Mapping Agricultural Decision Making across the U.S. Corn Belt

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How does climate information fit into the timing of U.S. corn farmers’ climate risk management decisions?

Decision calendars help identify opportunities for inserting climate information into a decision process as well as points where other considerations might overrule use of the climate information. Developers of decision calendars are challenged, though, by a potentially infinite number of modifications required to address spatial variability in agricultural decision making. Variability in climate, soils, and agricultural production systems across a region may result in deviations in decision-making times.

Takle et al. (2014) developed a prototype of a climate-based decision calendar for corn production for the central U.S. Corn Belt region (Iowa, northern Illinois, and northern Indiana). Whether the calendar represents decision timing across the broader U.S. Corn Belt is examined here.

**Key findings:**
- The decision calendar approach was effective in describing seasonal decision making and “entry points” for climate information into those decisions.
- Many key decisions in the cropping year take place during the preceding fall and winter, months before planting, raising questions about types of climate information that might be best inserted into risk management decisions at that time.
- Integration of decision calendars and climate information use may vary regionally.

**About the survey**

Data were collected via a stratified random sample survey of agricultural producers, including farm operations with more than 80 acres of corn production and a minimum of US$100,000 of gross sales. The sample was stratified by 22 six-digit Hydrologic Unit Code (HUC) watersheds in 11 Corn Belt states including Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin, in order to address spatial variation in climate, hydrological, and ecological conditions. The survey was mailed in February 2012 to 18,707 eligible agricultural producers. Completed surveys were received from 4,778 producers for an effective response rate of 26%. The survey was a collaborative effort between two USDA-funded projects, Useful to Usable (U2U) and Cropping Systems Coordinated Agricultural Project (CS-CAP).