

6. Biology/Phenology

CHARACTERIZATION OF STINK BUG DAMAGE AND DISTRIBUTION OF INJURY IN ORCHARDS

Peter McGhee, J. F. Brunner and M. D. Doerr
WSU Tree Fruit Research and Extension Center
1100 North Western Avenue, Wenatchee, WA 98801

Fruit injury: In 1997, the characterization of stink bug injury to Delicious and Gala was determined by caging *E. conspersus* and *C. ligata* adults on fruit. Five adult stink bugs of a species were caged on 2-3 apples with a wire mesh sleeve cage. Each treatment was replicated five times for each stink bug species and fruit variety. Cages were removed after seven days. Number of live and dead stink bugs was recorded. After removing sleeve cages limbs were sprayed with Carzol to protect fruit from further insect damage. Injury was characterized and photographed on each variety 14 days after caging.

All Delicious apples caged with *E. conspersus* or *C. ligata* displayed signs of injury. Small, dark depressions, ranging in diameter from 1 mm to 1 cm, were visible on the exterior of the fruit surface. Peeling the skin of the fruit revealed light to medium brown discoloration of the flesh that extended toward the center of the fruit 1-5 mm. Gala apples showed no external signs of injury two weeks after caging. Underneath the skin, injured flesh of Gala was very slightly discolored, appearing creamy white against the normally light yellow color. Gala fruit placed in cold storage did not develop any external symptoms of stink bug injury.

In 1997, three Dole orchards and one Naumes and Craft orchard were sampled to determine fruit injury by stink bugs at harvest. Fifty fruits per tree were examined on five trees in the border row and the same number of trees in two interior rows. High levels of fruit injury were detected in most orchards, and damage in the border row was consistently higher than interior rows. These data suggest that well-timed border treatments would prevent most fruit loss to stink bugs.

Location	n	Percent fruit injury		
		Border Row	1 st interior row	2 nd interior row
Craft ^a	5	31.2	12.0	1.6
Dole Northeast ^a	5	76.8	36.8	13.6
Dole Northwest ^a	5	35.6	12.0	3.6
Dole South ^a	5	17.2	3.2	0.0
Naumes ^b	5	39.2	6.8	0.8