



# **Influence of Gibberellic Acid (GA<sub>3</sub>) on Fruit Quality of Sweet Cherries**

**John Cline**

**University of Guelph,  
Simcoe & Vineland Campuses**

**Tel: 519-426-7127 Ext 331**

**[Jcline@uoguelph.ca](mailto:Jcline@uoguelph.ca)**

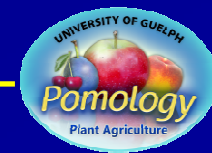
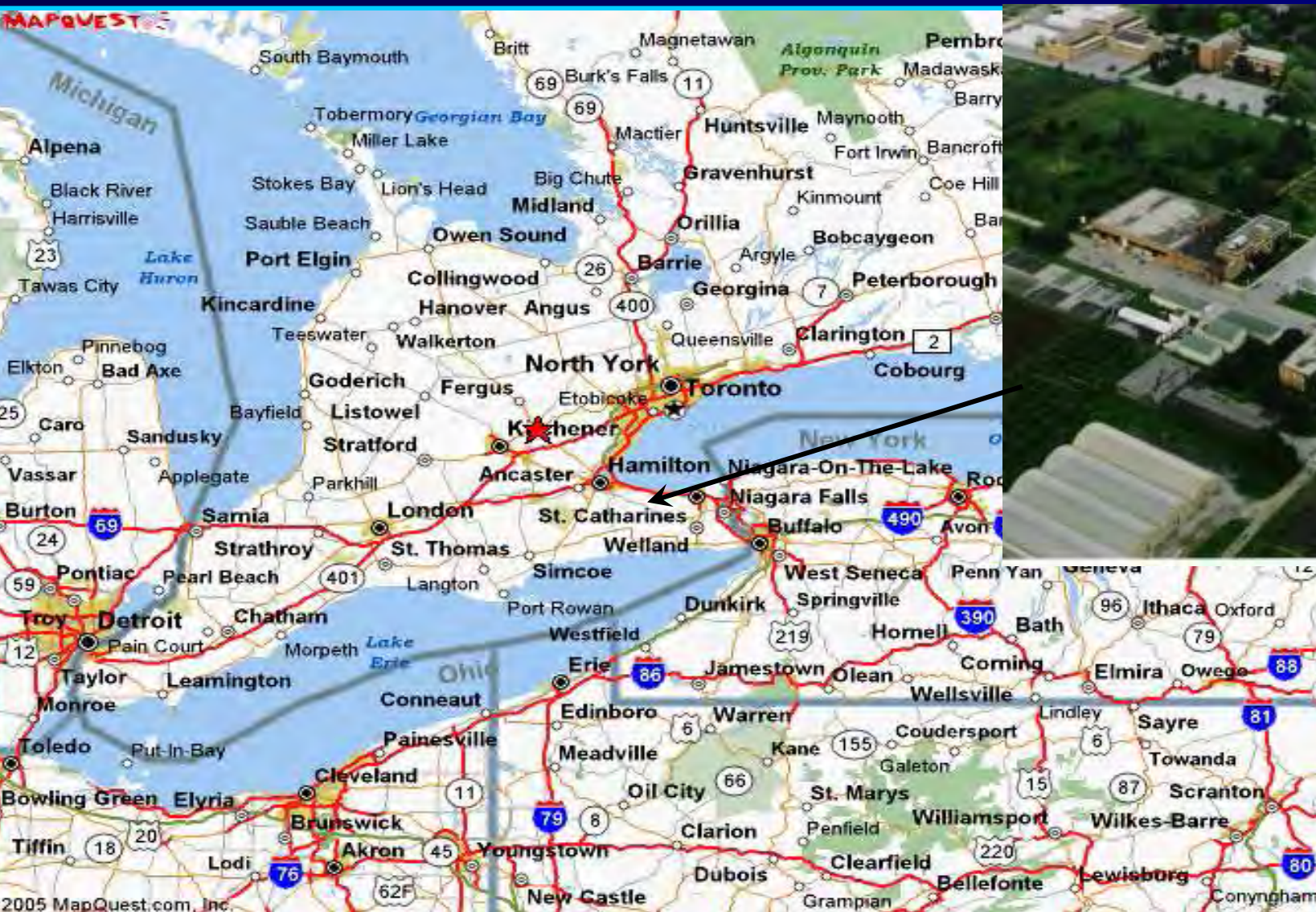
# Presentation Outline

- 🍒 Introduction
- 🍒 Historical perspective of gibberellic acid (GA) use increase the firmness of sweet cherries
- 🍒 Current labeled products and recommendations
- 🍒 Other effects of GA
- 🍒 Data from Ontario



