leaves; do not use the percentage method discussed earlier.

Decision Threshold Level

Before July 1, the recommended decision threshold level is 7 mites per leaf (about 85 percent of leaves are infested). After July 1, the recommended threshold is 10 mites per leaf (about 90 percent of leaves are infested). When populations reach these levels, decide whether or not predators are present in sufficient numbers to control the mites.

When European red mite and twospotted spider mite populations range from 7 to 10 mites per leaf, a *S. punctum* population of 15 to 25 adults plus larvae per 3-minute search is needed to prevent mites from building to damaging levels. In most situations, both adults *and* larvae must be present to reduce mite populations sufficiently.

For *A. fallacis*, a predator-to-prey ratio of 1 to 5 will almost certainly provide acceptable control. If there are more than 5 but less than 15 pests for every predator, biological control is still possible. If there are more than 15 pests for every predator, *A. fallacis* is unlikely to control pest mites.

If neither predator population is present in sufficient numbers, a miticide should be applied in the next spray. Regardless of whether or not a miticide is applied, check trees again one week after the first sampling to determine the status of mite and predator populations. Also, consider weather forecasts when making decisions. Cool temperatures and rainfall can suppress mite populations.

Injury Threshold Level

A decision threshold level is not the same as an injury threshold level. Healthy, properly thinned trees can sustain considerably more than 10 mites per leaf. In most situations, trees can tolerate up to 30 mites per leaf without any observable effects on fruit yield or quality. The threshold range from 7 to 10 mites per leaf is used because, in the absence of biological control, it is often difficult to prevent mite infestations from exceeding 30 or more per leaf when miticide applications are delayed. In North Carolina, mite populations are most likely to exceed threshold levels between mid-June and mid-July. For this reason, and the fact that late-season mite injury is not as damaging as early or mid-season injury, miticide applications are not recommended after early August.

The mite sampling procedures and decision guidelines outlined in this publication may at first seem rather complex and time consuming. However, with a little experience the process can become routine. When mite populations are below threshold levels, sampling should take 30 to 45 minutes. When the populations approach decision threshold levels and predators must be counted, sampling takes slightly longer. However, considering the potential savings from biological control, mite sampling is clearly a cost-effective program.