

Pome Fruits—Chemical Control

Differential Mortality of Twospotted Spider Mite on Various Cultivars of Apple and Pear After Treatment with Agri-Mek

Astrid H. Andersen and Elizabeth H. Beers

Washington State University Tree Fruit Research and Extension Center, Wenatchee, WA

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Site and Method Description

The study was performed in an eight-year-old apple rootstock trial block and a mature pear orchard at the Tree Fruit Research and Extension Center in Wenatchee, Washington. The apple cultivars used were 'Smoothie' (a strain of 'Golden Delicious'), 'Redchief' (a strain of 'Red Delicious') and 'Granny Smith'. The apple cultivars were all on EMLA 7 rootstock. The pear cultivars used were 'd'Anjou' and 'Bartlett'. One or two trees of each cultivar were sprayed 26 July with Agri-Mek 0.15EC 11 g ai/acre plus 0.25% Volck Supreme oil. The trees were sprayed with a handgun sprayer at 350 psi to the point of drip. Trees of the same cultivar, rootstock and vigor were left unsprayed and used as checks.

The residues were bioassayed at 7, 14, 21, 28, 35 and 49 days after treatment. One leaf was collected from the middle part of ten shoots from each treatment on each bioassay date. A 2-cm leaf disk was cut from each leaf and floated in a jelly cup with distilled water and cotton, the bottom surface facing up. Ten adult female TSM were transferred to each leaf disk and evaluated for mortality after 72 h at 24°C. Dead and moribund mites were classed as dead, and mites that were not found on the leaf disk were not included in the analyses. Replicates with less than five mites found on the disk at time of evaluation were also excluded from the analyses. Treatment mortality data were corrected for check mortality with Abbott's formula.

Differential Efficacy on Different Cultivars

Of the apple varieties residual activity of Agri-Mek tended to be best on 'Granny Smith', intermediate on 'Redchief' and poorest on 'Smoothie'. Of the pear cultivars the residual activity was consistently higher on 'd'Anjou' than on 'Bartlett'.

The study indicates that the efficacy of Agri-Mek for mite control can vary when applied to these cultivars. The results also indicate that when studies of efficacy of Agri-Mek are interpreted, caution should be taken when using data from different cultivars.

