



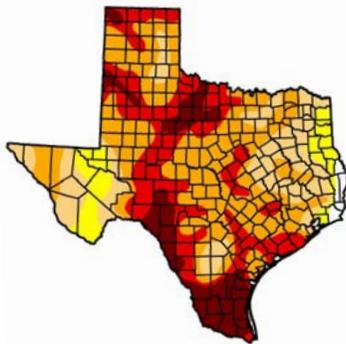
# Northwest Plains Pest Management News

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Bailey and Parmer Counties

April 19, 2013

Area weather conditions have been horrendous; extreme to exceptional drought, high winds and periods of very cold temperatures continue to wreck havoc on the agriculture industry.



**Intensity:**  
■ Abnormally Dry  
■ Moderate  
■ Severe  
■ Extreme  
■ Exceptional

Several very cold spells have added insult to injury in area wheat fields. Low temperatures reached potentially damaging levels on several occasions in the last 3 weeks. Assessments of wheat have shown a great deal of variability in damage potential ranging from little to severe. Both stem, head, and growing point damage as well as leaf burn has been observed. Estimates of potential yield loss are very difficult to make at this point, some time to see how the crop will respond will certainly help to get a better estimate.

Potential Weekly Water Use*	
Crop	Inches per week
Wheat (stem elong)	2.2
Wheat (flag)	2.4

\*Weekly estimated crop water demands (inches of water per week) during the week ending 04/17/2013 based on PET data from Lubbock.



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## Low temperatures recorded by local weather stations

Date	Clovis	Friona	Muleshoe	MWLR
3/25	13	17	15	16
4/10	16	missing	21	23
4/19	n/a	19	20	n/a

Inspection of growing points and stems are necessary to evaluate potential injury. The growing points can be located by splitting stems longitudinally with a sharp blade. A normal, uninjured growing point is bright white to yellow-green and turgid; freeze injury causes it to become white or brown and water soaked in appearance. This injury can occur even in plants that appear otherwise normal because the growing point is more sensitive to cold than are other plant parts. Growth of stems in which the growing points are injured stops immediately. A chlorotic or dead leaf may appear in the whorl, indicating that the growing point is dead. Growth from later uninjured tillers may obscure damage. Partial injury at this stage may cause a mixture Figure 5. A healthy growing point has a crisp, whitish-green appearance. A growing point that has been damaged loses its turgidity and greenish color within several days after a freeze. A hand lens will help detect subtle freeze damage symptoms. A yellow or necrotic leaf emerging from the whorl indicates the growing point is damaged.

Injury to the lower stems in the form of discoloration, roughness, lesions, splitting, collapse of internodes, and enlargement of nodes frequently occurs at the jointing stage and the following stages after freezing. Injured plants often break over at the affected areas of the lower stem so that one or two internodes are parallel to the soil surface.

Stem injury does not appear to seriously interfere with ability of wheat plants to take up nutrients from the soil



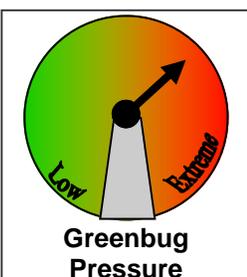
IPM radio show on Fox Talk  
950 AM Wednesdays from  
12:30-2:00

and translocate them to the developing grain. Injured areas might become infected by microorganisms which can cause further stem deterioration. Severe stem injury can affect plant-water relations during the late season. Affected plants can suddenly dry down as evaporative demand exceeds the capacity of the stem to uptake water. Lodging (falling over) of plants is the most serious problem following stem injury. Wind or hard rain can easily lodge the plants, decreasing grain yields and slowing harvest. With severe stem injury, splitting of stems and collapse of internodes is common.

Freezing Temperature Injury Thresholds in Wheat		
Growth Stage	Temp (2 hours)	Yield Effect
Jointing	24°F	Moderate to severe
Boot	28°F	Moderate to severe

**Greenbugs** continue to persist in many wheat and other small grain fields. The threshold for greenbugs in wheat at this time of the growing season considering a grain value of \$6.50 and a control cost of \$12/acre is an average 3 greenbugs/tiller. Greenbugs suck plant juices and inject toxins into plants. These aphids are pale green, approximately 1/16 inch long, with a dark green stripe on the back.

**Greenbug resistance** to registered insecticides can cause problems for small grain producers and could be carried over to greenbug management issues in sorghum. A few fields where control problems were observed have been tested using a method developed by Ed Bynum (E. D. Bynum, JR. and T. L. Archer, 2000. Identifying Insecticide-Resistant Greenbugs (Homoptera: Aphididae) with Diagnostic Assay Tests, J. Econ. Entomol. 93 (4):1286-1292 (2000)). This testing confirmed chlorpyrifos resistant greenbugs in isolated spots.



Surveys in 1990 in High Plains sorghum found insecticide-resistant greenbugs in most counties north of Amarillo. Resistant greenbugs will continue to develop and reproduce after an insecticide treatment; their reproductive potential is

extremely high. Every effort should be made to apply insecticide only to fields where economic thresholds have been exceeded to reduce the rate of selection for insecticide-resistant greenbugs and reduced rates should not be used.

**English grain aphids and bird cherry-oat aphids** have also been observed in area small grains. Populations have ranged from low to relatively high. English grain aphids are usually green with black legs, cornicles and antennae and can be easily confused with greenbugs with out magnification. Bird cherry-oat aphids are yellowish green to dark green to black with a reddish-orange area around the base of the cornicles. Both of these species suck plant juices while feeding but do not inject a toxin like greenbugs do. Chemical control of these aphids is rarely justified as they seldom cause yield loss but each field should be closely monitored. The aphids are normally controlled by many of the same predators and parasites that help control the greenbug.

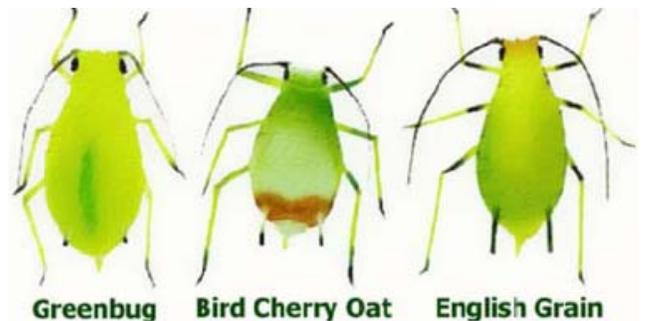


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