

Extension Cotton Newsletter- 6/11/10



Shane Osborne

As of this writing most early planted (prior to May 15th) cotton in Southwest Oklahoma is close to or has reached the pinhead square stage which is a welcome sight due to its slow start. As usual, a crystal ball would have helped many of us wait until mid-May to plant, however, fears of fleeting moisture trumped the lack of ideal temperatures leading to a substantial number acres being planted the first week of May. It's amazing how a few night time temperatures below 50 degrees can make a two week old stand of cotton look 6 days old. We were quickly reminded how valuable warm weather is to a healthy vigorous stand of cotton. Fortunately, "40-something" degree nights won't be seen again until harvest (hopefully!). Since the 20th of May we have definitely had some "cotton weather" and most fields have really kicked into high gear. The first ten days of June have been somewhere between 95 and 103 degrees. With cotton in high gear, three things come to mind...fleahopper control, plant growth regulators and irrigation timing. I'll leave the fleahopper recommendations to Terry Pitts, our local OSU IPM Specialist. He has recently written a fleahopper article that can be accessed over the web at <http://www.osu.altus.ok.us> under the "In-season Report-IPM" heading or you can call 580-482-8880 to discuss fleahopper questions with Terry. That leaves plant growth regulators (PGR's... Pix, Pentia, Stance, Mepiquat Chloride, etc.) and irrigation timing. The earliest recommended application of a PGR should not occur until the matchhead square stage (which is about 7-10 days after pinhead square) and only if you expect soil moisture conditions to remain favorable for the next 10 days. If soil moisture is insufficient there will be no need for a growth regulator. Typically we don't depend on a yield increase from the use of a plant growth regulator, however, it has been proven that PGR's do promote earliness and often times earliness pays off in the fall. Since there are multiple products and rates to choose from I recommend calling (580-482-2120) or coming by our office to discuss PGR questions. That brings us to the last item...irrigation. If you have the ability to irrigate there are some key things to keep in mind when considering when to start. First and foremost, we should dispel the old myth about stressing cotton to "help" it flower. Nothing could be farther from the truth or more counter-productive. Although it is true that stressed cotton will flower earlier, it is more important to understand that cotton's yield potential quickly spirals downward when flowering is initiated by stress rather than natural development. So what does that mean for scheduling irrigation, or the value of timely rainfall in dryland production? The key is to understand when yield potential is developed. Although cotton's greatest demand for water occurs at peak bloom, the development of yield potential occurs much earlier. In regards to this potential, we need to understand the relationship between the number of nodes above white flower (NAWF) at first bloom and cotton's overall yield potential. Remember that the number of nodes above white flower (NAWF) is greatest at first bloom and begins to decrease shortly thereafter. Since each node on the plant represents a fruiting branch, any management practice that limits the number of nodes above our first white flower essentially limits our yield potential. As the season progresses the NAWF slowly decrease until reaching cutout (4 NAWF, usually about the 25th of August for Southwest Oklahoma), which is the last point at which we can expect a bloom to develop into a productive harvestable boll. When cotton experiences significant moisture stress between the

pinhead square and bloom stages the NAWF will always be less than optimum at first bloom, resulting in a reduced number of fruiting branches and thus overall yield potential. In order to maintain optimum yield potential we want our NAWF at first bloom to be in a healthy range (7-8 range). If it ends up being less than 6, we definitely have much less yield potential. So how do we schedule irrigation timing in order to optimize yield potential. Since we know it takes approximately 21-25 days for a cotton plant in the pinhead square stage to reach bloom, our timeline has been established. Once the plant reaches bloom the yield potential has already been set, therefore it is critical that we maintain good soil moisture within this three week period to protect our yield potential. If your cotton is at the pinhead square stage and soil moisture conditions will become poor within the following 7-10 days, be prepared to irrigate, even if you have a limited supply of water. To further discuss any of these topics please feel free to call or come by the office.

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