



University of California Cooperative Extension – Kern County

NEWS RELEASE

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Critical Times to Avoid Water Stress in Corn

Water is often the most limiting factor in plant growth and yield. However even with irrigation, subjecting corn plants to any water stress at critical periods in the plant's life cycle can severely reduce yields and it is long before ears are visible. Research conducted at the University of California and other universities around the county have identified these most critical times.

Corn growth stages until tasseling are identified by leaf number (i.e. V1 to V18). Each leaf is counted when the leaf collar is fully exposed. At growth stage V9, the potential kernel row number is being determined, that is the thickness of the ear. Corn plants at this stage may be only 4 feet tall but avoiding water stress that this time is most critical. At growth stage V12 through V17 the length of the ear is being determined. Any growth limiting stress at this time will reduce yield. The largest yield reduction from water stress occurs from 2 weeks before to 2 weeks after silking. Plants can use up to 1/3 of an inch of water a day during those critical growth periods. No amount of additional water can compensate for moisture stress that occurs during these critical growth periods.

For late-planted corn there is another critical time in irrigation management. The growing point remains under the soil surface until growth stage V6. Around growth stage V3, flooding can kill the growing tip in a few days especially if temperatures are high.

Careful irrigation management is essential for optimum yields. To help in irrigation scheduling, crop water use tables and actual evapotranspiration rates are available through local UC Cooperative Extension offices or on-line at www.cimis.water.ca.gov. Timing is everything.

