

Biology/Phenology

'Golden Delicious' Fruit-Stage Specific Sensitivity to *C. verbasci* Feeding Injury

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On apple, first generation *C. verbasci* nymphs feed on blossom calyxes and developing fruitlets. These nymphs insert their feeding stylets into a blossom calyx or developing fruitlet to feed on plant juices. This feeding activity results in the formation of bumps or indentations and bumps at the feeding sites. Injury caused by this feeding renders the fruit unacceptable for fresh market sale. The fruit of apple varieties sensitive to injury caused by *C. verbasci* feeding does not appear to be susceptible to this injury in the summer or fall. However, the stages of calyx and fruit development that are susceptible to *C. verbasci* feeding injury have yet to be determined. Therefore, it is possible that controls have been applied at timings when the fruit is past a susceptible stage.

The emphasis of this experiment was to identify the stages of calyx and fruit development that are susceptible to *C. verbasci* feeding injury.

Materials and Methods

This experiment was conducted in a standard 'Golden Delicious' orchard of 24- and 35-year-old trees. 'Golden Delicious' was used because it is the variety that appears to be most sensitive to injury from feeding by *C. verbasci*. Individual *C. verbasci* nymphs were confined in cylindrical (ca. 8 inches long, 2-inch diameter), nylon sleeve cages. Each cage contained one blossom or fruitlet and one actively growing leaf or one actively growing leaf alone. The experimental design was completely randomized and was conducted in three stages with four treatments per stage and 30 replications per treatment. Each experimental stage corresponded with a different stage of tree development; stage I, full bloom (20 April)-petal fall (27 April); stage II, 1/8-inch fruitlet (3 May)-1/2-inch fruitlet (10 May); stage III, 1/2-inch fruitlet (13 May)-1-inch fruitlet (20 May).

Results

The stage of calyx development most susceptible to *C. verbasci* feeding injury was full bloom to petal fall (experimental stage I). Very little damage occurred after the fruit reached 1/2-inch diameter.

'Golden Delicious' Fruit Sensitivity to Injury from Feeding by *Campylomma*

