Biology/Phenology

PEAR THRIPS (THYSANOPTERA: THRIPIDAE): AN OLD PEST REAWAKENS

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In 1996, pear thrips was identified from an organic orchard in the lower Hood River Valley. Observations by the grower suggested that the problem was not new and that large numbers of thrips had been present in the orchard around bloom time for several years. Damage typical of pear thrips was also found in a conventional orchard which had no fruit set where the infestation was heaviest. A survey of pear orchards in the Hood River valley conducted in early spring of 1997 showed pear thrips to be widely distributed in the district. Thrips populations were more concentrated along the edges of the fruit-growing area close to woodland with a mix of deciduous trees. The majority of thrips on pear in early season were identified as pear thrips and not western flower thrips. Pear thrips has only one generation and adults emerge between 'swollen bud' and 'bud burst' (stages 2 to 3). Adults begin to feed inside buds which causes them to bleed. This is typical for early injury. Feeding can also cause short-stemmed and deformed fruit. In heavy infestations (>10 thrips adults per bud) buds will dry up and fall off resulting in serious crop loss. Feeding by adults and later the immature stages causes damaged margins and cupping of leaves.

In the 1920s, the California pear industry considered pear thrips one of the major economic problems causing partial and sometimes complete crop failures in some years. The importance of pear thrips as an economic pest diminished when pear growers began to use synthetic insecticides for control of codling moth and other pests. Pear thrips is apparently still susceptible to OP and other broad-spectrum insecticides (e.g., pyrethroids). This may be the reason why this thrips has been absent from pears until changes in insecticidal use allowed it to reemerge as a pest. Pear thrips may be difficult to manage on pears under selective programs since no effective selective control tactics are presently available (

A major eruption of pear thrips occurred during the 2000 season in the Hood River Valley. Several apple, pear and cherry blocks at the Mid-Columbia Agricultural Research & Extension Center suffered heavy bud damage from pear thrips feeding shortly before bloom. Thrips populations were highest in blocks closest to the heavily wooded Hood River canyon. Maple is a dominant tree species in this wooded area and is a favorite host of pear thrips. Thrips damage was more severe on pear then on apple or cherry. Sprays of Carzol (formetanate hydrochloride) applied to infested pear blocks during bloom caused high thrips mortality. Success (spinosad; not yet registered for use on pear) applied to infested apple and cherry blocks was also effective. With the recent changes in pre- and early post bloom control programs and decreasing use of broad-spectrum pesticides pear thrips may become more of a problem, especially in orchard locations close to wooded habitat.