Tree Shaking is Promising as a Crop Load Management Tool in Pecans

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Bottom Line

Thinning of overloaded pecan trees via a properly equipped shaker appears to be a good crop load management tool as both quality and size were improved. Return set was improved nicely as well.

Summary

Alternate bearing brought on from overcropping continues to cause pecan growers a great deal of concern. One way of overcoming this problem is to remove some of the crop with a tree shaker. Nuts need to reach full size to have enough volume to be shaken from the tree, hence these trees were shaken on 1 August. Nuts from thinned trees were larger and had a higher percent kernel than nuts from non-thinned trees. Return set was improved dramatically over non-thinned trees.

Introduction

Nut quality continues to be fair, at best, in well managed orchards in certain years. It appears that at times pecan varieties put on too many pecans to properly fill them. Management practices need to become consistent with the crop load to avoid these severe up and down tendencies. One potential way is by shaking the trees once the nuts are large enough to be dislodged.

Experiment

Overloaded 'Shoshoni' trees at Heartland Pecans in northeast Atascosa County were selected for the shaking treatment. Trees were shaken on 1 August with a trunk shaker fitted with doughnut pads to avoid damage to the trunk. Pecans were at the ¾ to full shell hardening stage. One to 3 shakes were required to detach sufficient nuts from the tree. Approximately 1260 to 1341 nuts were shaken from each tree. Using 54.5 nuts/lb (average of '95 quality stats from thinned and unthinned trees) this amounts to 23 to 25 lbs of pecans per tree. Both groups of trees were

Table 1. The influence of thinning via trunk shaking on 'Shoshoni'[z] nut quality when shaken on 1 August 1995 at Heartland Pecans.

Treatment	Nut size # nuts/lb	Percent kernel	Return nut set (y)
Thinned	50.7 a	51.3 b	90 b
Unthinned	58.3 b	46.8 a	0 a

Means followed by different letters are significant at the .01 level.

[z]Average statistics for 'Shoshoni' are 40.9 nuts/lb and 53.8% kernel.

[y]Evaluated on 5/20/96; full crop = 100, no crop = 0.

managed similarly until harvest. Trees were shaken for harvest on 12 October and nuts were collected for analysis by CEAs Batchelor and Perez. Quality evaluations were performed in early October.

Results

As can be seen from the data presented (Table 1), quality stats were improved at the .01 level when the trees were thinned or shaken.

Conclusions

The nuts from the thinned trees were significantly larger by almost 7 pecans and had 6% more kernel. Although the thinned nuts failed to approach the state average statistic for ‘Shoshoni,’ ie. 40.9 nuts/lb and 53.8% kernel, the results were still highly significant. Return set in ‘96 was drastically improved.

Implications

It may be that trees need to be shook earlier in the season to further affect nut size and percent kernel.