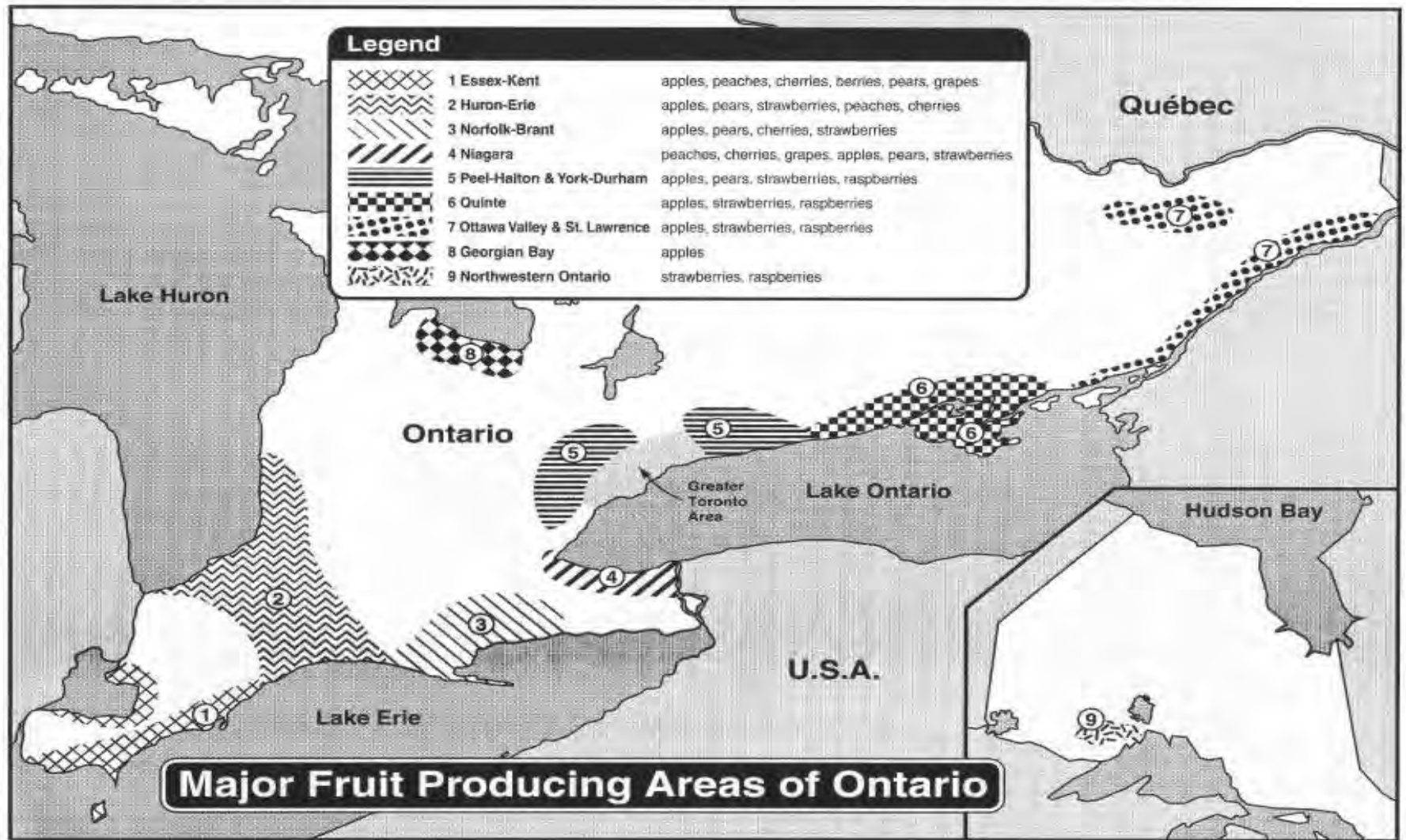


# University of Guelph - Simcoe and Vineland Research Stations





# Major Fruit Producing Areas of Ontario (Source: OMAF)



## PGR

## Responses

*Auxin*

Cell enlargement, Apical dominance, Rooting promotion, Fruit thinning, Fruit drop prevention

*Gibberrellin*

Firmness, cell enlargement, seedlessness, cause fruit set, flower induction, flower reduction (thinning), break dormancy, Increase seed germination, delay of senescence, modify sex expression

*Cytokinin*

Cell division, Counteract apical dominance, Branching agent, Delay of senescence, Cause fruit abscission

*Ethylene*

Ripening agent, Causes leaf & fruit abscission, Promotes radical growth

*Abscisic Acid*

Promotes leaf & fruit abscission, Regulates dormancy in perennials, Controls hydric status through stomata opening control



Dr. Silvan Witwer

# 1970's

🍒 Dr. Ed Proebsting of WSU was one of the first to report on the use of GA on sweet cherries to delay maturity and improve quality (firmness)  
(Proebsting, 1972 WSU Extension Multilith 3520)



Function	Products Available	Research Experience
1. Inhibit Flowering	GA <sub>3</sub> , GA <sub>4</sub> , GA <sub>7</sub>	Apples, Peaches, Cherries
2. Promote Flowering	Ethrel, NAA	Apple
3. Influence fruit ripening and quality	GA <sub>3</sub> , GA <sub>4</sub> , GA <sub>7</sub> , Ethrel, Retain	Cherries, Apples, Peach
4. Fruit thinning	Carbaryl*, NAA, BA, Surfactants,	Apple, Peach
5. Influence ethylene synthesis	Ethrel, MCP, ReTain	Apple, Peach
6. Fruit finish	GA, Koalin Clay*	Apple,
7. Change fruit shape	Benzyl adenine (BA)	Apple
8. Reduce Preharvest drop	NAA, ReTain	Apple, Peach
9. Reduce Vegetative growth	Apogee	Apple, Peach

\* - these products are not plant growth regulators



# Use Pattern

## Timing:

- Late stage II, pit hardening (translucent green to straw colour)
- Use sufficient water volume to ensure thorough wetting

## Concentration

- 42 – 126 ppm GA<sub>3</sub> (16-48 grams ai/acre)
- [\$61 - \$183/acre; 100 gallons/acre]

## Other Effects/Precautions

- Avoid overdosing lower canopy
- Avoid unusually warm/cold days
- Less effective on early ripening cultivars
- Excessive concentrations can reduce return bloom

