

2019 Pacific Northwest Pear Research Strategic Plan



Vision: Preparing growers to meet 21st century challenges by setting research and development priorities and funding of research proposals focused on understanding the science of the pear production systems and maximizing return on investment to conventional, organic, fresh and processed pear growers in Oregon and Washington.

Mission: The Pear Research Subcommittee provides on-the-ground expertise in guiding high value research and development projects in support of the industry's most important research priorities.

Values: Target industry-identified research needs; Fund research projects that have clear, obtainable objectives and which document progress; Leverage pear grower funding in seeking other public and private sources of funding; Document measurable benefit to the industry; Balance current near-term grower needs while working on long-term production challenges; Transfer research outcomes to stakeholders and identify their collective contribution to the work.



Long Term Goals	Long Term Objectives	Activities	People
<p>Customer Satisfaction and Eating Quality: Deliver a superior product that creates repeat business and draws in new customers</p>	<ol style="list-style-type: none"> 1) Foster a formal university/USDA-ARS/Industry pear post-harvest collaboration to meet the post-harvest challenges of Northwest pear growers 2) Develop clear and broad-reaching methods to communicate the goals, objectives and outcomes of this research collaboration 3) Better utilize genomics research to improve consistent fruit quality delivered to the consumer 	<ol style="list-style-type: none"> 1) In FY2020, support/fund the university/USDA-ARS/Industry pear post-harvest collaborative team, asking that team to develop and communicate a short- and long-term research and extension plan to address pear postharvest challenges <i>In Fall 2019, WTFRC staff will engage with postharvest team once the postharvest ITT position is filled to request consideration of the plan; Invite Dr. Torres to annual PBNW meeting; team to present at 2020 Res Rev</i> 2) In the FY2021 pear research RFP, include the outcome of this collaborative planning effort, including assessment metrics, as part of the Subcommittee's pear research priorities when the funding opportunity is announced to regional researchers 3) Provide many opportunities for growers to see and taste their product and better understand the impact of postharvest research funding on consumer fruit quality <i>2020 research review discussion: Brian Focht & Carolina Torres (engaging and introduction), introduce new ITT hire?</i> 	<p>WSU/OSU/USDA postharvest horticulture, pathology and technology scientists; Pear Bureau Northwest staff; Industry post-harvest leaders; WTFRC staff</p>
<p>Integrated Pest Management (IPM): Fit pear psylla, fire blight and post-harvest decay management into the overall pear IPM program to reduce field, packing house, and market losses that threaten the economic viability of the grower</p>	<ol style="list-style-type: none"> 1) Encourage scientific collaboration to develop IPM objectives, associated research and potential impact assessments with the goal of reducing production losses associated with these pest categories 	<ol style="list-style-type: none"> 1) In FY2020, with industry support, research/extension partners and industry members will develop/revise a Pear Pest Management Strategic Plan (PMSP) with an enhanced focus on pear pest management research needs over the next 5 years, with research proposals developed from this plan to include quantifiable goals to assess progress <i>In Fall 2019 OSU IPPC will begin this effort as funded by the FPC/PPC; work with Katie Murray on delineating specific goals & outcomes for document (are we hitting the high points?)</i> 	<p>WSU/OSU/USDA IPM research and extension staff; Pear industry IPM practitioners; WSU Endowment Advisory Committee; Northwest Horticultural Council; WTFRC staff; WSU endowed chair in PH</p>

