Spider Mites

Spider mites have been variable across the area. Blayne Reed, IPM Extension agent for Hale and Swisher Counties, has been reporting in his newsletters of finding small mite colonies in corn (Plains Pest Management, http://hale.agrilife.org/newsletters/IPM/). In Bailey and Parmer Counties, Monti Vandiver, IPM Extension agent, stated that mite infestations have been declining (http://bailey.agrilife.org/newsletters/integrated-pest-management/).

But, last week I received a call from a producer in Moore County about having high numbers of mites causing heavy damage to 1 to 2 foot tall corn along the Southwest side of the field. I used this field to collect mite infested leaves to infest plots in a trial at the North Plains Research Field at Etter. And while looking for fields to collect mite infested leaves, John Quillin, crop advisor, took my summer crew and I to a few fields around the Spurlock area in Moore County. A couple fields still had moderate levels of mites but in other fields mites had declined.

The rains may have helped reduce the mite numbers, but in most of the fields the common denominator is that predators have been abundant. The predominate predator has been thrips migrating from wheat. In last weeks issue of this newsletter (Volume 5, Issue 3), I covered thrips and the potential for damaging cotton. But at the same time, the high numbers of thrips were actively feeding on spider mite colonies. In some instances, I believe the thrips have prevented mite infestations from becoming established and in other fields they have completely controlled the mites in early whorl stage corn. It is not uncommon to see several adult and immature thrips on a leaf.

Another predator that has shown up in fields is the Stethorus beetle (aka the spider mite destroyer beetle). This beetle is an excellent predator against spider mites, but we typically see the beetle later in the growing season. Three species of Stethorus have been documented in the Texas High Plains by Pollock and Michels. These species are Stethorus nigrapes Kapur, Stethorus histrio Chazeau, and Stethorus caseyi Gordon and Chapman. In general, Stethorus adults and larvae feed on egg, larvae, nymphs and adult life stages of spider mites. Each adult beetle may feed on 30 - 60 mites per day. For most species the developmental time from egg to becoming an adult is approximately 17 days. During this time period a single larva may prey on several hundred mites.

These and other predators (six-spotted thrips, predatory mites, and minute pirate bugs) are important control agents for managing spider mites in corn. When possible try to conserve these predators by avoiding the use of insecticide products which are known to be detrimental to predators.
Fortunately, the majority of our miticides are not harmful to these predators. The abundance of predators in corn in the early whorl stages may be effective enough to contain spider mites without the need of a miticide application. Of course, mite infestations may need to be controlled with a miticide if damage to corn is extensive. So, when making decisions for early whorl infestations of spider mites take into consideration the predator abundance. Because, even though the miticides are relatively harmless on the predators, once mite infestations are controlled the predators will starve for lack of food. Then later in the season, after tassel, predators may not build back in time to help, in conjunction with miticides to prevent damage mite infestations during the grain developmental growth stages.

I am very cognizant of the problems of trying to control spider mites, because the available miticides do not provide quick knockdown activity coupled with long residual control. And, none of the miticides have systemic movement within the plant and will only protect the leaves that have been sprayed. These are some reasons why I believe we should do everything possible to conserve the natural predators.

From the miticide efficacy studies by Monti Vandiver, Dr. Pat Porter, and myself, the data shows that miticides registered after 2000 (including Comite II®) can be used effectively to control mite infestations. I do not believe the data shows that any one product is superior to another product or that any product is less effective than another. With some of the products most recently registered for mite control we have limited data to know how and when to best use the products for mite control. What we do know is that all of the products may not provide effective control after mite infestations become heavy and causing damage at and above the ear leaf. With any of the products, reducing the application rate may not provide the desired level of mite control.

Fall Armyworm

Fall armyworm (FAW) have occasionally been observed feeding in the whorl of non-Bt corn plants. Insecticide applications are rarely recommended because there data is inconclusive about yield loss from whorl damage and a limited number of insecticide trials have not proven insecticides to be effective in controlling larvae in the whorl. The difficulty is getting enough of the spray into the whorl where the larvae are feeding. However, newer insecticides (Prevathon and Belt) has shown suppression of FAW larvae in a limited number of trials. Control may be improved by chemigating an insecticide that is labeled for both FAW and use through an irrigation system where nozzles are above the whorl.

Bt corn hybrids pyramided with toxins for lepidopteran pests should have minimal feeding damage. Herculex corn, which has only one toxin targeting whorl feeding larvae, may sustain relatively more damage than the pyramid corn hybrids but should still provide adequate protection. But, if there is significant whorl damage in Herculex planted corn, please call me at (806) 677-5600 or Dr. Pat Porter at (806) 746-6101. We want to keep an eye out for possible problems because in Florida and the Mid-South there are FAW with resistance to the Cry1F toxin in Herculex. We do not have any evidence of resistant FAW in Texas but if there is a problem we want to be able to know about it.