



# Pest e-alerts



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## **Brown Wheat Mite Showing Up in Winter Wheat**

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The continued dry conditions experienced by much of Oklahoma's winter wheat crop have stimulated the increase of a couple of pests, including greenbugs and brown wheat mites. Justin Barr reported brown wheat mite infestations in Ellis County. Greenbugs are being reported in much of western Oklahoma. Both pests can cause problems when wheat is already being stressed by dry conditions.

While greenbugs can damage wheat under normal growing conditions, brown wheat mites do not typically cause excessive injury unless present in extreme numbers and soil moisture conditions will not sustain rapid growth of wheat foliage. I would like to discuss brown wheat mite in more detail.

**Description:** This mite is small (about the size of this period.) with a metallic brown to black body and 4 pairs of yellowish legs. The forelegs are distinctly longer than the other three pair. Brown wheat mite eggs come in two forms. One form is a spherical, bright red egg that is usually deposited on soil particles near a host plant. This is the so-called "non-diapause" egg that hatches within a week of being laid. The second type of egg is the "diapause" egg that is white with a ruffled cap that bears 20 to 30 distinct ridges. It is typically deposited at the base of a wheat plant and will not hatch until the following fall.



**Life Cycle:** Brown wheat mites can complete a life cycle in as little as 10-14 days. Like greenbugs, newly hatched brown wheat mites are all females. They will produce up to 3 generations each year, but have probably already completed at least one by now. Numbers will likely decline if a hard, driving rain occurs. Spring populations begin to decline in mid-late April when females begin to lay “diapause” eggs.

**Nature of Damage:** Brown wheat mite causes problems in wheat that is already stressed due to lack of moisture. They feed by piercing plant cells in the leaf, which results in “stippling”. As injury continues the plants become yellow, then dry out and die. Brown wheat mites feed during the day, and the best time to scout for them is in mid-afternoon. They do not produce webbing and will quickly drop to the soil when disturbed. They are very susceptible to hard, driving rains, but until then they can cause yield loss when present in large numbers



**Control:** The treatment threshold for greenbugs can be estimated by accessing the Greenbug Expert System on the Ag Weather website <http://agweather.mesonet.org/> or the Department of Entomology website at <http://entopl.okstate.edu/>. On the Mesonet site, click on the “Crop” tab, then select “Wheat” then the “OSU/USDA Greenbug Advisor”. On the Entomology/Plant Pathology Website, click on “Agricultural Models”, then “Cereal Aphids Pest Management”, and you will find yourself in the Greenbug Expert System. By following some simple instructions, you can use the Economic Threshold Calculator to determine your treatment threshold for greenbugs. Once you determine the threshold, print off a scouting form to record your sampling results and make a treatment decision. Based on this model, the treatment thresholds for greenbugs in March should probably fall around 2-3 greenbugs per stem (tiller).

Research suggests that a treatment threshold of 25-50 brown wheat mites per leaf in wheat that is 6-9 inches tall is economically warranted. An alternative estimation is “several hundred” per foot of row.

Check CR-7194, Management of Insect and Mite Pests in Small Grains for registered insecticides, application rates, and grazing/harvest waiting periods. It can be obtained from any County Extension Office, or found at the OSU Extra Website at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2601/CR-7194web2008.pdf>.

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