Pomology Research on Tender Fruit at the University of Guelph

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Present Funding Acknowledgements:

- Univ. of Guelph/OMAFRA Sustainable Production systems competitive research program
- NPF&VGA
Current Research Focus

• Orchard management practices to improve production efficiency, profitability, and fruit quality
  • Fruit thinning
  • Fruit quality
  • Harvest Management

• Beneficial use of organic and inorganic amendments for improving fruit quality, tree growth and health
Current Research Focus

- Fruit tree water relations, crop response to micro irrigation, and water conservation measures physiology
Tender Fruit Program Impact

Research Initiated in 2002/2003

Peaches

• developed new methods to manage crop load and reduce hand thinning
• Efficacy of AVG (ReTain) on processing and fresh market peach cultivars
• New size-controlling rootstocks for peaches and nectarines
• Performance of columnar peaches in Canada
• Quantified nitrate and tile drainage losses from peach orchards
Peaches (continued)

- A 6-YR peach/nectarine research plot in Simcoe has demonstrated that high quality peaches that can be produced in Norfolk.
- Investigated the genes involved in fruit abscission of peach (A. Taheri and J. Subramanian).
Pomology: The Science of Growing Fruit

Welcome to Our Site

Research interests of this programme are aimed at enhancing our understanding of the physiological processing influencing tree growth, flowering, and fruit productivity. Studies focus on the performance of new advanced and named cultivars for suitability in Ontario. New g 갖고 that displays resistance to pests and diseases are beneficial to reduce our reliance on agrochemicals and pesticides. Studies also focus on utilizing dwarfing Malus and Pirus rootstocks and their influence on precocity, cropping efficiency, fruit quality, tree vigour, and the performance of various cultivar/rootstock combinations in intensive orchard production systems.
One of 4 new methods to Thin Peaches

To use plant bioregulators to regulate the crop load of peaches and cherries

Method:

- Use flower inhibitors (GA₃) for partial inhibition of flowering of peaches and cherries

Fig. 7 Effect of GA rate on crop load and fruit size of "Red Haven" peach trees, 2003

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Untreated control
GA at 100 ppm
Tender Fruit Program Impact

Sweet and Tart Cherries

- Reported on the long-term performance on new size controlling rootstocks
- Efficacy of gibberellic acid on fruit quality
- Quantified influence of tree covers for reducing rain-induced fruit cracking of sweet cherries
- Have demonstrated a 40% reduction in vegetative growth through the use of prohexidione calcium (Apogee)
- That fruit size cannot be readily increased through reductions in crop load (thinning).
Cherry Rootstocks

Fig. 1 Tree size and cumulative yield of Hedelfingen in relation to rootstock

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Barriers limiting Research Capability

- Eroding resources
  - Technical assistance
  - Financial support through OMAFRA
- Access to funding
- Partnering with Industry
Most important Issue Facing the OTFPMB that my research can Impact

Labour Saving Technology for Improving Fruit Quality and Increasing Market Share of Ontario Tender Crops
Ontario Agricultural Services Coordinating Committee (OASCC)

- Most competitive OMAFRA research projects require some linkage to the Ontario Hort Crops Research and Services Annual Reports
- New competitive funding will be provided through one of 7 themes:
  - Agricultural and Rural Policy
  - Emergency Management
  - Food for Health
  - Product Development and Enhancement through Value Chains
  - Bioeconomy - Industrial Uses
  - Environmental Sustainability
  - Production Systems

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