

# Scouting and Managing Spider Mite in Soybean

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**Picture credits:**  
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Spider mites are one of the more difficult-to-manage soybean pests. Judging the need to treat an infested field can be difficult. A descriptive rating system is included in this bulletin (pages 2-3) to help you make a treatment decision.

Mite infestations are favored by hot, dry weather conditions. Mites move into fields from the edge, often by passive airborne movement. Mites feed with a piercing mouthpart, inserting it directly into plant cells and sucking out the contents. This type of feeding not only injures or kills plant cells, but results in water loss through the feeding wounds. Mite feeding results in behind tiny yellow dots or stippling on the leaves. Damage may be noticed first near an obstacle, such as a tree-line or power pole, that disrupts wind movement near the edge of the field (Level 2). As mite numbers and feeding increase, the yellowing becomes more apparent across the leaf surface (Level 3). Cells are disrupted, water is lost, and plant tissue begins to die. Under severe infestation, leaves turn brown and eventually drop off the plant (Level 4).

Mites are best seen with a hand lens, especially by shaking plant foliage over a white piece of paper. A heavy mite infestation, however, is fairly obvious to the naked eye, with leaf speckling and yellowing, obvious numbers of mites on the undersides of leaves, plus webbing. Treatment options include the organophosphate insecticides chlorpyrifos (for example Lorsban, Cobalt) or the pyrethroid bifenthrin (for example Brigade, Capture, Hero), or both an OP and bifenthrin.



*Two-spotted spider mites as seen by the naked eye (left) and close-up (below).  
a. egg; b. juvenile; c. adult*



If you do plan to treat, check fields before you spray to make sure mites are still present, as populations can crash quickly. Rain itself reduces plant stress and replaces water lost to mite feeding. But more importantly high humidity is critical for promoting the growth of fungi that naturally infest and kill mites. Humidity must be elevated for an extended time, 48 hours or more, before naturally occurring fungi are active. Mite populations can crash in a matter of days once fungal pathogens become active.

# Rating Soybean Fields for Mite Infestations and Spray Applications

Color codes for example field maps:



No symptoms



Leaf stippling



Severe yellowing

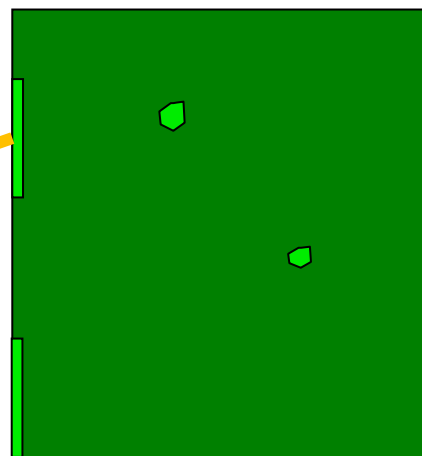


Severe browning;  
leaf drop

**Level 1:** Plants green; mites barely detected.  
**Background population level. Not of concern.**

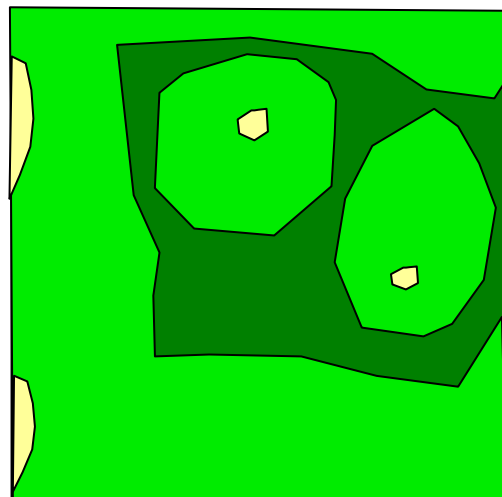
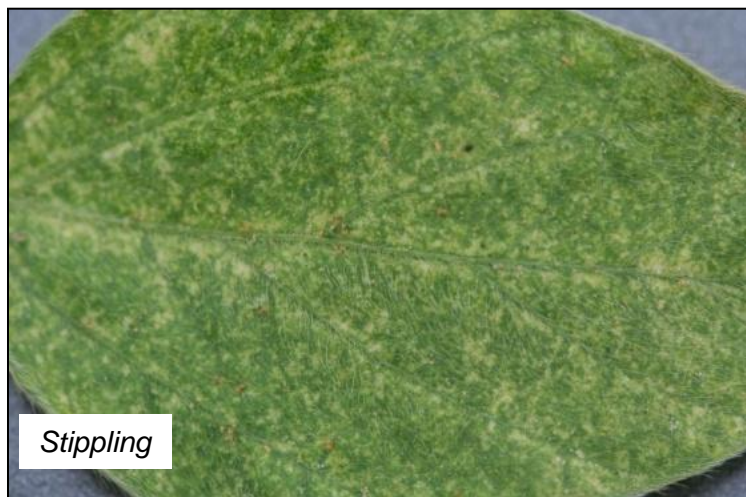
**Level 2:** Mites easily found, but only on edges or in dry areas.  
First sign of stippling.