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	<p>2) Continue to pursue integrated strategies to reduce fire blight damage, including a better understanding of the genetic component of host plant resistance</p> <p>3) Continue to push issues key for pear psylla IPM</p> <p>4) Reduce postharvest losses from decay by 50% by 2030</p>	<p>2) Support the strong collaboration between Oregon State University (OSU) and WSU in evaluating novel methods and product formulations of fire blight control at the time of infection and post infection, including bacterial phages, and work to ensure that research and extension capacity in the PNW is maintained at OSU and enhanced with the support of the WSU Tree Fruit Endowment</p> <p style="color: red;">In FY 2020, WSU will begin the search for this position</p> <p>3) Increase pear psylla research and regulatory efforts on: best use timing for particle film or similar materials in psylla control while balancing the ability to clean and process the same fruit at the packing facility; Reduce overwintering populations of adult Psylla; Establish a maximum residue level (MRL) for Bexar (tofenpyrad) in Canada</p> <p style="color: red;">In July 2019, WTFRC staff will request that NHC's David Epstein look into the Bexar question</p> <p>4) Request/support proposal from WSU PH Systems Endowed Chair and PH ITT specialist (yet to be hired) to develop a tool to accurately assess incidence of PH decay in PNW pear packinghouses</p> <p style="color: red;">In Fall 2019, WTFRC staff will engage with postharvest team (Torres, Amiri, KC, Gallardo, new postharvest ITT hire, others?) to request an overall research and extension plan on decay management including a tool for warehouses to accurately quantify PH losses; team will be invited to present program overviews and outline of plan at 2020 Pear Res Rev; team may work with Hanrahan on strategy to protect sensitive packinghouse information during possible surveys</p>	<p>systems; WSU ITT specialist in PH</p>
<p>Genetics and Genomics: Develop pear rootstocks to improve fruit quality, early precocity, labor-friendliness, increase the potential for mechanization, generate a quicker ROI, and reduce IPM challenges; Of secondary importance is seeking/developing new varieties to share in the market excitement that apples are experiencing</p>	<p>1) Provide industry support for the WSU pear rootstock development program and the new USDA pear genetics and genomics position</p> <p>2) Encourage and develop focused demonstration plots in the Pacific Northwest, showcasing rootstock and new varieties</p>	<p>1) At the 2019 Pear research Review, the WSU pear rootstock breeder will present an overview of breeding research and objectives, including how projects from other WSU research groups support/enhance the formal breeding efforts and how other current and future might potentially benefit the program. The committee will discuss if additional technical information is needed to better understand/document the direction and potential for this work</p> <p style="color: red;">Completed in February 2019</p> <p>2) a) In FY 2019, initiate discussions with WSU/OSU research and extension staff regarding the development of a detailed inventory/history of existing pear research/demonstration plots in the PNW as part of an effort to identify needs and potential for future collaborators and demonstration sites, including becoming more involved in the Federal NC140 Regional Rootstock Research Project with pears This activity will be part of activities under 2b)</p> <p>b) By December 2019, discuss with the pear research subcommittee its interest in the following: Creating a list of preferred variety characteristic</p>	<p>WSU pear rootstock breeding program; USDA-ARS pear research geneticist; WSU endowed chair in tree fruit physiology; Tree Fruit Extension team; pear industry grower/cooperators; WTFRC staff; subcommittee members</p>

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		<p>traits for the PNW; initiating and creating demonstration plots with non-propagation agreements to pursue ways to introduce new pear varieties to the diverse industry while generating returns for the parent breeding program; pursuing demonstration plantings of new pear varieties with goal of evaluating for PNW conditions; and determine who will lead this effort.</p> <p>Pear scion breeding working group formed in Spring 2019 (Hanrahan, Milne, Evans, Godwin, Gix); a detailed plan and timeline is being developed and results will be presented at the 2020 Pear Res Rev</p> <p>c) In FY2021, showcase the variety of research efforts currently being done in pear genetics and genomics with fruit quality as a focus through YouTube style presentations or University outreach showcasing technology and innovation hopefully with cooperation of WSU and OSU. Maintain Engagement with WSU, USDA Genetic and Genomic fruit quality team, and RosBREED by a member/members of the committee including the appointed staff member from the WTFRC representing pear</p> <p>ADDITIONAL ACTIVITY: WTFRC to investigate/develop pool of independent scientific reviewers for complex genetics, genomics, or other "omics" research proposals beyond the subcommittee's comfort/expertise in assessing their technical merits</p>	
Long Term Goals	Long Term Objectives	Activities	People
<p>Horticulture: Create consistent high yields of target fruit with reduced labor inputs while maintaining moderate vigor to facilitate effective IPM strategies</p>	<ol style="list-style-type: none"> 1) Explore alternatives to improve consistency of crop set and balancing crop loads, in particular, investigate BMPs for chemical thinning of Bartlett 2) Develop irrigation and fertilizer strategies to reduce tree vigor and cork 3) Develop strategies to transform older tree canopies to more efficient architectures accessible to sunlight, sprayers, and labor 4) Increase consistent annual cropping in PNW pear blocks 	<ol style="list-style-type: none"> 1) Investigate and report research opportunities and present a proposal as appropriate at the Pear Research Review February 2020 <p>Schmidt will consult literature, Einhorn, Mussacchi, et al. to investigate current state of Bartlett thinning and present brief summary at 2020 Pear Res Rev</p> <ol style="list-style-type: none"> 2) Increase outreach to pear growers regarding current work on Honeycrisp and Anjous to reduce stress disorders including information on sensors, pack outs, tree performance, and economic analysis <p>WTFRC staff to recruit, help orient, & support new ITT hire in this area</p> <ol style="list-style-type: none"> 3) Support Musacchi program on pruning/training demonstrations in all PNWE pear growing districts; Integrate of other horticultural researchers and take advantage of opportunities in FY20 or FY21 to bring national/international horticulturists to visit pear growing areas in Washington State to share their experience and perspective. <p>WTFRC staff to recruit, help orient, & support new ITT hire in this area</p> <ol style="list-style-type: none"> 4) Work with OSU/WSU Extension and ITT staff to inventory existing demonstration Horticultural and training plots in the PNW and, based on industry needs assessment in each district, what additional cooperative 	<p>WTFRC staff; OSU/WSU pome fruit physiology programs; OSU/WSU Extension and ITT staff; Pear industry horticulturists and grower cooperators</p>

