



Cotton Field Check

Management Updates from UC Cooperative Extension
June 23, 2005

Field Situations and Management Considerations For San Joaquin Valley Cotton – late-June, 2005

R.B. Hutmacher, UC Shafter REC and UC Davis Plant Science Dept., S.D. Wright, UCCE-Tulare Co., Dan Munk, UCCE-Fresno Co.,
P.B. Goodell, UC-IPM, Kearney Agricultural Center

At the Tulare / Kings County production meeting on Tuesday of this week, there were a fair number of comments from PCA's and some farm managers regarding recent increases in square losses as compared to retention levels measured a week or so earlier. Some of us had not seen this drop in retention in fields the prior week, so with these PCA comments in mind, we spent a little more time on evaluations in some of our plots in western and central Fresno County, northern Kings County, as well as some locations in Kern County during the middle part of this week.

Most of the plant mapping done by Hutmacher et al in these areas this past week showed:

- generally good bottom five square retention in some later Pima and Acala plantings sampled at about the 10-12 node stage (with bottom-5 retention in the 60 percent to over 90 percent range, average about 80+ percent).
- Good bottom-5 square retention in other fields where plants were at about the 14-15 node stage, with top-5 retention ranging from an average of 54% to over 80% across sampled fields
- There were some localized areas within a few sampled fields where square retention in the top-5 was less than 40% in some areas of the fields while retention levels exceeded 70 percent in other areas of the same fields – no clear explanation for these low retention areas was figured out
- Well over half of these fields had received a sidedress Temik application within a period of 1 to 4 weeks prior to this most recent plant mapping, but the others had either been untreated or we think had received only a miticide application previously
- Lygus counts in these fields were in the 0-5 per 50 sweeps range, so pressure was low in these sampled fields (*obviously, much higher counts were seen elsewhere this week*) – *beneficials were evident in good numbers in most of these fields. There were reports of stinkbug problems elsewhere, but they were not found in these fields.*

As always, it is very useful to compare what you are seeing in your fields with observations from neighbors and consultants in other areas – it can be very useful either as an early warning system or just as a reminder that conditions can change quickly and routine plant mapping and monitoring for pests and beneficials are useful and necessary in a year like this one.

As of this week, retention in these sampled fields generally looked good, although plants in most sampled fields remained small for this time of the calendar year. Many sampled plants had lower than typical height:node ratios, indicating less vigorous growth. In some fields, however, even plants with low to moderate height:node ratios had relatively long internodes in the upper canopy, indicating that vegetative growth rates were recently starting to take off (with warming weather, irrigations, nitrogen

applications of recent weeks). As plants hopefully start to respond to what we hope will be more favorable weather, available soil water and nutrients, it should be useful to focus on specific plant growth responses near first bloom timing. At this time close to first bloom, accurate assessment of developing field situations can best be done by observing field conditions and utilizing tools such as plant mapping and pest monitoring. This year we expect to see some significant acreage of plants that could be described in one of the following ways:

WEAK TO MODERATE VEGETATIVE GROWTH, THINNER STANDS, SOME RETENTION PROBLEMS. There are a lot of issues going on in these fields, and some variable plant populations to manage all in the same field. Variable plant populations mean that these fields will be hard to sample (for plant growth and insect counts) season long. As we approach first flower, be flexible in making PGR (PIX, etc.) decisions. If retention remains good in some of these weaker stands, PGR applications may be at lower rates or unnecessary. However, if good growth rates develop and fruit retention is highly variable, expect that more intensive sampling will be required to assess both plant growth and insect situations, as a range of things may be going on in the field. Try to go back to the same zones within the field each time to get a handle on how things are going.

WEAKER VEGETATIVE GROWTH AND GOOD RETENTION

There certainly are fields out there that fit this description, and they are potential candidates for early cutout if retentions are good and growth limited. These fields could move toward an early cutout, which may be a bad thing (reduced yield potential) or a good thing (earlier crop termination might help if the crop was planted late). Particularly if these plants have weak root systems and poor to moderate early vegetative growth, you may decide to push the plants with water or nutrients (N and/or K) to prolong growth. In a year like this one, particularly with late plantings, the time to get started is within the first few weeks of bloom. These water or fertilizer additions much later in crop development (4 weeks+ into bloom) may just kick the plants back into bloom, with a considerable gap between first-set and later-set fruit. Your own past experience with the ground will help tell you if the plants are likely to broadly respond and continue growth with earlier or higher amounts of irrigation and fertilizer used to "push" the plants, or if the response will likely be sporadic across the field. If you are unsure of the response, keep fertilizer applications moderate (30-40 lbs N, for instance).

STRONG GROWTH, VARIABLE RETENTION. Particularly with some of the later plantings that escaped a lot of the rain and cooler weather, recent warm weather coupled with good soil moisture from recent irrigations has brought aggressive new growth in the upper canopy of plants, with long internode lengths (3" or more) in the upper 4-5 nodes in many fields. Where this strong vegetative growth occurs in combination with good fruit load, it can join together to produce some very high yield potentials, but still bears repeated observations and decisions at the right time. In these strong growing fields, watch carefully to see if the fruit retention situation changes, and be ready to use multiple applications of PGR's and/or delayed irrigations if the situations change dramatically toward reduced retention). Especially this year with later plantings, there may not be adequate time to grow very large plants and mature late developing bolls.

A REMINDER - INFORMATION ON FUSARIUM IN COTTON:

In University and industry meetings this year, we have reminded PCA's and growers to be on the lookout for signs of the fungal pathogen "Fusarium oxysporum" in cotton fields in the San Joaquin Valley, particularly if you see symptoms in areas with no prior known history with this disease. Updated information on why you should be aware of this potential problem, what is different in the

Any products, services, or organizations that are mentioned, shown, or indirectly implied in this document do not imply endorsement by The University of California. Read and follow label directions.

Fusarium race identified, pictures of symptoms, information on the organism life cycle, and containment recommendations are shown in COTTON MANAGEMENT GUIDELINES and FUSARIUM UPDATES available on our UCCE cotton website at: <http://cottoninfo.ucdavis.edu> or from your county UCCE Farm Advisor.

** Part of the reason to mention this Fusarium issue again is based on optimal timing for evaluation of this problem in the field Fusarium symptoms on cotton are much more evident in the period prior to mid-bloom, with plants dying at the seedling stage followed by development of wilt disease symptoms (blotchy yellow and necrotic areas on leaves, stunting, vascular staining). The plant symptoms can in many cases look a lot like those occurring with Verticillium, but the difference is that the Fusarium symptoms will always show up earlier (seedling through pre-bloom) and often are combined with easily observed early season stunting as compared with the later-season timing of Verticillium symptoms. If you have seen possible areas for follow-up evaluations, consider reviewing these UC GUIDELINES and checking the fields again. Contact your Farm Advisor if you want to arrange for a field visit.*