Mites (Two Types) Found in Strawberries

While visiting some strawberry fields over the last few weeks, I ran into a few areas that had **two spotted spider mite** (TSSM) feeding. These were mostly in fields that had been using row cover. Spider mites *Tetranychus urticae* are well adapted to high-temperatures and can complete their life cycle in as little as 7 days when temperatures are > 80º F. The temperatures under row covers in the early part of our season were much above normal and rainfall was below normal leaving conditions hot and dry, which permitted spider mites (if present) to develop quickly. Warm dry conditions along with the nitrogen content of leaves greatly influence TSSM reproduction rate. Applying excessive nitrogen favors spider mite outbreaks.

The two spotted spider mite overwinters in the soil as mated adult females, which are an orange-red color (with two dark spots) (Fig. 1) rather than the typical mid-summer color of pale green or light yellow. When they emerge from the soil in the spring, they begin to feed and lay eggs.

Possible thresholds for TSSM are when 25 percent of leaves are infested or when there are 10 to 20 mites per leaflet. None of the fields I was in needed any treatments. The wet weather and cooler temperatures we have had should greatly reduce the threat of TSSM. However, if warranted, there are many excellent miticides available for two spotted spider mite control in strawberry that are found in The Mid-Atlantic Vegetable Production Recommendations Guide.

The second mite species I found surprised me a bit as I have only seen it in strawberry one other time and that was a number of years ago. This was the **Cyclamen mite** *Steneotarsonemus pallidus*, which is extremely hard to see, even with magnification. The leaves I looked at in a couple of matted-row strawberry fields I thought were just cold damaged (most were), but looking at the undersides of some the leaves showed sand grain-like particles and some stippling marks. Upon inspection with a 20X hand lens and later with a dissecting scope I found cyclamen mites. These mites are microscopic, semi-transparent, oval and white to yellowish-brown. Eggs are oval, translucent and large, about half the size of an adult. Adults overwinter in the crowns of strawberry plants and females lay eggs along the midribs of the unfolding strawberry leaves.

![Fig. 1 Overwintered female TSSM](image1)

![Fig. 2 Heavy cyclamen mite feeding on left and lighter feeding on right](image2)
In general, infested plants show weak growth and yellow, crinkled leaves. Younger leaves will not reach their normal size and are often crinkled and at times hairier than normal. As with two spotted spider mite feeding there are often white stippling marks on the older leaves with the older growth becoming distorted, curled and off-color (Fig. 2). If feeding damage is heavy enough flower buds can drop. Fruit that develops from infested buds are small and dry. Whole plants may have a bronze cast, which occurs due to fluids injected by the mites (Fig. 3).

I do not think the cyclamen mites pose any real problem for our strawberry fields, possibly for a few plants, but not a field. Because the mites are so small and located down in the crown they are extremely difficult to control even when chemicals can get to them. My guess is we have these mites in many of our matted-row strawberry fields and at times in our plasticulture fields every year, but no one has looked for them or seen much tell-tale damage from them. I only mention it now because it was a bit of a surprise to find them and it is something growers should be aware of potentially being in their field.

Mites, especially the TSSM and at times broad mites which are tarsenemid mites like cyclamen mites, seem to becoming a more consistent problem in many of our vegetable crops over the last 10 years or so. Not sure of the reason, just have noticed them occurring more regularly than before and something we all need to keep an eye on.