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Blacklands IPM Update

GENERAL:

Wheat in the area has progressed nicely over the last two weeks and just about every field in the scouting program is at or past the jointing stage, with some fields having two nodes visible. Corn planting made good progress over the last 14 days with minimal rainfall, and I would say over 90 percent of the areas corn crop has been planted. Wheat pest activity has increased over the last 10 to 14 days with aphids needing to be treated, powdery mildew showing up in area fields, winter grain mites showing back up, and stripe rust present in some fields close to the Hill County and McLennan County border.

INSECTS:

Over the last two weeks insect and mite pest activity has picked up. Currently I am finding aphids in over 90% of the fields in the scouting program with some fields needing to be treated, but there are still a handful of fields with very low aphids' numbers. Most of the aphids I am finding are bird cherry oat aphids, but I have also come across some greenbugs and English grain aphids. Bird cherry oat aphids range in color from a light green to almost black, with an area of reddish orange around the base of their cornicles (**Figure 1A**). The bird cherry oat aphid is known to transmit the barley yellow dwarf virus which is also being found in some area fields. Greenbugs have a light green body with a darker green streak in the middle of their back (**Figure 1B**). The greenbug injects a toxin into the plant while feed that will eventually kill the leaf and is also a known vector for wheat viruses like barley yellow dwarf. English grain aphids range in color from a yellowish green to light green to even brown, and have long antennae, legs and cornicles which are black (**Figure 1C**). They do not inject a toxin into the plant, but can be vectors for the barley yellow dwarf virus.

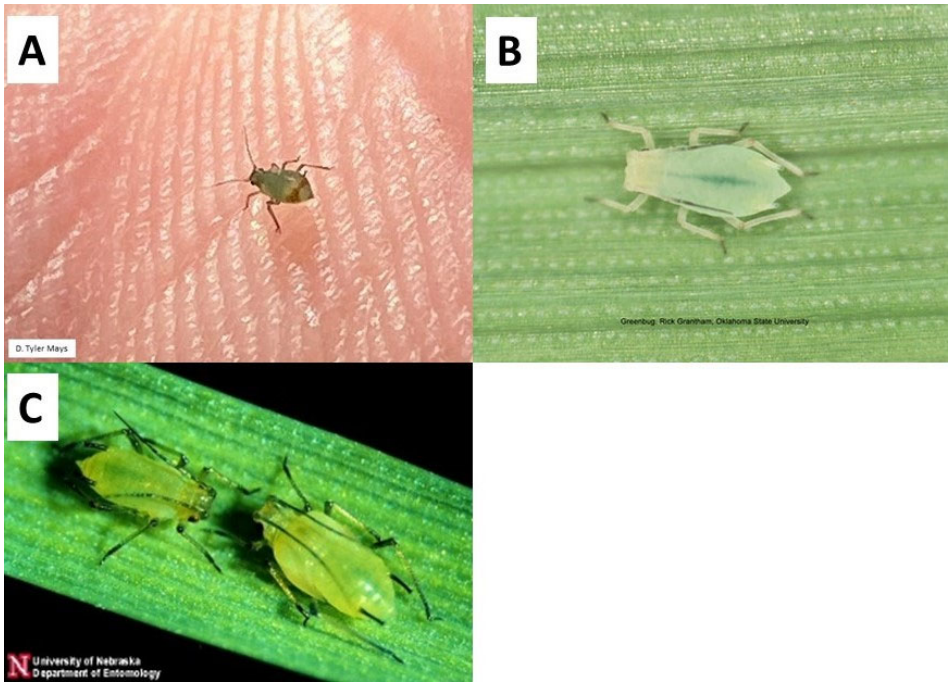

Figure 1. Aphids currently being found in wheat in Central Texas. A) bird cherry oat aphid, B) greebug, C) English grain aphid. Photo credits: B– Rick Grantham, Oklahoma State University,; C– University of Nebraska-Lincoln Department of Entomology

Each aphid species can have a detrimental impact on yields and should be treated at their respective economic thresholds. The greenbug threshold is based on plant height and the number of aphids per linear foot (**Table 1**), while the economic threshold for bird cherry oat aphids and the English grain aphid is based on the crop's growth stage and the number of aphids per tiller (**Table 2**). Beneficial insects have helped keep aphid numbers down since we defrosted from the artic blast last month, but there have been some fields where the beneficials are no longer keeping up the aphid population growth and these fields were treated. When deciding to treat for aphis we need to consider the aphid populations, the beneficial insect population, and if the beneficial insect population is keeping up with the aphid reproduction. If beneficials insects are abundant and there are parasitized aphids present, the field(s) should be rechecked in 3 to 5 days before deciding to spray.

