

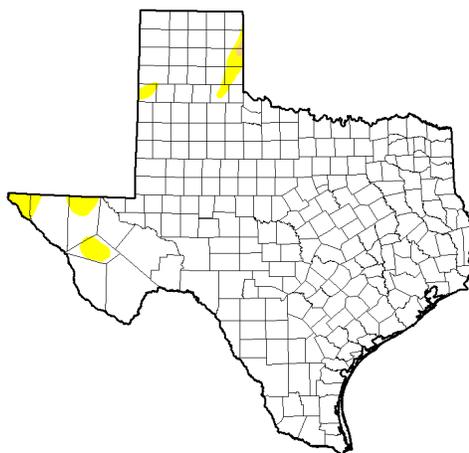
MAY 23, 2016

General Status

It has been an interesting spring. Cool soil temperatures seemed to hold on longer in the spring than usual, delaying planting of some of our summer crops. Then once warmer weather finally came, huge strides were made in planting, only to see a prolonged return of cool, damp temperatures. Now there are concerns over the bulk of our planted cotton and a hope to get back in the field to finish planting with a cut-off calendar date coming up fast. On the pleasant flip side, moisture is not too short for most of our fields. Some of us are even waiting for fields to dry out while they warm up while a few others could use some rain.

U.S. Drought Monitor Texas

May 17, 2016



Cotton

When we talk about damage from cool soil temperatures to germinating cotton seedlings there are several areas of concern, especially if the soil is unusually damp. The first area comes in the form of seedling death from freezing. I don't think we quite got that cold and unfortunately our decisions about keeping a field might not be that clear cut this early.

The next area of interest comes from imbibitional chilling, which we are very likely to see in some fields this year due to the stages and situations many of our acres were under recently. Imbibitional chilling can occur post seed swell once that seedling has run out its radical, or soon to be tap root. On these germinating seedlings, there are a lot of things going on. Cell division, elongation, and differentiation rank at the top of the list. These new and developing cells are very dependent upon plant hormones to tell



Mild cotton seedling chilling damage, with other mild factors.

them to divide, elongate, and whether they are supposed to be a root, a leaf, a stalk, or something else. Because cotton is not 'warm blooded' with a heart pumping nutrients, and in this case hormones, to where they are needed, cotton is dependent upon temperature and xylem and phloem movement through either stored or photosynthesis generated energy to get this done. In extended periods of cold soil temperatures, the freshly germinated cotton seedling plant has no way to move these critical hormones to where they need to go. Yet these hormones are very prevalent in that small plant. With warmer temperatures, the plant can easily move hormones to where they need to be to tell all of these new and developing cells what to do. The end results of cold soil are some very confused developing cells that will eventually form the core of our cotton plant. If these cells get too confused the seedling will eventually die. With just a touch less confusion, the seedling can and often do emerge, only to not physically be able to keep up when warm weather returns because at its core is not properly developed. These plants will either die shortly after emergence. With even less but still significant chilling, young plants might be able recover to survive but remain damaged and low yielders for the entire season. With only mild chilling damage, plants can fully recover to make a profitable yield. Determining how much damage your fields have received will be critical this week.

Another area of concern over seedlings in cool soil comes from seedling diseases. These are our 'common' or 'usual' culprits for seedling death and delay. We do see most of these seedling diseases annually, but these organisms flourish in cool and damp soil conditions. In a similar degradation to imbibitional chilling, these pathogens can and will cause similar damage and loss. It is very possible that these diseases, in the right situation, can overcome our fungicidal seed treatments. Fields without any seed treatment protection will likely be at very high risk.



Phymatotrichum omnivorum – cotton root rot

The last factor I recommend we spend some time scouting for on our planted cotton is wireworms. Historically, wireworms are a sporadic pest in seedling cotton but have proven to be an annual costly nuisance locally. Wireworms do not like cotton and it is not a preferred host. They will however attack cotton after germination and before emergence as a survival method, often as a last resort to save off starvation. When we review the literature we find a list of circumstances where wireworms could be a problem for seedling cotton.

- Following a grain, forage, or hay crop.
- In a dry season following a wet year.
- In a field with a heavy cover crop or heavy spring weed pressure.



