

New Technique Thins Excess Blossoms and Boosts Tree Fruit Size



Peaches harvested from experimental trees at the Appalachian Fruit Research Station. *Click the image for more information about it.*

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November 23, 2007 Too many flowers on peach and apple trees are not necessarily a good thing. If all of the flowers that formed in springtime were allowed to become fruit, the resulting crop may be large, but the fruit would be excessively small and unmarketable. Larger fruit commands a higher market price.

Today, U.S. fruit growers are spending up to \$500 per acre to hand-remove excess blossoms, at a total annual cost of more than \$156 million. It's a tedious and time-consuming process—often used in peach production—and it, like chemical fruit thinning, may be ineffective as well as expensive.

That's why Agricultural Research Service ([ARS](#)) scientists have been working on a more efficient way to reduce the number of blossoms on a tree to promote more profitable fruit. ARS is the [U.S. Department of Agriculture](#)'s chief scientific research agency.

At the [ARS Appalachian Fruit Research Laboratory](#) in Kearneysville, W.Va., plant physiologist [Thomas Tworkoski](#) and horticulturist [Stephen Miller](#) have experimented with using an essential oil plant extract to reduce the number of blossoms on a tree, allowing more profitable fruit to grow. Adopting such an environmentally sound approach to blossom thinning would prevent limb breakage from excess fruit weight, while yielding the larger fruit many consumers prefer.

The new method involves spraying fruit trees with the natural plant product while the tree is in bloom. The plant extract damages the blossoms' reproductive tissues and prevents pollination and fertilization. Flowers are sufficiently affected shortly after treatment. The concentration of essential oil plant extract determines the degree of blossom fall. Tworkoski and Miller are fine-tuning the timing of application with the bloom cycles of various fruit trees including apples, peaches, pears and other high-value fruit trees.

Not only can this method meet the tree fruit industry's needs for reliable blossom thinners that are safe and environment-friendly, it may also be acceptable for use in organic fruit production. A patent application has been submitted for this technology, and ARS is looking for cooperative research partners to assist with small field trials.