

AGRONOMIC ALERT



Spider Mites in Corn

Spider mites can cause serious damage to corn. Hot, dry weather favors mite reproduction and survival. Many factors must be evaluated to determine the need for a miticide application including all of the following: the current and the anticipated mite population, the history of the mite population in a given field, the forecasted weather patterns, the potential for a mite population increase along with maturity of the corn crop.

Biology

Two common mite species are twospotted spider mite (TSM), *Tetranychus urticae* and Banks grass mite (BGM), *Oligonychus pratensis* (Figure 1). Adult mites are very small, approximately



Figure 1. Twospotted spider mite adult, Frank Peairs, Colorado State University, Bugwood.org (upper photo), Banks grass mite adult, F.C. Schweissing, Bugwood.org (lower photo).

0.06 inches in length. They are greenish to pink or cream colored and have black spots on their body. The four stages of development for spider mites are: (1) egg-spherical, somewhat translucent; (2) larval stage- six translucent legs; (3) nymph stage- eight legs; and (4) adult- eight legs, very small, approximately 0.06 inches in length. Spider mites move very



Figure 2. Severe damage to corn plants due to an infestation of spider mites. Howard F. Schwartz, Colorado State University, Bugwood.org

quickly in their colony area in warm weather. In hot summer weather, a generation may pass in 5 to 7 days; however, under cooler conditions a generation may take a month. Populations may increase substantially with only one generation. BGM usually appears earlier in the season on the lower leaves of the corn plant. BGM is typically more easily controlled than TSM. TSM usually appears later in the season, typically closer to tasseling and may feed over the entire plant.

Damage

Spider mites pierce plant cells and remove juices from the corn leaves. Infested leaves often appear yellow, brown or look like they are burnt on the upper surface. Mite damage can be verified by checking the underside of leaves for mites, eggs and webbing. All stages of the mites may be present at the same time. With severe damage, dry leaves fall off, stalks break and kernels shrink. Potential yield can be significantly impacted. Silage quality and yield can also be greatly reduced with mite feeding.

Thresholds

Scout corn for mites from mid June until corn reaches full dent. Early scouting should include checking the underside of leaves

▶ from previous page

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on the edges of fields, especially fields that are close to roads, ditches and grass ways. A pre-tassel treatment of a selective miticide such as Comite® may be justified if the field has a history of mite problems, the weather is hot and dry and /or corn borer pressure indicates that a broad spectrum insecticide will be applied. A broad spectrum insecticide may cause a rapid increase in mite populations due to reduced populations of beneficial predators. Application of miticides should be based on the current and projected mite population, not just on current damage ratings. If mites are not found before tasseling and corn borer treatments are not anticipated, preventive miticide treatments are generally not recommended. As tasseling approaches, spend more time scouting for mites. The ear leaf and the leaves above the ear leaf should be kept as free from mites as possible. Corn appears to be the most susceptible to yield damage from tasseling to soft dough. Identify which type of mites are present. TSMs are more difficult to control than BGMs.

Management Options for Spider Mites

Several insecticides are available for spider mite management (Table 1). Effective mite control requires good spray coverage. Increasing the gallonage per acre is the easiest way to increase coverage. In areas where mite problems occur year after year, resistance management should be part of the control program. Mites are known for their ability to develop resistance. Rotate between miticides to help avoid the potential for resistance. If possible, keep corn well-watered. Manage corn borer insecticides to help minimize their impact on beneficial spider mite predators.

Table 1. Select Insecticides Labeled for Application on Corn for Spider Mites

Insecticide	Rate (per acre)
Onager® (Use is limited in Kansas to West of Rt. 281)	10 to 24 oz.
Comite® II*	2.25 pints
Oberon® 4 SC	2.85 to 8 oz.
Hero™*	10.3 oz.
Bifenthrin (several products)*	Check use rate for specific product
The following products are listed because they are still useful for mite management in some areas of the state or when used in tank mixes; however, in many areas of southwest Kansas they may, at best, give only temporary suppression of mite populations. Repeat applications are not recommended if the first failed to give reasonable control.	
Dimethoate or Dimate	Check use rate for specific product
*Restricted Use Insecticides	

Sources:

Whitworth, J. et. al. 2010. *Corn Insect Management 2010*. Kansas State University, MF-810.

Wright, R. et. Al. 2006. *Spider Mite Management in Corn and Soybeans*. University of Nebraska, G1167.

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.

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