

The Benefits of UAS Use in Agriculture

The incorporation of UAS is a growing trend in precision agriculture, with the ability to save farmers millions of dollars in time and resources. UAS provide farmers with a cost effective way to spray for pests and diseases, water crops, monitor soil patterns, and check crops for signs of drought and blight. UAS can save farmers the cost of hiring or operating manned aircraft.

- Scientists in the U.S. have begun using small remote-controlled helicopters to [help farmers detect diseases and stress in their crops](#). The helicopters take photographs and measurements that allow farmers to keep an eye on their large fields.
- Farmers in Japan use [more than 2,300 small unmanned helicopters](#) to spray difficult to reach rice fields, while also monitoring the health of the crop.
- Unmanned aircraft with hyperspectral imaging sensors can help [capture information not visible to the naked eye](#) to help farmers track the nutrient and water needs of their crops.
- UAS could be a critical tool as global food challenges increase. UAS help farmers to [lower costs and increase productivity](#) as demand for food increases as the world population grows. UAS and their ability to use technology to monitor crops could allow farmers to work all hours, rather than just during daylight.



Photo: ucmerced.edu

An increasing number of American colleges and universities are advancing UAS technology as a tool in agriculture.

- The Ohio State University developed a [UAS prototype for precision agriculture](#) and displayed it during a three-day Farm Science Review in September 2012. "Monitoring and recording plant health, water usage and pesticide dispersal will allow for the creation of a historical database which farmers might use to project future crop yields and soil health," said Matt McCrink, a Ph.D. student at OSU.
- Researchers at Kansas State University are using UAS to [create precise maps of nitrogen deficiencies](#) that can be fed into Global Positioning System units mounted on fertilizer applicators, providing better data than random soil testing.
- At Virginia Tech a research team is using UAS to [detect microbes in the atmosphere](#) that may cause plant diseases. The team plans to use the research to create an early warning system for pathogens that may lead to epidemics.



Photo: cornandsoybeandigest.com