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Cotton Insights Newsletter

A service provided by Windstar, Inc. affiliated gins.

September 13, 2019

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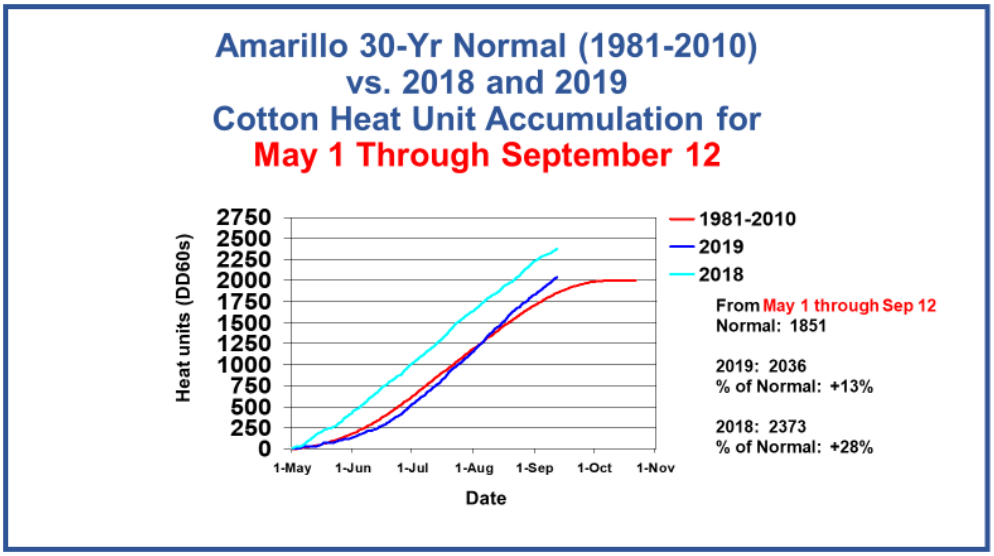
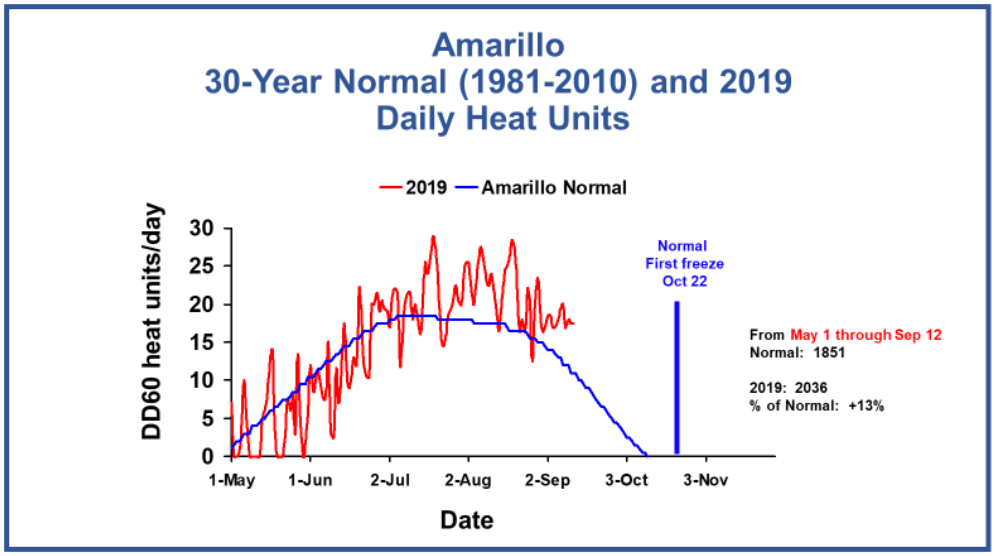
Crop Update

