



Digital Agriculture

Digital agriculture research is focused on the development and integration of technology to provide information to support agricultural decisions. Specifically, the program focuses on a continuous improvement approach for crop production and risk mitigation. The BioCentury Research Farm provides researchers with access to facilities for technology development as well as access to crop production demonstration plots to verify data-driven solutions. The research farm is a hub for Unmanned Aerial Vehicle (UAV) research at Iowa State University and serves as both a development platform for UAV technology as well as a training station to educate producers on the uses of UAVs. Researchers are also actively engaged in the development of new crop sensing technology to precisely measure grain yield. Increased grain yield accuracy supports precise variable rate management plans, which can simultaneously increase profitability and environmental stewardship. The outcomes have been enhanced by the strong public-private partnerships developed with Iowa companies involved in agricultural technology.

Accomplishments

- » Yield technology improvements recognized with a Silver Medal at the 2015 Agritechnica Innovations Exhibit.
- » Eight patent filings and 17 technology license agreements in the past three years have facilitated broad access to technology innovations for agricultural producers.
- » An integrated extension program provides stakeholder education on UAVs, data security and digital agriculture tools.

Future Work

- » UAV-based individual crop health assessment and real-time decision support.
- » Calibration of high-resolution aerial imagery for stable prediction of crop health impacts.

Team Members



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