

Workshop Papers and Authors

Presiding: George M. Greene II

Current Status of Thinning of Pome and Stone Fruit Crops: Introduction to the Workshop

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Mechanisms of Action of Apple Thinning Chemicals

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Blossom Thinning of Pome and Stone Fruit

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Current Status of Thinning of Pome and Stone Fruit Crops

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There are two overall physiological processes involved in the efficient production of pome and stone fruits. The first is capturing the energy of the sun through the process of photosynthesis. The percentage of radiant energy that can be captured in a mature apple orchard with a complete canopy is dependent on the height and width of the trees and on the row spacing. In an outstandingly well designed orchard, the trees can capture $\approx 70\%$ of the radiant energy received, but many commercial orchards today capture $< 50\%$.

The second process involved in efficient production is the conversion of captured energy into fruit. This process is very complicated and involves the continual formation of productive fruiting wood and buds. Obviously, this requires training when the trees are young and pruning as the trees age. It is essential to continually produce new

fruiting wood in apples (*Malus \times domestica* Borkh.), because fruit buds produced on young wood are known to produce larger fruits than buds produced on older wood.

In apples, annual fruit bud production requires the continual management of the cropping level. An excessive crop in one year usually results in a smaller crop the next year. The application of blossom or fruitlet thinners is an essential ingredient in this management plan. In contrast to apples, peaches [*Prunus persica* (L.) Batsch.] bear fruit on one year-old wood, so the production of fruit buds is more regular and biennial bearing is not a problem. However, producing peaches of saleable size requires blossom or fruitlet thinning.

This workshop will review the current status of pome and stone fruit thinning technology.

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