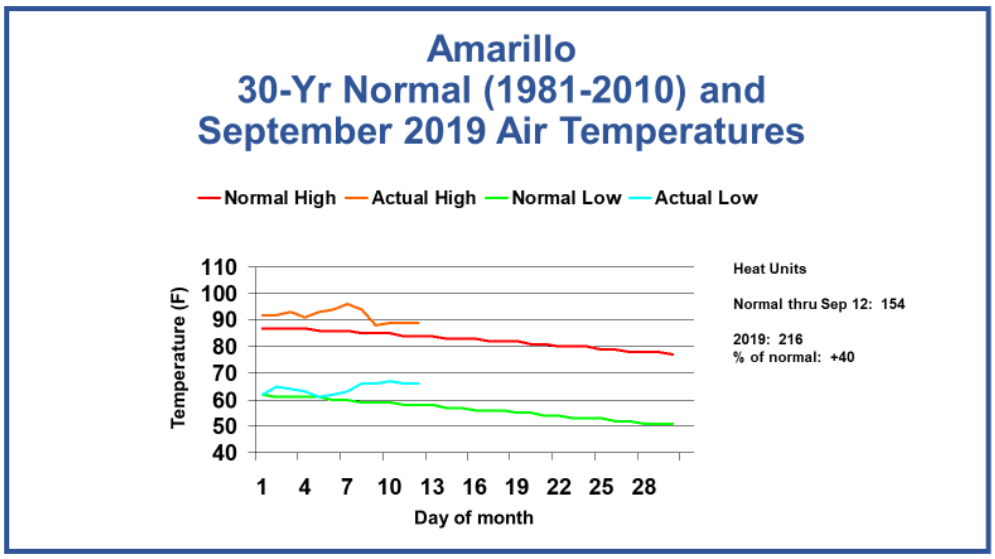
Above normal temperatures have resulted in higher than normal cotton heat units for the first twelve days of September (see graph below). For most of the area, rainfall continues to be scant. For fields that have had adequate moisture, these temperatures are moving crop maturity toward the finish line, and open bolls can be found in many fields. Dryland fields in most of the area have suffered considerably unless they have been under some of the spotty rainfall events that have popped up. By and large, growers are fretting over the yield potential and many are considering crop insurance adjustments. Many of these dryland fields will struggle with profitability. Because of ramped up inputs, many irrigated fields with marginal irrigation capacity will also struggle with profitability. Unfortunately in most places we just haven't had a lot of help from Mother Nature in 2019.



When looking at the daily heat unit accumulation for the season (see graph below), the above normal temperatures resulted in above normal daily heat units for most of the past 70 days or so. As of September 12, based on the 30-year normal temperatures, a total of about 151 cotton heat units remain before daily heat units go to zero on October 11.



The temperatures for the month of September thus far have been well above normal for both the highs and lows and this can be seen in the graph below.



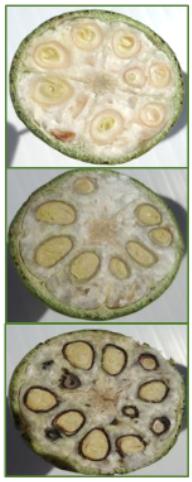
Crop Maturity Considerations

Crop maturity determination is critical for a successful harvest-aid program. Premature crop termination has been shown to reduce lint yield, seed quality, micronaire, and fiber strength. Harvest-aid chemicals cannot increase the rate of fiber development. Only additional good growing weather including open skies and adequate heat units combined with healthy plants with functional leaves can mature cotton bolls.

Three Crop Maturity Determination Methods:

1) Knife Test

- Maturity can be determined by using a sharp knife to cut midway through the length of the bolls.
- If the boll is watery or jelly like on the inside, then it is immature and needs more heat units. If boll development is such that the knife cannot slice through the lint, then the boll is nearly mature.
- Close inspection of the seed will give further indication of boll maturity. If the seed coat is turning tan and the seed leaves (or cotyledons) are fully developed, the boll is mature. For photos of this, see below.



Requires more heat units prior to ethephon application. Ethephon will probably open this boll but it likely will not "fluff." Still has "watery" lint, and "jelly" in seed.

Fully formed seed leaves (cotyledons), no "jelly" in seed, tan seedcoat ring forming, lint stringing out. Ready for ethephon application.

