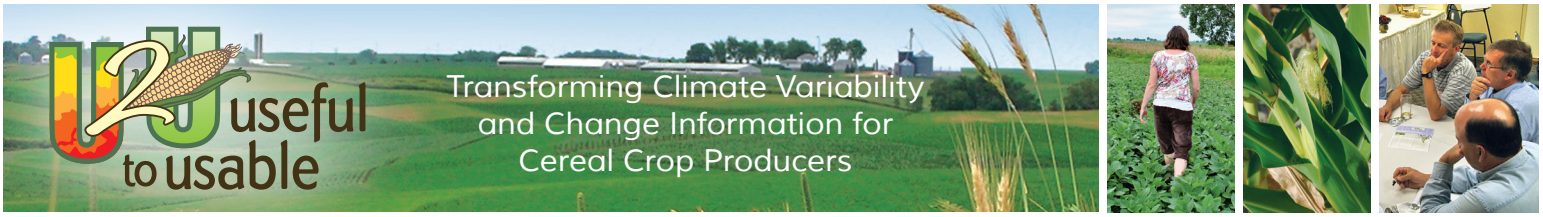


2017 PROJECT UPDATE

Weather and climate patterns are a driving force behind the success or failure of cropping systems. With U.S. corn and soybean production accounting for nearly one-third of global supplies and contributing over $50 billion annually to the national economy, the ability to successfully produce crops under more variable climate conditions becomes critical for food security and rural livelihoods.

The U2U project strives to **enhance the usability and up-take of climate information and bolster Extension capacity** to address agro-climate concerns. We are developing climate-based tools to assist Corn Belt farmers and ag advisors with decisions related to purchasing, marketing and activity planning throughout the growing cycle. Long term, we expect these efforts will lead to **more profitable** agricultural systems and **greater resilience** to a changing climate.

Top Project Accomplishments

1. Simulated the **impacts of historical and future climate** conditions on crop productivity across the U.S. Corn Belt using crop models of varying biophysical complexity and process scale representations.

2. Conducted five large-scale **surveys of Corn Belt farmers and ag advisors** about climate information needs, climate change beliefs and concerns, and trusted information sources.

3. Worked closely with stakeholders to develop five **web-based agro-climate decision support tools**.

4. **Presented project information** at 105+ conferences and 165+ outreach events. Published 50 peer-reviewed journal articles and 50+ book chapters, Extension articles and research datasets.

5. Received an **additional $860,000 in funding** among team members to expand and leverage U2U research, tools, and ideas.

Project Collaborators

An integrated team of university researchers, climatologists and social scientists from across the Corn Belt collaborate on the U2U project.

The U2U Project Team

2016 - 2017 Project Collaborators

Purdue University
Linda Prokopy*(lead), Larry Biehl, Sarah Church, Otto Doering*, Laura Esman, Ben Gramig*, Xing Liu, Dev Niyogi*, Paul Preckel, Hans Schmitz, Ajay Singh, Carol Song*, Molly van Dop, Melissa Widhalm, Lan Zhao

Iowa State University
Chad Hart*, Lois Wright Morton*, Eugene Takle*, Adam Wilke

Michigan State University
Jeff Andresen*

South Dakota State University
Laura Edwards*

University of Illinois
Jim Angel*, Beth Hall*, Atul Jain*

University of Michigan
Yun-Jia Lo, Maria Carmen Lemos*

University of Missouri
Pat Guinan*, Ray Massey*

University of Nebraska-Lincoln
Roger Elmore*, Tonya Haigh, Cody Knutson*, Martha Shulski Natalie Umphlett*

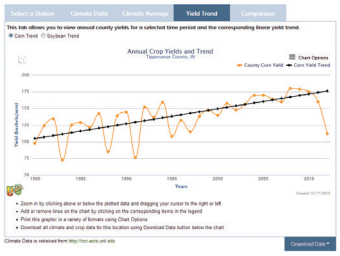
University of Wisconsin
Jenna Klink*, Vikram Koundinya, Greta Landis, Amber Mase, Rebecca Power*, Amber Schmechel

*Denotes co-project investigator

AVAILABLE NOW

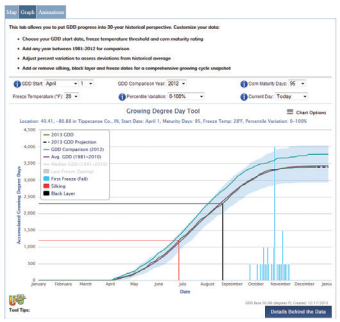
AgClimate View DST

A convenient way to access customized historical climate and crop yield data for the U.S. Corn Belt. View and download graphs of monthly temperature and precipitation, plot corn and soybean yield trends, and compare climate and yields over the past 30 years. AgClimate View also provides insights on rainfall and temperature variability throughout the year and lets you compare current conditions to the historical average.



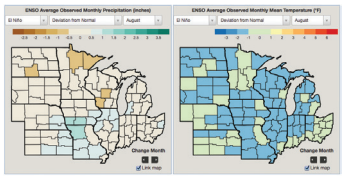
Corn GDD DST

Track real-time and historical corn growing degree day accumulations, assess spring and fall frost risk, and guide decisions related to planting, harvest and seed selection. This innovative tool integrates corn development stages with weather and climate data for location-specific decision support, tailored specifically to agricultural production.



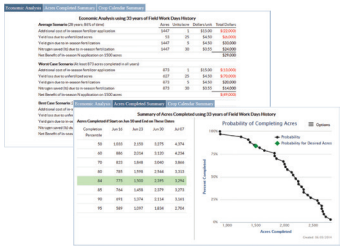
Climate Patterns Viewer DST

Discover how global climate patterns like the El Niño Southern Oscillation (ENSO) and Arctic Oscillation (AO) have historically affected local climate conditions across the U.S. Corn Belt. Climate Patterns Viewer provides simple maps and charts to determine when (by month) and where (by climate division) specific phases of ENSO or AO have influenced temperatures, precipitation and crop yields.



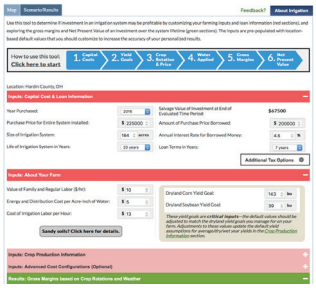
Corn Split N DST

This product can be used to determine the feasibility and profitability of using post-planting nitrogen application for corn production. The Corn Split N tool combines historical data on crop growth and fieldwork conditions with economic considerations to determine best/worst/most likely scenarios of successfully completing nitrogen applications within a user-specified time period.



Irrigation Investment DST

Explore the profitability of installing irrigation equipment at user-selected locations across the Corn Belt. Discover how many years from 1980-2012 irrigation would have been profitable, the expected net present value of investment, and compare unirrigated and irrigated corn and soybean yields under different rainfall conditions. This tool can be customized based on yields and irrigation costs, and provides valuable insight on an expensive long-term investment that may help you cope with variable climate conditions.



useful to usable

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National Institute of Food and Agriculture

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