Table 1. Economic threshold for greenbugs in Texas small grains

Plant Height	Number greenbugs per linear foot
3-6 inches	100-300
4-8 inches	200-400
6-16 inches	300-800

Table 2. Number of aphids per tiller that justifies treatment for bird cherry oat aphids and English grain aphids

Growth Stage	Bird Chery Oat Aphid	English Grain Aphid
Seedling & Pre-boot	20	30
Boot to heading	30	50
Flowering	5+	5
Milk to Medium Dough	10+	10+
Modified from: Identifying and treating aphids in wheat. 11 May 2007. cropwatch.unl.edu/identifying-and-treating-aphids-wheat		

Winter grain mite are once again being found in area wheat fields, and Mark Nemec has indicated that he is also finding them in Southwest and western McLennan Counties. The winter grain mite varies in color from dark brown to black, with a cream to white spot on their back. The legs and head of the winter grain mite are reddish orange in color (**Figure 2**). This mite damages the plant by piercing the leaf cells, causing the leaves to develop a stippling appearance much like spider mites in corn and cotton. Regions of the fields infested with winter grain mite may develop a sliver to gray hue, and the damaged plants can be stunted. There is not an established economic threshold for winter grain mite in Texas, but the Texas A&M AgriLife Extension Service Guide "Managing Insect and Mite Pest of Texas Small Grains" recommends treating when both the mite and damage are present. Malathion is the only insecticide with the winter grain mite on its label. For more information on winter grain mites feel free to visit any of the below links.

http://entoplp.okstate.edu/pddl/pddl/2009/PA8-31.pdf/
https://osuwheat.com/2015/01/06/winter-grain-mites-in-northcentral-ok/
https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/444/444-037/444-037_pdf.pdf

Figure 2. Winter grain mite on wheat leaf. Photo credit: University of Nebraska Department of Entomology

DISEASE:

Both powdery mildew and stripe rust is being observed in area wheat fields, and with the recent rain and high winds could soon be found in more fields. Currently, powdery mildew has been found in the Southern portions of Hill County near Abbott, Aquilla and Malone. Powdery mildew is a fungal disease that can infect leaves, stems, and heads of wheat, and symptoms include white fluffy masses of fungal growth (**Figure 3**). As these fungal masses age, they begin to turn gray in color and develop small black round fruiting bodies, and eventually turn a grayish brown. This disease is favored by high humidity with temperatures between 59F and 71F. Unlike our rust pathogens powder mildew does not require leaf wetness for infection. Agronomic factors that can influence the risk for powdery mildew include planting a susceptible variety, high seeding rates creating a dense canopy, high nitrogen fertilization, and having infected crop residue laying on the soil surface. Management options for powdery mildew include planting resistant varieties, avoiding dense canopies by avoiding excessive N fertilization or high seeding rates, and using fungicides to minimize disease severity. The decision to treat for powdery mildew in wheat should be based on the level of susceptibility of the variety, current disease incidence and severity, potential for crop loss, is the weather forecast favorable for disease development, and the market price.

Figure 3. Powdery mildew infecting a wheat leaf. Photo credit: D. Tyler Mays

Stripe rust was first found in the Abbott area a couple weeks about, but just now started to spread to new fields, and with the high winds and rain earlier this week could be found in more fields in the area soon. Stripe rust produces a yellow to orange pustule that form stripes on the leaf surface . Stripe rust infection and disease development is favored by extended leaf wetness and temperatures between 50F and 60F. Disease development usually starts slowing down once temperatures consistently exceed 72F and based on the weather forecast our environmental conditions are starting to be less conducive for stripe rust development.

AUDIO UPDATES:

The Extension IPM Program has started a regional audio update that will combine 3-4 IPM agents to discuss what is being seen in the field, and what we need to be ready for. These audio updates include South Texas, Texas Blacklands and Upper Gulf Coast, Rolling Plains and West Texas, as the High Plains/South Plains. This update will be posted weekly, and by going to the following link you can sign up to receive a text when an audio is posted, with a link to the recording. Signup Blacklands Upper Gulf Coast - Extension Entomology, Texas A&M AgriLife Extension (texasinsects.org)

Blacklands IPM Update is a publication of Texas A&M AgriLife Extension IPM Program in Hill & McLennan Counties.

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