Field Notes

April 16, 2014

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I did not take the picture shown above this week, but I expect to see a lot of rice like it next week. I think I took this one in 2011 following the passage of a cold front much like we experienced Monday night and Tuesday. Most of the calls I got concerned the effect of temperature on young rice, but as I told the callers I was more concerned about the wind than the cold. Strong dry wind always causes desiccation of young rice and will cause "tip burn" in older rice.

The young seedlings do not have a very thick cuticle on their leaves. The cuticle is a waxy layer covering the outer cells of leaves of plants. Its purpose is to prevent the loss of moisture through cell membranes and cell walls both of which have microscopic pores in them. Without the cuticle the plant dries out. The cuticle is also hydrophobic—it repels water. One of the reasons surfactants are added to herbicide mixes is to overcome the hydrophobic properties of the cuticle.

Strong dry wind causes the leaves to whip around and in so doing the cuticle is often cracked exposing the leaf tissue directly to the air resulting in desiccation of the tissue. If it is severe it can cause stand reduction, but most of the time the new leaf emerges and the problem eventually disappears. It will slow down plants and make them more susceptible to herbicide injury. If you see these symptoms it might be prudent to wait until the plants have recovered before applying any herbicide.

If you read Jarrod Hardke's Arkansas rice report last week he had several photographs of rice exhibiting similar symptoms as are displayed in this photograph. These are very typical cold temperature injury symptoms. We will probably see some of this next week too. Sometimes these symptoms can be confused with Command injury and sometimes the whitening associated with Command can mask the symptoms.

I have never had a satisfactory explanation of why the banding of the leaves. My theory has been that the band is where the leaf was folded at the time of the onset of cold temperatures and the uppermost point of the leave thus the area most exposed to frost. Just a theory with nothing to support it. Frost also causes desiccation of tissue. These symptoms let you know it was too cold for rice, but usually are very short lived.

If you read the Field Notes issue last week there were photographs of very small larvae of a beetle the identity of which I was uncertain. I sent a couple of the critters to Dr. Dale Pollet who confirmed they are wireworms. As I mentioned last week I do not know if they were involved in causing stand loss or just happened to be found in the vicinity of roots of rice in those areas. If you notice anything like them please let me or your county agent know so that we might collect some more and try to determine if they are feeding on rice or not. Smaller versions of the photos are below.