Spider mites

Across the Texas High Plains the sider mite infestations are variable with some areas treating fields while other areas are having trouble finding mites.

Yesterday, my summer crew and I went to the Experiment station at Halfway to take a 14 day after treatment count from a miticide trial. What we found was heavily damaged leaves, but virtually no mites even in the untreated plots and all across the field. The culprit was the Neozygites sp. entomopathogenic fungi. Cooler and more humid climatic conditions at the Halfway station must have been ideal for the fungi to infect the mites. From the few remaining cadavers on a leaf, some of the diseased mites had hyphae growing out of the bodies (see photos). Pickett and Gilstrap (1986) first reported Neozygites floridana as a pathogen of Banks grass mites in the Texas High Plains. Other studies have associated Neozygites infection with high mite populations and climatic conditions of extended periods high relative humidity (above 90%). Laboratory studies have shown the greatest infection rates occur when temperatures are between 59°F to 79°F, but no infection occurs at ≥ 90°F or when RH is < 85%. Once infected mites will die after 4 to 7 days when temperatures are between 68°F to 99°F.

If we continue to have additional rain events and cooler temperatures, conditions may exist at different times during the day for Neozygites to infect mites. For instance, after the rains yesterday the region had high relative humidity (%) this morning and is predicted to high humidities early tomorrow morning (NOAA forecast maps).
Sorghum Pests

As grain sorghum fields are heading, infestations of headworms and sorghum midge could become a concern. The **sorghum headworms** are made up of primarily the corn earworm and the fall armyworm. Scouting for these caterpillars is relatively easy soon after the fields have finished flowering to when grain is in the hard dough stage. All that is needed is a good size white bucket, notepad and a pencil. Using the white bucket, bend over individual sorghum heads and vigorously beat the sorghum head against the side of the bucket. Caterpillars will fall into the bucket and can be easily counted. Record the number of small (less than 1/4 inch long), medium (1/4 inch to 1/2 inch long), and large (longer than 1/2 inch). Divide the number of medium sized headworms and large sized headworms by the number of heads sampled to determine the average number of both medium and large headworms per head. These numbers of headworms per head will be used to determine if infestation levels are below or above the economic threshold level. Threshold levels can now be calculated using “apps” developed by the Texas AgriLife Extension Entomologists. If you have an android device with an OS of 2.3 or higher, a sorghum headworm threshold calculator can be downloaded from the Google Play Store at [http://goo.gl/8mXv](http://goo.gl/8mXv). If you do not have an android device the sorghum headworm calculator is available on the internet web at [http://goo.gl/5k7ZtU](http://goo.gl/5k7ZtU). These calculators will determine the treatment threshold which is based on control cost $/acre, grain value in $/cwt, and number of sorghum heads/acre. The number of medium and large size worms calculate can be compared to the number of headworms you found when sampling the field. If the number of headworms you sampled is equal to or higher than the number calculated then field infestations are at economic treatable levels.

Similarly a calculator is available at [http://tinyurl.com/lb2qe2o](http://tinyurl.com/lb2qe2o) to determine treatable levels of **sorghum midge**. The sorghum midge is a small (about the size of a gnat) orange-red colored fly. A single female midge can lay about 50 eggs in flowering spikelets of sorghum. She lives for about 24 hours, but each day newly emerged females lay eggs only in the flowering spikelets. Eggs hatch in 2 to 3 days and the maggot consumes the undeveloped seed. Scouting for midge becomes extremely important during the flowering period. Since the sorghum heads begin flowering at the top of the head and progresses down the head, if female midge are present at anytime during the flowering period a portion or all of the head could be damaged. The susceptibility of sorghum to sorghum midge may last from 7 to 9 days (individual grain head) to 2 to 3 weeks (individual fields). Control is based on preventing sorghum midge from lay eggs in the flowering heads, so sample fields at least every 2 to 3 days (preferably daily). For the Texas High Plains, sampling should be done after temperatures are above 85° F (around noon). Sorghum heads can be carefully examined by looking for midge on florets or flying around the heads. Other sample methods can be used, such as quickly sliding a clear plastic bag over the head to trap adults.
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