

PNW PEAR RESEARCH PRIORITIES FOR 2017

Representing Fresh and Processed Pear in Oregon and Washington

The task of this sub-committee is to encourage and support research on pears that improves dollar returns per acre to the land. We believe this combines production issues on the farm, processing issues during packaging, and ultimately buyer and consumer acceptance.

The pear industry we represent contributes .5 Billion dollars per year to Oregon and Washington economies through producers and fruit warehouses.

The Stakeholder discussions in October 2016 had an underlying theme. In recent years dollar returns to the land have been good yet input costs are quickly increasing, especially labor and IPM issues. Consistent cropping of high yields per acre with targeted fruit size and quality will be necessary to retain profitability. Pear production and warehousing are heavily dependent on labor. Concerns with labor availability, efficiency, and cost are a consistent through all the below listed areas. This emphasis on cost and efficiency may create value in revisiting budgets and costs of production studies.

One of the long term items that rated highly in our meeting was “A unified, comprehensive, and aggressive marketing promotion and effort”. Although I mention this I do not know how to turn this into a researchable need.

Highest Research Priorities

POSTHARVEST QUALITY: *Delivering a more consistent product, improving consumer eating quality, MCP use, reducing decay, and post-harvest disorders are key areas.*

MCP: This topic was the focus of discussion especially for Bartlett and Anjou pears. The need for a tool to control scald, extend the packing season, maintain fruit visual quality on the store shelf, and deliver a quality eating experience to the end consumer.

Needs: Understanding ripening triggers - - need to improve consistency of product delivered to the consumer - - need to be able to measure flavor - - Understand impact on skin physiology on post-harvest treated fruit packed 6 months after treatment - - need to improve guidelines on industry use of MCP - - need to conduct consumer taste panels on MCP and control treated pears.

IMPROVE AND EXTEND STORAGE LIFE: Extend the packing season to meet market demands for different types of packs (bags/pouches/display trays/wrap packs/etc.).

Needs: Understand the impact of variation of fruit quality on the tree at harvest and how this relates to a quality eating experience for the end consumer - - need to continue to develop post-harvest decay resistance management and or develop new decay control strategies - - need to automate warehouse packaging through improved sorting technology, fruit coatings, and reduce late season handling losses.

DEVELOP AND IMPROVE VALUE ADDED PRODUCTS FOR PEARS: Continue work on fresh slice pear products. Firmness, shelf life, and consistent flavor remain challenges.

FOOD SAFETY: Critical need is to understand where the actual vs. perceived risks are.

IPM: *Insect Pest Management: Regional needs are different and impacted by climate and type of pear production. Understanding the driving factors in these differences is important to the industry.*

Needs: more research on 2-spot mite management, improving predation, and understanding stresses caused by climate as well as having some chemical control options - - need continued work on psylla, (this insect impacts harvest labor availability, reduces the quality/quantity of packs per bin of prime marketable fruit, and reduces cropping potential of the tree) - - need to understand if some of our issues are heat cycle/climate related or due to resistance in mites, psylla, and codling moth - - need to reduce overwintering adult psylla populations or reduce their successful egg laying capacity - - need to investigate season long impacts of oil/oil calcium/oil calcium Neem applications on tree health and calcium uptake - - need to investigate new and novel practices to improve pear integrated control practices conventionally and organically - - need to team up with groups working with other crops facing psyllid challenges (potatoes and Citrus).

FIREBLIGHT:

Needs: to understand rat tail bloom physiology - - need to reduce inoculum levels during infection periods - - need to understand the physiology that makes some varieties much more susceptible to tree losses once blight infections take place.

GENETICS:

ROOTSTOCKS: This topic runs through fruit quality, improving orchard profitability, improving labor friendliness, mechanization, and improving IPM issues. There is recognition that rootstock improvement will allow modernization and transformation of the PNW Pear industry.

Needs: Maintain support in long term breeding program while continuing to investigate alternative rootstock currently available from other producing areas worldwide.

VARIETIES: This topic takes second place to the focus of rootstock development.

Needs: Awareness of varieties being developed around the world - - need to have priorities established for PNW (develop targeted traits) - - need to understand consumer preferences, is there a market preference for specific flavors, crispness, and ready to eat qualities?

Horticulture: *Creating high yield, targeted fruit size and grades, consistent cropping combined with labor input reduction per unit produced.*

Needs: Improving fruit quality - - developing and improving chemical fruit thinning on Bartletts - - improving fruit set/reduce fruit drop (could be pollination - PGRs – tree architecture) - - managing vigor impacting fruit set and sizing while not stimulating vegetative growth - - improving calcium uptake in the fruit and reducing stress disorders - - need to understand the nutritional and orchard impacts on post-harvest decay - - improved water management and fertility strategies.

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