

INTEGRATED CROP MANAGEMENT

Crop weather indicators for 2005

The 2004 crop weather proved to be a record setter. A like weather pattern occurs about once every 10 years. It may not be the “best” strategy to assume that next year will be the same and that the best crop varieties during the 2004 season will be the best in 2005. Then again, do not fully rule it out; there is a 1-in-10 chance it will happen again.

- The 19-year cycle of weather risk to agricultural production is transitioning into the high-risk 6-year period. Historically, there are two serious Corn Belt droughts during the six years, a 1-in-3 risk of drought for any given year. This is compared with the previous 12 years, when the historical drought risk was 1 in 12. The 400 percent increase in historical drought risk makes modification of risk management procedures advisable.
- May–August 2004 was anomalously cool. The July–August period of 1992 was even colder. September was warmer than usual both years. Soybean yield was near record. Corn set a new record high both years.
- Years when the September temperature averaged near the August temperature, yields have been near or above record (1978, 1986, 2004).
- A persistent “60-day” moisture cycle dominated 2004 in the central United States. This has not been observed to this extent before. We do not know the full crop impact of this type of weather pattern and will be surprised if it happens again.
- If the weak El Niño persists into late February, it will tend to persist for an average of 14 months. There is no record of widespread drought during an El Niño event in the U.S. Corn Belt. Accordingly, for the 2005–2010 period, the historical drought risk is less than 1 in 3 if an El Niño is in place and is greater if a La Niña develops.
- Overall water stress in 2004 was not a major factor in the Corn Belt (it was for some localized areas), and the soil moisture reserve to go into 2005 appears to be building in a normal manner (with excess in some areas).
- The winter season is not expected to be excessively cold and the western Corn Belt may expect above usual winter moisture because of a weak El Niño.
- There are no indicators of widespread drought showing up just yet in the Corn Belt for 2005. There is one indicator (warm sea surface temperature north of Hawaii) of a return to drought in the High Plains and the Mountain West.
- With no strong trends in place, yields for 2005 are expected to exceed the trend by 2 percent (about 42 bu/acre nationally for soybean and 145 bu/acre for corn).

Weather conditions are seldom such that highly reliable forecasts are feasible. Leading weather indicators, however, have proven useful in the anticipation of above or below trend crop yields during the past decade. Indicator models are usually reliable to ± 5 percent of actual yield.

This article originally appeared on page 13 of the IC-494 (2) -- February 21, 2005 issue.

Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2005/2-21-2005/weather.html>

IOWA STATE UNIVERSITY
University Extension