



—Scientific Note—

A Look at Vigor Management Options for Growing Peaches in Florida's Subtropical Climate

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The postharvest growing season for peaches in Florida can last up to 200 days, requiring that growers manage pest and disease pressures to maintain a healthy tree canopy. A larger canopy reduces air movement, reduces spray penetration, and increases shading. If left unmanaged, the management of the bearing surface of vigorous trees require ladders to prune or harvest fruit effectively. Hand pruning can become cost-prohibitive, thus alternative methods like root pruning could be of use pending the development of an effective management strategy.

Plants generally maintain a shoot:root ratio. Altering either the shoots or the roots could lead to the manipulation of the other as the plant regains the original balance. Summer pruning should keep trees at a manageable size as energy goes towards regrowing shoots to achieve the shoot:root balance. It is thought that root pruning could cause the shoots to have reduced growth as energy is shifted to root growth in an attempt to regain the shoot:root balance. Root pruning is a more common practice with apple than with other orchards. Root pruning done as early as the 1980s, and has been found to be most effective when done during the late dormant part of the season. It was also found that the degree of growth control was greater the closer to the trunk of the tree the pruning was done. However, not many studies have been conducted on root pruning in *Prunus* species. Thus, the effects of root pruning should be evaluated as it might be an effective means of vigor control for other cultivars of peach, pending appropriate trials. Some of the other management techniques that we evaluated consisted of dwarfing rootstocks and the use of prohexadione-calcium to block gibberellin biosynthesis. Our evaluation of rootstocks was brief as only one rootstock is cur-

rently recommended for use in Florida due to its resistance to rootknot nematode *Meloidyne floridensis*. Additional rootstocks are currently being trialed for use in Florida, however none have been tested across the entire state and so cannot be recommended for commercial use. 'MP-29' is a standout among those being trialed as it has promise for being tolerant to flooding.

The current lack of compact scion varieties and/or dwarfing rootstocks recommended for commercial use in Florida means that growers must use alternatives such as chemical or cultural techniques to control canopy size and shape. The use of PGRs that block GA biosynthesis could result in shorter internode length and ultimately reduced overall vegetative growth. Kudos 27.5 WDG (Fine Agrochemicals, Worcester, UK), which contains the active ingredient prohexadione-calcium, is a product labeled for use in apples and sweet cherries. It inhibits gibberellin production resulting in reduced internode elongation, ultimately reducing tree growth. Its use as a plant growth regulator is more common in apple orchards than in stonefruit. Prohexadione calcium could be used to reduce stem length in peach for growers trying to manage vigorous growth during Florida summers.

In review, Florida growers need a toolkit of cultural and chemical techniques as they continue to explore the opportunities for subtropical stone fruit production. Summer pruning techniques have been developed, alternative rootstock options are being trialed, treatments such as root pruning and prohexadione calcium are all being tested. In the future we hope to provide recommendations for growth control of peach trees under Florida growing conditions.

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