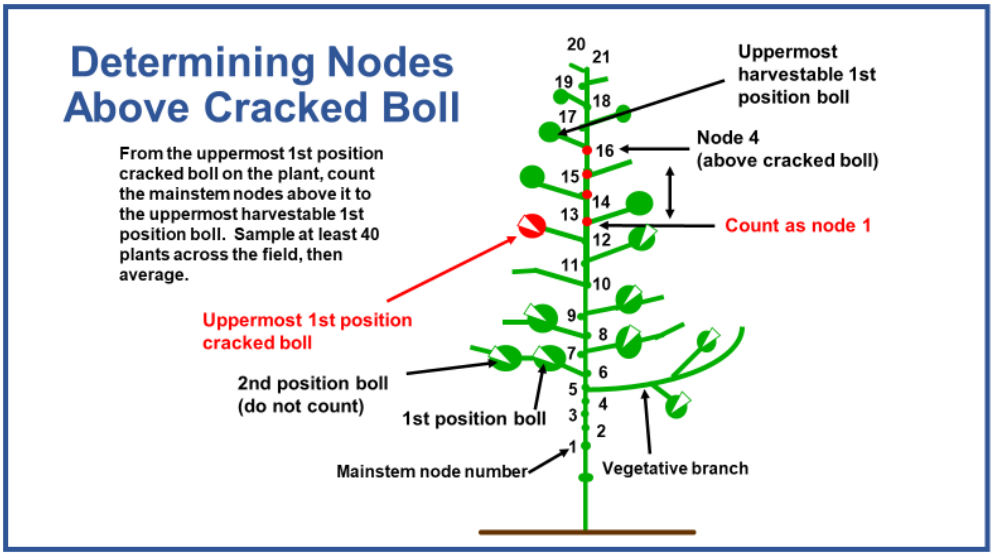
Fully mature, blackened seed coat, should open with paraquat.

2) Open boll percentage

- This method is fairly easily accomplished, but can have limitations. One just needs to measure off a known number of row-feet in multiple areas of the field, then begin counting open bolls and unopened or "green bolls." Track these separately.
- Once both types have been counted, simply add the green boll count and the open boll count to obtain the total number of bolls. After that, divide the open boll total by the total bolls and multiply times 100. This allows for a reasonable observation of percent open bolls.
- The limitation that occurs with this method arises when a "fruiting gap" exists in the plant. If bolls are present at the bottom of the plant, none in the middle, and more bolls at the top, this can give a skewed representation of the maturity of the field.

3) Nodes Above Cracked Boll

- It is important when using this method to identify the uppermost first position boll that has a likelihood of contributing to lint yield. This is a judgement call and should be supported by knife-test evaluation.
- It was determined that if the uppermost first position-cracked boll is within three nodes of the uppermost harvestable first position boll then no lint weight will be lost if a defoliant-type harvest aid is applied at that time (see figure below).
- However, if the uppermost harvestable first position boll is four or more nodes above the uppermost first position cracked boll, then potential for some lint loss and reduced micronaire exists. This potential increases as the NACB increases.
- If applying desiccants, more bolls must be mature in order to reduce the risk of fiber weight loss or reduction of micronaire, thus two NACB would be a better target.



- When determining boll maturity of adjacent fruit, one can consider the following. When moving up the plant from a first position boll that has just cracked to a first position unopened boll on the next fruiting branch, about 60 additional heat units (DD60s) are required to obtain similar boll maturity.
- If moving out from a first position boll to a second position boll on the same fruiting branch, about 120 heat units will be required to reach the same level of maturity.
- For an individual boll, a total of about 800-850 heat units are required after pollination to produce normal size and quality.
- However, bolls obtaining fewer heat units may still make productive lint of lower micronaire that may contribute to final yield.

Upcoming Meetings

Windstar Affiliated Gins Meetings and Dates:

Edcot Gin – Mixed Technology Trial, Bobby Byrd Farm, Plainview, September 24

Top of Texas Gin – PhytoGen Enlist Trial, Braden Gruhlkey Farm, Wildorado, September 25

Lonestar Gin – Open House, Pampa, 5:00 pm to 8:00 pm, September 25

Upcoming Field Days:

Texas Tech University Quaker Farm Field Day, Lubbock, 9:00 am, September 16

NexGen Field Day, Texas Tech Quaker Farm, Lubbock, 10:30 am, September 18

BASF/FiberMax/Stoneville Field Day, Lubbock, September 26

PhytoGen Field Day, Lubbock area, October 2; Plainview area, October 3