

Cotton Field Check

Field Conditions and Comments: Early-May, 2008

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In many ways it has been hard to say that the weather has been “bad” for the past several weeks, since it hasn’t been rainy and really cold. However ... cool nights, variable weather conditions, and in many cases lots of drying winds the past month or so have not been helpful to many cotton fields this year. With drying of the upper soil from repeated windy days in some areas, it is a double shame that we had such a dry March and April, with almost no rain. In most fields I have looked at, plant growth has been slow, and in many cases plant development during the cooler weather seemed to almost stall with slow to very slow development from the cotyledon to 2 to 3 node stage. Weather forecasts for the coming week look like a strong warming trend, which might help get some healthy plants growing with more vigor. In recent field evaluations in Kings, Kern and Fresno Counties the past week, plant development ranged from about 1 to 4 nodes. My observations probably match yours, in that again this is one of those years where it is hard to make useful generalizations about crop conditions and management approaches to consider ...many evaluations need to be field-specific.

There are some early plantings (late March into April) that look ok at this point, perhaps a little behind expectations for plant size and growth, but with good stand survival. However, the fields of concern to me right now are those:

- (1) that appear weak, with only one or two true leaves;
- (2) that have plant populations that have been reduced from losses associated with seedling diseases such as *Rhizoctonia* and *Pythium*; and
- (3) plants that have the combination of little photosynthetic leaf area, damaged or limited tap roots, poor lateral root development, and soil conditions of drying surface soils.

With warm to hot conditions, the combined plant conditions described in particular in #(3) represent plants that can get into trouble, plants that may have difficulty thriving (or even surviving) if winds continue and the heat cranks up. We are likely to have to abandon one of our University of California variety trials due to weak plants, stand losses from drying winds and inability to supply supplemental water in time to save it.

Suggestions For Plants in this Condition?

Weak Plants, Fields with Some Stand Loss. I have been trying to pull out a shovel or soil auger in many areas to see if upper soil layers have dried excessively and to assess if the root system is well connected into deeper soil moisture. In some cases, particularly with *Rhizoctonia* damage, tap roots have been significantly damaged, with more lateral roots developing closer to the ground surface as plants try to recover from early root damage. Some past field trials have shown that early in the growing season, these plants can be more prone to water stress until the root system becomes better established and able to explore a larger volume of soil. Under these conditions, particularly with hot weather and winds, there can be some advantages of a little earlier start for first irrigations. Not every field will need earlier irrigations, and in a water short year we don’t want to set ourselves up for unnecessary additional irrigations. In order to assess root development and damage, there aren’t good substitutes for just pulling out a shovel, cutting down through the expected root zone, and looking for distribution and damage to the root system. This “shovel assessment” always helps me improve my comfort level in deciding whether or not it is time to start irrigations.