

Demonstration of Darwin Blossom Thinner

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Bartlett pear trees are generally not thinned, but some years such as 2009 can produce excessive fruit that are relatively small. Bosc pears are often thinned. Thinning of the fruit using a mechanical thinner might increase fruit size in a cost-effective manner.

The Darwin blossom thinner is a tractor mounted implement with hundreds rotating plastic cords on a vertical axis. It was leased on March 23 and a tractor driver from the Kearney Agricultural Center operated it on BPM variety, which was at or past petal fall, and on rows of hedged Bartlett (photo at right) and Bosc on a V trellis, both of which were at full bloom. The Bartlett trees appeared to have a greater proportion of their flowers on the outside edge of the canopy than the Bosc trees. The implement was operated at 150 to 175 RPM. No replication was used.



We measured diameters of 100 randomly-selected thinned and unthinned fruit before harvest. Thinned Bartlett fruit were slightly larger than unthinned fruit, whereas the average diameter of thinned and unthinned Bosc fruit was nearly identical (Table 1).

Substantial damage was found on BPM fruit because of the late timing. However, some damage was also found on Bartlett and Bosc (photo at right). In order to evaluate the damage on Bosc fruit, we walked down two thinned rows and two unthinned rows, counting damaged fruit that were visible from the row middles (one side of the canopy). The rows were 95 trees long. On the two thinned rows, we found 17 and 23 damaged fruit, whereas two adjacent unthinned rows showed no scarring damage.



A concern expressed by some people familiar with the Darwin blossom thinner is that fire blight will spread rapidly from tree to tree. Although that can be a concern if substantial holdover cankers are present, but in the rows treated there appeared to be no additional blight beyond that found in the rest of the orchard.

This test would suggest that the increase in fruit diameter may justify the use of mechanical thinning where blossom density on the outside of the canopy is high, but there is potential for fruit damage. It may be possible to make adjustments to reduce such damage, including rotation speed and time of thinning.

Table 1. Average fruit size (inches).

VARIETY:	Thinned	Unthinned
Bosc	2.56	2.54
Bartlett	2.60	2.53