Low Predation in 2011 Causes Outbreaks of Insect Pests

During most years insect pest populations in New Mexico are fairly well controlled by arthropod predators. Typically 40-70% of pests are controlled by predators. This year arthropod predator numbers are extremely low, resulting in some outbreaks of insect pests that are generally well controlled. Predator populations were normal in March and April, but a lack of prey resulted in predators feeding on each other and a crash in their populations by June. The concern was that this would result in outbreaks of pests. While this has not happened in all crops there have been some outbreaks of pests that are normally sporadic. Armyworms for example have been at extremely high levels in alfalfa. Many growers also have been treating refuge cotton for beet armyworm, normally an infrequent problem in New Mexico.

Southeastern New Mexico is also experiencing severe outbreaks of aphids in pecan which are normally only a sporadic pest due to high predation. This year the number and the type of predators in pecan have been far lower than normal. Research in SE New Mexico pecan orchards indicated more than 75% fewer predators than last year and much lower rates of control. Predation in pecan orchards was 51%-96% early season and averaged 61% season-long in 2010 but is approximately 50% less this year.

Populations of some predators particularly green lacewings started to increase in mid August but will not likely be able to recover in time in most orchards to provide adequate control. The most important predator in pecan, the ghost spider, numbers are still much lower than needed for good control. In 2010 trials, 72% of predation in commercial orchards was from this one species of spider. Other major predators were ladybug adults, lady bug larvae and green lacewings, which each provided 6-7% control.

Low populations this year will affect the number of predators next spring at least initially. Farmers and homeowners could help increase early season predators next spring by maintaining some plants for refuge and food, particularly flowering plants. Alfalfa or a ground cover in, or near orchards, could provide prey and nectar that can help build or maintain populations of beneficial predators and parasitoids. This is far more effective than artificial releases of purchased beneficials. Farmers who are not restricted by irrigation scheduling can help maintain populations of beneficials farm-wide by cutting hay so that nearby fields are on different cycles of growth. Cutting hay dramatically reduces populations of beneficials who are then exposed to harsh desiccating conditions, but populations can rapidly rebound when there is some growth.
Ladybug larvae (A) and adult (B)

Green lacewing eggs (A) and adult (B)