$250,000

Abstract: *Listeria monocytogenes*, a notorious foodborne pathogen responsible for multiple outbreaks and recalls linked to fresh apples, poses a significant challenge. Apples are typically coated with food-grade wax during post-harvest packing. However, *Listeria* contamination can occur before and during wax application due to its ubiquitous presence, particularly in the wax area of apple packing facilities. Existing coatings have limited efficacy in inactivating *Listeria*, underscoring the need for coatings with antimicrobial properties to ensure apple safety. Washington State University will develop innovative preventive strategies by incorporating natural antimicrobial compounds into commercial apple coatings, either alone or in combination with moderate heat during wax drying process, ultimately enhancing the microbial safety of fresh apples. This project will provide the apple industry with novel fruit coatings with antimicrobial properties that synergize with heated drying to eliminate *Listeria*, thereby enhancing food safety and reducing the risk of *Listeria* contamination in fresh apples.

Grant Recipient: Center for Produce Safety

Project Title: Color and material optimization of brushes for improved light-based sanitation

Award: \$250,000

Abstract: The Center for Produce Safety will partner with the University of Georgia to develop science-based recommendations on light-based antimicrobial treatments for washer and waxer brushes by brush filament color and material selection that are used in fruit packinghouses.

Grant Recipient: Center for Produce Safety

Project Title: Developing an automated and digital tool for integrated bird pest management in fresh produce fields

Award: \$57,595

Abstract: The Center for Produce Safety will partner with the University of Tennessee to develop a digital tool

that will identify bird presence and species based on audio surveillance of bird sounds and automatically activate multiple bird dispersal methods, which will deter high-risk birds from produce fields and reduce food contamination risks.

Grant Recipient: Oregon State University

Project Title: Sequential UV-C treatment and antimicrobial spray to control decay and food safety risks of apples

Award: \$249,956

Abstract: Oregon State University, in collaboration with Washington State University, proposes a research project to address critical postharvest fruit rot and safety issues in the apple industry through a novel sequential approach: UV-C treatment followed by the application of an antimicrobial spray. Anticipated outcomes include a cost-effective and efficient approach for apple postharvest treatment that could enhance market competitiveness and benefit industry stakeholders and consumers by improving apple safety, quality, and shelf-life. We will optimize the dosage of UV-C and an antimicrobial spray with USDA-certified commercial organic sanitizers or commercially available natural antimicrobial agents against *Listeria monocytogenes* and *Penicillium expansum*, evaluate post-treatment quality attributes and shelf-life of apples, and then validate the optimized treatment at a pilot scale.

Grant Recipient: Washington State University

Project Title: Variable rate fertigation for vineyards: feasibility and vine responses

Award: \$165,434

Abstract: Washington State University, in cooperation with Oregon State University, will demonstrate the technical feasibility of single plant water and nutrient management for vineyards, and evaluate its impact on grapevine performance in the face of soil, water, and climate variability.

Grant Recipient: Washington State University

Project Title: Predicting and Mitigating Freeze Damage in Raspberry and Blackberry

Award: \$248,324

Abstract: Caneberries are an economically important crop in Washington State represented by the historically significant red raspberry and emerging blackberry industries. However, revenues and crop expansion are limited by extreme weather events with freeze damage being the most important. Washington State University aims to inform and reduce freeze damage through research that predicts and mitigates freeze damage through completion of three complementary objectives. Completing this project will provide caneberry growers with new tools to assess and inform freeze mitigation practices and promote the viability and expansion of the industry. These objectives include: 1) Develop and release predictive cold hardiness models for several cultivars of blackberry; 2) Investigate automated sensing systems complimentary to manual dissection of buds to assess freeze damage in blackberry and raspberry; and 3) Investigate methods to reduce freeze damage in raspberry and blackberry. The project team has been successful developing cold hardiness models that are freely available through local agro-meteorological networks and has been requested to develop models for commercially important cultivars of blackberry to inform expansion and strategic timing of freeze mitigation measures. Developing cold hardiness models is time- and labor-intensive, however, so the team will explore automated sensing systems to expedite freeze damage assessments in parallel with model development. Lastly, new and commercially available products that require little-to-no infrastructural investments will be explored for their ability to mitigate freeze damage. Completing this project will provide caneberry growers with new tools to assess and inform freeze mitigation practices and promote the viability and expansion of the industry.

Grant Recipient: Washington State University

Project Title: Novel and valuable raspberry plant breeding datasets leading to new cultivars and molecular breeding tools

Award: \$178,245

Abstract: Washington State University will study a diverse group of raspberry types along with their genetic data to identify excellent parent material and develop molecular tools that will contribute to new varieties needed by raspberry growers to continue producing berries with excellent quality and horticultural traits.