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		<p>educational demonstrations are needed. Delay implementation until the new Horticultural position in IT is filled by the WSU using Endowment funds.</p> <p style="color: red;">WTFRC staff to recruit, help orient, & support new ITT hire in this area (2020?)</p>	
<p><u>Food Safety</u></p>	<p>1) Leverage latest food safety information for use in the pear industry</p>	<p>1) Continue support for NHC, WSTFA, WSU, OSU, WTFRC and USDA food safety research, outreach, and education programs and maintain annual reporting from appropriate programs to research subcommittee regarding ongoing food safety efforts</p> <p style="color: red;">Hanrahan to update subcommittee on food safety developments at annual Pear Res Revs; may delegate task to others (Critzler?) as appropriate</p>	<p>WTFRC staff; WSTFA staff; Northwest Horticultural staff; OSU/WSU scientists; ODAWSDA/USDA regulatory staff</p>
<p><u>Stakeholder Relations:</u> Promote transparency, accountability, and two-way communication that facilitates engagement from science community and promotes industry outreach</p>	<p>1) Ensure research funding aligns with industry priorities</p> <p>2) Promote industry awareness of FPC/PPC support for research</p> <p>3) Develop a mentoring program for future Subcommittee members</p> <p>4) Increase routine reporting to industry regarding ongoing pear research activities</p> <p>5) Develop and refine working agreements with PBNW, WTFRC, and WSFC</p>	<p>1) Conduct industry-wide survey of research priorities every 5 years (next iteration in 2023)</p> <p style="color: red;">Completed in 2018</p> <p>2) Develop a pear research logo (Feb 2019) and request funded scientists to acknowledge funding source and use logo as appropriate in various media, reports, presentations</p> <p style="color: red;">Completed Spring 2019</p> <p>3) Invite participation of at least one prospective committee member from each grower district (Medford, Mid-Columbia, Yakima, NCW) in a potential new member mentoring program by Feb. 2020 and report on mentor program to FPC & PPC each May</p> <p style="color: red;">WTFRC staff to support chair in these efforts</p> <p>4) Produce semi-annual report and presentation for distribution in Good Fruit Grower, WSTFA conference, and other appropriate media outlets and industry meetings</p> <p style="color: red;">WTFRC staff to work with committee chair to write annual research summary for use in meetings and media (Good Fruit Grower, Fruit Matters, generic PPT slides for oral presentations)</p> <p>5) Review current agreements each December and propose revisions to "Pear Research Project Funding Process" document for input and approval at February Research Review, including the proposed revision of the marketing committee by-laws to more clearly specify appointments to the research subcommittee</p> <p style="color: red;">Bylaw revisions nearly complete; regular reviews of agreements and SOPs to be an ongoing process</p>	

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	<p>6) Improve web access to research reports</p> <p>7) Promote collaboration between USDA-ARS, OSU, and WSU pear research programs</p>	<p>6) Improve linkage between WTFRC and PBNW websites upon completion of WTFRC website and searchable database overhaul</p> <p style="color: red;">Curtiss/WTFRC staff to facilitate linkage process when new WTFRC website is launched (June/July 2019?)</p> <p>7) On-going</p> <p style="color: red;">ADDITIONAL ACTIVITIES: WTFRC to provide feedback to scientists on all proposals, regardless of funding status;</p> <p style="color: red;">WTFRC staff to help “on-board” new scientists to help them connect with key industry leaders, introduce them to industry challenges, and orient them to pear research proposal and funding process</p>	
<p>Research Subcommittee management: Ensure efficient, impactful management of subcommittee without placing excessive demands on volunteer members</p>	<p>1) Create and maintain sustainable management plan for subcommittee chair duties</p> <p>2) Delegate management tasks to partners (i.e. staff of WTFRC, PBNW, WSFC, and other subcommittee members) as appropriate</p>	<p>1) Develop position description (or SOP) for subcommittee chair delineating routine responsibilities and basic annual workplan including key meetings and deadlines as part of the current Pear Research Funding Process Protocol</p> <p style="color: red;">Gix to delineate key duties/activities of committee chair beyond those described in current work agreements/documents</p> <p style="color: red;">WTFRC to propose transparent, accountable procedure to allow subcommittee to purchase supplies and/or recover costs (office supplies, laptop, travel expenses, etc.)</p> <p>2) Identify specific tasks (e.g. management of strategic plan; drafting support letters; attendance at industry meetings; representation on or with other industry/university/federal agency boards or advisory committees; communicating with individual researchers; etc.) which may be delegated to others and solicit appropriate partners to assume those tasks</p> <p style="color: red;">WTFRC staff to help Gix identify/develop opportunities to delegate tasks identified in activity #1</p>	<p>WTRFC staff; FPC/PPC staff; Pear Research Subcommittee Chair</p>