

Horizontal string trimmer reduces labor costs, increases peach size

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The horizontal prototype of a string thinner is designed to thin peach blossoms in orchards trained to open-center or vase systems. Credit: Photo courtesy of Tara Baugher

As consumer demand for premium fruit increases, growers are being challenged to bring consistently high-quality fruit to market. And to boost their bottom line, orchard owners are experimenting with new techniques that can increase fruit quality while reducing labor costs.

Hand thinning, a common practice employed by growers to produce larger, healthier [fruit](#), is among the most labor-intensive of orchard practices, with a significant impact on [fruit production](#) overhead, and, ultimately, prices paid by consumers. A research team from Penn State published the results of new research on a horizontal string thinner used

in peach production in a recent issue of *HortTechnology*. A string thinner prototype for open-center tree canopies was tested in six orchards. Remarkably, fruit size at harvest was increased by the horizontal string thinner in all but one trial.

Project leaders Tara Baugher and Jim Schupp noted that higher-quality fruit can result when "blossom thinning" is used. The thinning technique ideally removes 50% to 75% of the excess fruit early in the growing season and is most often done by hand. But the practice is labor-intensive and can carry an enormous financial burden; a recent survey reported that Eastern peach growers commonly spend \$350 to \$600 per acre for hand-thinning peaches, while California peach producers spent an average of \$1000 per acre, with extremes of up to \$1500 per acre reported.

New mechanical string blossom thinner prototypes may offer cost-effective alternatives to hand thinning, with a favorable impact on grower profitability by reducing labor requirements and improving fruit size and quality. The team designed experiments that compared the efficacy of the horizontal string blossom thinner in traditional vase-shaped peach canopies to conventional hand thinning at 35 to 40 days after bloom, and evaluated several labor-efficient bloom-thinning methods in various combinations.

The horizontal string thinner prototype reduced blossom density, crop load density, and hand fruit thinning time in five of six trials, resulting in significant reductions in labor costs. According to the report, the percentage of blossom removal in open-center canopies was more variable than the percentage of removal reported previously with a vertical string thinner in perpendicular "V" canopies. The scientists also noted that two combination treatments—mechanical thinning followed by hand blossom thinning, and thinning with a horizontal followed by a vertical string thinner—suggested additional strategies for achieving the

most desirable thinning results.

Baughner observed that, while this research shows the potential benefits of a horizontal blossom thinner in traditional vase-shaped peach tree canopies, "the increased speed and efficacy of mechanical thinning technology may be an incentive to hasten industry adoption of narrow canopy training systems."

More information: The complete study and abstract are available on the ASHS HortTechnology electronic journal web site:
[horttech.ashspublications.org/ ... nt/abstract/19/4/755](http://horttech.ashspublications.org/...nt/abstract/19/4/755)

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