

The timing of flush development affects the flowering of avocado (*Persea americana*) and macadamia (*Macadamia integrifolia* × *tetraphylla*)

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Abstract

Orchard trees of A4 macadamia (*Macadamia integrifolia* × *tetraphylla*) and Hass avocado (*Persea americana*) were thinned and tip-pruned at different times to generate a range of trees with different stages of leafy flush development. The stagger in the start of the first flush following pruning was repeated in the start of subsequent flushes, so pruning was an effective means of changing the phase of the cycle of flush development.

The difference in phase affected flowering. In macadamia, over 80% of the variance in flowering was explained by regression against pruning time. Flowering ranged from 0 to 43% of tip-pruned branches, with the most profuse flowering on flushes appearing in July. In avocado, over 45% of the variance in flowering of the first flush following pruning, and over 35% of the second flush, was explained by regression against pruning time, with more flowering on those flushes starting nearer to the winter solstice.

The control trees flowered better than the pruned trees but there was too little information to explain the difference. The macadamia control trees had less synchronised flushing than the pruned trees, and were not subject to internal thinning. The avocado control trees appeared to have a phase of flush development different from the pruned trees, with a summer flush commencing before the first pruning date and maturing before the maturation of the first post-pruning flushes.

More research is needed for related canopy management guidelines.

Keywords: canopy management, pruning, evergreen subtropical trees.

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