



Cornell University
Cooperative Extension

*Helping New Yorkers Improve their Lives
and Communities*



Extension Programs Respond To 2012 Seasonal Extremes In Orchards.

Issues/Needs:

The abnormally high temperatures March 12-22, 2012, resulted in accelerated bud development in tree fruit crops. We recorded green tip in McIntosh on March 17-19 across the Lake Ontario Fruit region, initiating the beginning of the growing season 3-4 weeks ahead of normal. Freezing temperatures in the low 20's on March 27 and 31 resulted in bud damage in apples, pears, peaches, and cherries, as well as apricots and plums in full bloom. The bloom on apples opened in mid-April and freezing low temperatures dipped into the low 20's the end of April resulting in more blossom loss in apples, peaches, pears, plums, and cherries. There was also a serious drought in June through July, further stressing grower ability to produce quality fruit and keep trees healthy for future seasons. Growers needed guidance on all aspects of crop and business management under the extreme weather conditions (not experienced since 1945).

Response:

The Lake Ontario Fruit Program of CCE adjusted all programming to address a stressed fruit industry. The team disseminated tree developmental model predictions (based on Cornell research) for green tip and bloom which triggered the beginning of an early pest management season and alerted growers of critical temperatures. After several critical freezes, a Post-Bloom Field Summit was held in 2 locations to gather advice for 180 growers regarding horticultural practices to manage excessive tree growth with a light crop, adjust crop load where crop might be injured by frost, adjust fertilization, gather and maintain crop yield records for crop insurance claims, maintain adequate pest management programs, recommend irrigation needs across the region based on NEWA precipitation records, adjust harvest timing based on the early spring, estimate labor needs, and introduced services provided by FarmNet. All of these topics were coordinated in a Statewide Fruit Program Work Team meeting with faculty and stakeholders and addressed in weekly newsletters throughout the growing season.

The annual LOF summer tour visited 5 farms in Wayne County attracting 250 growers. The tour focused on tools growers could use, such as the Orchard Rite wind machine, to adapt to weather and climate change and prevent future losses. Consumers were kept up to date on the potential crop loss and availability of fruit through radio and TV news programs. Winter educational programs were planned to assist growers in choosing appropriate climate risk mitigation for their farms.

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CCE IMPACT: CCE AT WORK

Outcome/Impacts

NY produced 720 million pounds of apples in 2012, down 41% from 2011; 2.7 million pounds of tart cherries, down 54%; 300 tons of sweet cherries, down 57% worth \$1.07 million down from \$2.11 million; 2,600 tons of peaches, down 62%, worth at \$4.02 million, is down 52 percent; and 3,100 tons of pears, down 74% valued at \$2.35 million, down 66 percent. **The net loss of fruit value in tree fruit and berries in 2012 was \$71M.**

Over 300 growers improved documentation of crop reductions due to fruit loss or fruit quality, improving their ability to secure a maximum crop insurance indemnity through NAP insurance, Multiple Peril Crop Insurance, or Adjusted Gross Income Insurance. Growers also improved their communication with their lenders in securing additional operating funds or restructuring loans in anticipation of reduced income due to crop losses from freeze and drought damage.

Twelve NYSDOL Agricultural Labor Specialists were able to better understand 2012 crop conditions, Cornell Cooperative Extension educational programming and working with growers in NYS to secure qualified seasonal workers. Harvest labor was reduced from 10,000 harvest workers in 2011 to approximately 6,000 in 2012 resulting in reduced economic impact on local economies in the apple regions.

Growers managed excessive tree growth, reduced fertilizer rates, conducted adequate pest management practices, irrigated based on NEWA precipitation records, adjusted to decreased labor needs, and were ready for a short and anticipated harvest.

Information was conveyed to EDEN, to the public, and government officials warning of economic impacts of weather issues on the NY economy. This was a coordinated compilation of grower and extension experience across the state and Cornell faculty.

Many growers have invested in frost protection, installing over 30 wind machines (\$30,000 per machine), air drain fans (\$7,000), smudge pots, opening hedge rows to improve air drainage, and are researching the possibility of hiring helicopters to assist in situations when the other methods will not be effective. Growers gained a better understanding of where their high risk orchards are relative to microclimates.

More growers are exploring irrigation water sources as they invest in new plantings to promote tree growth and early yields for early payback on establishment costs.