2015 Seedlings with multiple issues.

Following these guidelines, I would consider the majority of cotton acres this year at risk for wireworm damage. The cool soil temperatures and related delay in emergence only give the potential wireworm problem more time and opportunity to accumulate damage. The damage from wireworms can be two fold. First, is the direct damage from their feeding. If the feeding occurs on the cotyledons only the damage is usually minimal. It takes an experienced eye to even spot this type of damage. If the feeding occurs along the tap root it could be substantial causing developmental delays for that plant taking weeks to recover from, and if heavy enough, eventually fatal. If the feeding occurs at the apical meristem (growing point found between the two cotyledons) or the curve just below the cotyledons, it is almost always fatal for that plant. There is a substantial amount of secondary damage that is normally associated with wireworm feeding on the taproot of cotton seedlings. The wounds caused by the



2015 Field that did not survive wireworm damage.



One of the wireworm larva responsible for seedling damage.

feeding open gapping wounds allowing seedling diseases to impact young plants at a level I would estimate to be near ten-fold.

Of the few planted cotton fields in our program I have been able to look at following the cool temperatures I do see signs chilling, seedling disease, and wireworm activity. I would rate these fields as having some light chilling, and very light seedling diseases and wireworm damage. These fields all have good insecticidal and fungal seed treatments. For these fields, I am recommending to the customer we watch these fields closely in the higher temperatures this week. If for any reason, we begin losing seedlings, the roots look to crooked or knotted (confused by chilling), heavy seedling damage, or accumulates high wireworm pressure, we will be forced into replanting. This is not to say all fields in Hale, Swisher, & Floyd counties are in the same situation. Each field needs to be evaluated independently for these factors.



Do Not Forget the Weeds! They have not forgotten your field!



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[http://
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For quicker pest alerts-

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*Pest Patrol Hotline,
registration at:*

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We're on the air...

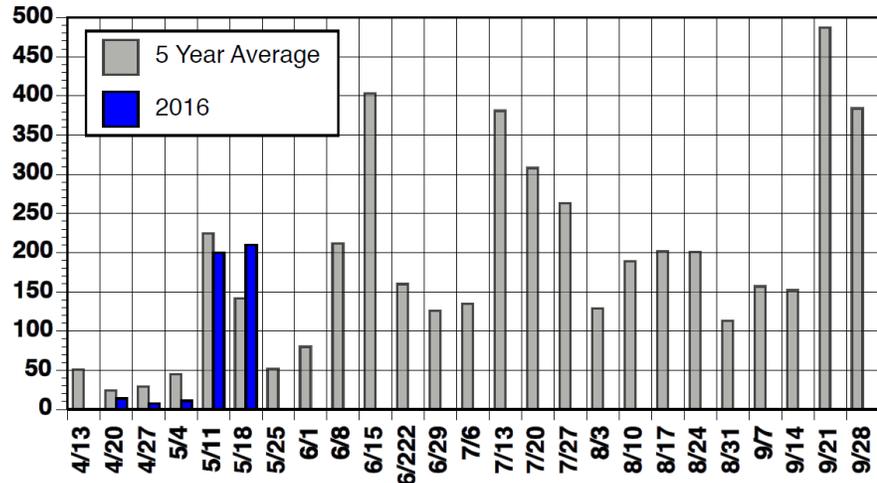
*"Tuesday's with Blayne"
from 6:30—7:00 AM
on the HPRN on
1090 AM KVOP-
Plainview.*

*"IPM Wednesdays" from
1:00-2:30 PM on The
Fox Talk 950 Ag
Show. Fox Talk 950
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Corn & Sorghum

Following the rains and cool temperatures our corn and sorghum looks pretty good. Of the fields I have been able to check, I see no ill effects of the cold. The oldest corn in our program is currently at V4 stage and the oldest sorghum is at V2 stage with more plantings yet to come for both crops. It is confirmed that the sugarcane aphid did overwinter in Hale County and a 'wild' population has been found in northern Lubbock County surviving on Johnson grass. At this time, they remain very hard to find and only confirmed on Johnson grass. It is impossible to predict how bad this pest will be but there are hopes that our local predator population will be able to stay on top of the sugarcane aphids better this year because they are already here. So far the predator population does seem higher due to our wheat and canola feeding aphids we have had this winter. We will be watching this situation closely.

Average number of fall armyworm moths per trap, Lubbock, Texas 2016. Current year averages are based on two traps.



We will begin trapping for adult FAW and bollworms in Hale, Swisher, & Floyd very soon.

Blayne Reed