Mites and Cherries in 2005

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Two-spotted spider mites can be a complex problem on cherry in hot, dry years. Apple and mites, on the other hand, seem to be easier to control as we can see populations develop over a longer period of time; in an apple system, we also seem to be able to better monitor predator mite populations. To add to the complexity of the mite on cherry issue, most miticides have an extended pre-harvest interval (PHI's). Therefore, if a grower intends to apply a miticide, he/she needs to make that decision in the very near future, and the current mite counts may not conclude a miticide is warranted. So, to put this problem into perspective, we can sum it up in this way: 1) we currently have minimal mite numbers in cherry and these numbers have remained steady for the past three weeks, 2) the weather forecast predicts more high temperatures with little rainfall, which is indicative of rapid increases in mite movement into the tree as well as increases in populations, 3) miticides have a long PHI, which is already too late for many sweet cherry varieties and on the edge for some tart cherry growers in more southerly areas, and to add fuel to the fire, 4) miticide sprays are expensive. So, what is a Michigan cherry farmer to do regarding mite control?

First, two-spotted spider mites can produce multiple generations per season, and the warmer the seasonal temperatures, the more generations they can produce during that season. Adult females overwinter in bark scales on the cherry tree or in leaf litter on the ground. In spring, females emerge and begin to look for food sources, which are often weeds and grasses found under the tree canopy. As temperatures warm, females move up into the tree and lay eggs in the inner tree. These eggs hatch within eight days. The offspring molts three times, and the entire life cycle may be completed in three weeks. If temperatures are warm, mites can undergo 5-7 generations per season. Droughty conditions cause mites to migrate up into the trees faster than under wet conditions. Once populations establish in a tree, mite numbers can increase dramatically and cause serious damage, especially in hot years.

There has been no research on mite thresholds in cherry, but observational evidence suggests that a threshold of 20 mites/leaf in a normal year is acceptable. However, under droughty conditions, this threshold decreases to ~10 mites/leaf. To determine a mite threshold, inspect the older, inside spur leaves for mites, as the females move to those locations first. If the mite numbers are above 10/leaf, a miticide should be considered, unless predator populations in the orchard are high. High numbers of predators are often associated with lots of weeds and grasses under the trees; orchards with regular herbicide applications are less likely to have high predator populations.

The three labeled miticides are Apollo (21-day PHI), Savey (28-day PHI), and Vendex (14-day PHI). Close attention should be paid to the pre-harvest intervals before application.