

MESSENGER-INQUIRER



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Dry Weather Effects on Corn at Early Growth Stages

Dry weather has been the topic of conversation this week. Fortunately, mild temperatures have reduced severe stress to the crops during this prolonged absence of moisture. A soaking rain would still be most beneficial to the long term outcome of the crops. With mid-April planted corn timed to tassel in the next couple of weeks Dr. Chad Lee, Extension Grain Crops Professor at the University of Kentucky prepared the following article about the dry weather effect on corn at the current growth stages.

The corn leaves will roll during the heat of the day to try to conserve as much water as possible. When this leaf rolling occurs, the plant conducts less photosynthesis, causing it to produce less biomass during drought stress.

Potassium Deficiency: Potassium deficiency is a common indicator of drought stress on young corn plants. Plant tissue samples were taken on V3 to V6 corn last week, and this week likely will show K deficiency, and that K deficiency may be from the drought and nothing else. The corn plant needs water to take up K, so adding more potassium will have no effect on the corn crop if the crop does not have water.

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Water is needed for corn to take up several nutrients, not just potassium. Potassium might be the most obvious, but a tissue test will reveal several others as being deficient as well. A soaking rain is the best remedy for these transient deficiencies.

Both seed furrow sidewall compaction and subsurface tillage compaction become more obvious in dry soils. If corn in a single row or a section of the field shows twisting and curling before other corn, compaction could be a problem. “Vertical tillage” implements and discs often cause soil compaction if soils were excessively wet when they were used. In dry soils, these compacted areas become impossible for roots to break through. Both sidewall compaction and subsurface compaction stunt roots. Those stunted roots cannot take up as many nutrients resulting in stunted corn plants. Timely rains are about the only in-season remedy for these soils.

The dry weather and hot temperatures can cause all roots from one or more nodes to desiccate or dry out and die. A strong wind at this point will knock the plants over. Corn plants from about V2 to V3 are the most susceptible to this. Corn will recover but with reduced yield. Corn plants in shallow planting depths are more susceptible. Soaking rains to allow new root growth before any strong winds occur is the best remedy.

Once corn reaches V6 growth stage, the dominant ear and tassel formation start. However, water stress starts affecting row number and kernel number closer to the V12 growth stage. At the V6 growth stage, the corn plants have switched to the nodal root system. This is the final stage before exponential growth. A lack of water from V7 to about V12 could reduce the total biomass of the stem and leaves. A lack of water around V12 will reduce kernel rows and then kernel numbers per row on the ears.

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Most soil residual herbicides need rainfall to activate, hopefully, enough moisture was received last Sunday for activation to occur. Scout fields to identify which weeds are escaping and plan to spray once a rain event occurs. The weeds are not growing well now, either. They need the rain event to be receptive to the herbicides. When applying the herbicides, be sure to use the full adjuvant types and rates recommended on the labels.

Nitrogen volatilization losses are the greatest risk in dry weather. Urea fertilizers on the soil surface will be actively volatilizing within 72 hours after application. Urea treated with an adequate rate of a urease inhibitor will not begin volatilization for about 7 to 14 days. Urea treated with urease inhibitor and duromide, the active ingredients in Anvol, will not volatilize for about 14 to 21 days.

The weather forecast this week provides low chances of rain. More corn in more fields will roll this week. Some of it will look bad. But all of it still has a chance to make good to excellent yields.

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