**Watch population,  
but do not treat.**



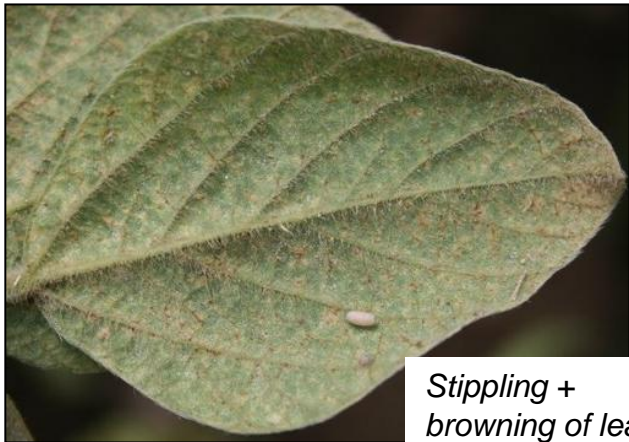
**Level 3:** All plants infested to some degree. Stippling on all leaves.  
Lower leaves yellow, speckled. Severe damage on edges, dry areas.

**Rescue treatment is warranted,  
especially if population is still actively growing.**

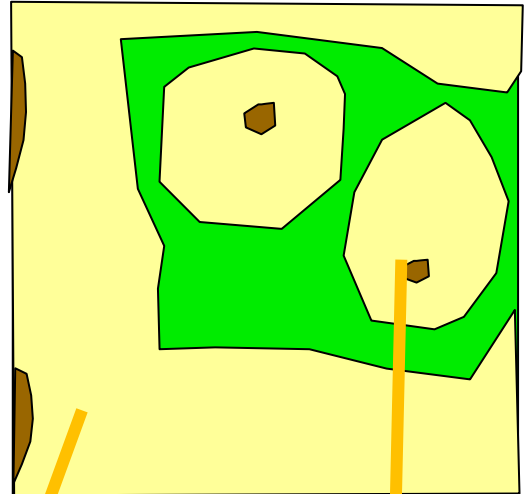


**Level 4:** Heavy infestation. Leaves yellow or brown, wilted, dropping.  
Severe damage.

***Yield already lost, but a rescue treatment will save field.***



*Stippling +  
browning of leaves*



*Severe yellowing (left) and leaf drop (right).*



Unfortunately, after treatment spider mite populations can resurge quickly due to:

- ***Egg hatch:*** Mites lay eggs on the plant surface. Insecticides kill adults and nymphs, but do not kill eggs. Since OPs have a short residual, newly hatched nymphs can survive and repopulate the plants. Using a combination OP/bifenthrin product, or following an OP with bifenthrin, can improve control.

- ***Rebound or flaring:*** Insecticides kill beneficial insects, but don't kill 100% of the mites. The mites reproduce in the absence of predators, potentially leading to a rapid increase, or flaring, of the population. This is why it is important to scout and spray only when mites at threshold, avoiding insurance applications of insecticide for mites as well as soybean aphid.

- \* ***Resistance:*** Spider mites can become resistant to insecticides. The chance of resistance increases with the number of applications. This is another reason we recommend scouting and spraying only when mites have reached a threshold.

***Bottom line – spider mites are a tough pest to control.***