Spider Mites in Corn

Outbreaks of spider mites (Banks grass mite (BGM) *Oligonychus pratensis* and two-spotted spider mite (TSSM) *Tetranychus urticae* Koch) can be common in hot, dry and drought stressed corn. Spider mite populations can flare when pesticides that are applied for other corn pests remove natural enemies that would normally keep spider mites under control.

Spider mites feed on the undersides of leaves and usually produce a fine network of silken webs that can be easily seen under low magnification. Damage to corn plants occurs as spider mites pierce plant cells with their mouthparts and suck the plant juices and results in leaf discoloration characterized by yellow or whitish spotting across the undersurface of the corn leaf (Figure 1). Spider mite feeding can eventually kill the corn leaf leaving it with a scorched or burned appearance (Figure 2) and severe outbreaks can cause significant silage and grain losses.1

Both species overwinter as orange-yellow females and lay pearly white, spherical eggs which hatch into 6-legged light to dark green larva. The next life stage is an 8-legged pale-bright green protonymph, followed by 8-legged deutonymph stage, and finishes by molting to the adult stage. Adult males are dark green, with a pointed abdomen and adult females are larger with a more rounded abdomen (Figure 3). Generation times depend on temperature and are typically 10 to 20 days.1 Under ideal conditions, spider mite populations can increase 70-fold in one generation.

Banks grass mites typically overwinter on grass species. Problems occur in the drier corn-growing areas adjacent to other grasses, such as wheat, that start to dry down. Corn becomes infested when Bank grass mites walk short distances or balloon (secreting a silk thread so that the wind will carry them) to the corn. Generally, infestations start on the undersides of lower leaves along field edges and gradually move into the upper part of the plant and deeper into the field. Banks grass mite is commonly found in corn from the mid-whorl through the grain filling growth stages, while two spotted spider mites are rare on corn before flowering.

In comparison, TSSM infestations usually occur more sporadically throughout the field, in humid areas like river bottoms and often in corn near alfalfa. TSSM colonies tend to produce more webbing than Banks grass mites. Banks grass mite colonies often begin earlier in the season and remain longer on the lower leaves before moving up the plant. TSSM usually appear later in the season and colonies can be found anywhere on the plant.

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Spider mites are usually held in check by various natural enemies such as, predatory mites, lady beetles, minute pirate bugs, lacewing larvae, and thrips. The most important of these are a predatory mite called *Amblyseius fallacies* (Garman), a minute pirate bug called *Orius insidiosus* (Say), a small black lady beetle in the genus *Stethorus*. Mites are also subject to fungal disease. However, when it is necessary to control other insect problems such as adult corn rootworm beetles, insecticidal applications can cause outbreaks of spider mites, particularly when hot dry conditions coincide with insecticide treatments. If an insecticide application is necessary, monitor the treated crop for mite activity or consider including a miticide in the application if spider mite colonies are already present along field margins or in the field.

**Management**

Proper irrigation to help avoid drought stress is the key cultural practice to avoid mite outbreaks.

A preventative pre-tassel miticide treatment may be beneficial if:

- a field has a steady history of spider mite problems,
- temperatures are expected to top 95 degrees,
- drought stress is high,
- field has received previous insecticide applications, and
- mites are being detected on a majority of the plants early in the growing season.

Otherwise, careful scouting should be performed to determine if economic thresholds have been reached. Colorado State University recommends to treat if damage is visible in the lower third of the plant and mite colonies are detectable in middle third. Table 1 lists some, but not all, available miticides. Always read and follow pesticide label directions. Miticide registration may vary by state.

Spider mites can be resistant to one or more miticides. A growers best option is to consult with extension entomologists and/or crop consultants to determine if resistance has developed to any of the common used miticides before making a decision on which product to use. To evaluate efficacy of a pesticide for control of spider mites, a field survey should be conducted before the pesticide is applied. Using a 10X hand lens or magnifying glass, closely examine 25 infested leaves and mark them so that the same leaves can be reexamined after treatment. Reexamine the same 25 leaves to determine if live mites are present. (NOTE: always observe the field reentry interval listed on the pesticide label.) If the treatment was effective, there should be no adult mites present. However, eggs present during treatment may not have been killed (most miticides do not kill the eggs) and may have begun to hatch, resulting in the presence of young mites. In some cases, retreatment may be necessary before immature mites can become adults and begin laying eggs. However, once corn plants have reached the hard-dough stage there is no benefit from treatment.  

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Names</th>
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<tbody>
<tr>
<td>bifenthrin</td>
<td>Brigade® 2EC, Discipline® 2EC, Fanfare® 2EC, Sniper®, Tundra® 2EC</td>
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<tr>
<td>propargite</td>
<td>Comite®, Comite® II</td>
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<td>dimethoate</td>
<td>Dimethoate</td>
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<td>zeta-cypermethrin</td>
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<td>spiromesifen</td>
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<td>hexythiazox</td>
<td>Onager®</td>
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<td>chlorpyrifos and</td>
<td>Tundra® Supreme</td>
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<td>etoxazole</td>
<td>Zeal®</td>
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Source: University of Nebraska. February 1, 2013.

For additional agronomic information, please contact your Asgrow®, DEKALB® and Deltapine® Brands Seed Representative.

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**Table 1. Some available miticide products.**

**Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.**

*Sources:*


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