

Five ways unmanned drones could affect the American food supply

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In this photo taken Jan. 20, 2015 file photo, Lia Reich, director of marketing with PrecisionHawk, holds up their agricultural and insurance drone, the PrecisionHawk Lancaster, after an event with the Small Unmanned Aerial Vehicles (UAV) Coalition, at the National Press Club in Washington. Farmers and ranchers are eagerly awaiting the ability to use drones commercially on their land _ technology that could have benefits for consumers, too. Unmanned aircraft could make farmers more efficient by helping them locate problem spots in vast fields or ranchlands. It could mean less impact on the environment, if farmers used fewer chemicals because drones showed them exactly where to spray. Five ways drones could impact the food supply. (AP Photo/Jacquelyn Martin)

Herding cattle. Counting fish. Taking an animal's temperature. Applying pesticides.

When it comes to drones, "your imagination can go pretty wild in terms of what would be possible," says Roger Johnson, president of the National Farmers Union.

This month, the Federal Aviation Administration issued the first permit for agricultural use of [unmanned aerial vehicles](#). Steven Edgar, president and CEO of ADAVSO, says his Idaho-based business will use a lightweight, fixed-wing [drone](#) to survey fields of crops.

Drone technology, already used in other countries, can make farmers more efficient by helping them locate problem spots in vast fields or ranchlands. Increased efficiency could mean lower costs for consumers and less impact on the environment if farmers used fewer chemicals because drones showed them exactly where to spray.

The Association for Unmanned Vehicle Systems International, a trade group, says agriculture could account for 80 percent of all commercial drone use, once government regulations allow it. That could be a while. The Federal Aviation Administration has been working for years on rules that would balance the desire for commercial flights of small drones with the need to prevent collisions involving manned aircraft.

Five ways drones could affect the food supply:

SCOUTING FARMS

The first agriculture drones are looking at massive fields of crops to scout out where crops are too wet, too dry, too diseased or too infested

with pests. They can help farmers count plants or measure their height. Farmers can now use satellite technology, but it's slower and less detailed than images from low-flying drone.

"This is about getting the most productivity from every square inch of a farm," says ADAVSO's Edgar.

Alabama farmer Don Glenn said he would buy a drone or use a service that provides drone surveillance on his farm of corn, wheat, soybeans and canola. It's hard to survey corn fields when they are 8 feet to 10 feet tall, he says.

Drones can carry different tools, including high-resolution cameras, infrared sensors and thermal sensors. Ground-penetrating radar could even measure soil conditions.

APPLYING CHEMICALS

Once the land is surveyed, farmers could use that data to narrow the areas that need treatment. If a plot of farmland is infested with weeds, for example, a farmer could spray a small amount of herbicide just in that area, instead of an entire field, to kill them. Farmers hope that they eventually could use drones to do the spraying.

Kevin Price of the Iowa-based drone company RoboFlight Systems says that kind of precision would put farmers at a huge advantage, helping them reduce the costs of chemicals and their application.

PLAYING COWBOY

The National Farmers Union's Johnson says his father used to fly a plane over his ranch and his neighbors' to spot escaped cattle when he was growing up in North Dakota. That's something a drone could do with far less money and effort.

Lia Reich of the UAV manufacturer PrecisionHawk says the company's drones can use thermal sensors to take the temperature of cattle. The data comes back as bands of color, and "if all of the cattle look green and one looks dark purple then that one has a higher temperature," she said.

Drones could help ranchers count cattle, disturb pests that are aggravating livestock or even apply insecticide to an animal.

FINDING FISH

A University of Maryland project is developing drone technology to monitor fish in the Chesapeake Bay. Matt Scassero, the project director, says the idea is that a laser-based sensor mounted on a drone would allow scientists to see through the water and measure the size of a school of fish. Researchers could ascertain the conditions of the water, too.

Some drones can land on water, making it possible to measure water quality, as well.

REVEALING SECRETS

There are downsides for farmers. Documentary filmmaker Mark Devries has used an unmanned vehicle to fly over large commercial hog

operations and film them. He wants consumers to see the buildings full of animals and huge manure pits.

The drones "allow for close-ups and vantage points that satellites and airplanes cannot easily obtain," Devries says.

R.J. Karney of the American Farm Bureau Federation says there is a "major concern" about those kinds of films and his group intends to work with the Obama administration and Congress to address it. He says such films are not only a privacy violation, but can put [farmers](#) at a competitive disadvantage.

Still, the agriculture industry sees the advantages of drones as far outweighing the disadvantages.

"We're concerned about falling behind other countries" as the FAA delays, Karney says. "Farmers are anxious to see where this can go."

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