



AERIAL SCOUT

Remote-controlled plane helps diagnose crop problems so you can take action during the growing season.

BY SHERRY COLLINS

PHOTOS: GEOFF CRIMMINS

A change in perspective is adding to a Kendrick, Idaho, farmer's bottom line. Robert Blair, who farms 1,500 acres, is using an Unmanned Air Vehicle—or UAV—called CropCam to scout fields. The UAV has a wingspan of 8 feet, weighs just 6 pounds and runs a preprogrammed flight path or is flown with radio controls.

"In 2004 I flew in a small airplane, saw my fields and realized how important aerial images can be during the growing season, especially if they're geo-referenced," says Blair.

However, there were significant drawbacks to the flight: two weeks advance scheduling, images unavailable for weeks and expensive—\$9,000 for 1,500 acres. Blair was after something much faster and cheaper.

QUICK TURNAROUND. He found it with the CropCam, which uses an off-the-shelf consumer camera, making the images available immediately after the plane lands and at a much higher resolution than satellite images.

At a cost of \$10,000 for the plane, camera and software, it's nearly cheaper than a single small airplane flight, and Blair can run it anytime he wants.

Blair is so impressed with the results he has started a business selling the UAVs (www.pinecreekprecision.com).

The Idaho grower has collected GPS data on his farm for the past four years with a yield monitor and soil tests. He used the information to implement a variable nitrogen application, saving \$20 per acre on winter wheat.

But CropCam was the missing link to make the data useful during the growing season, he says. By flying CropCam every two weeks for scouting, he can make adjustments managing his crops. Blair expects the UAV

will double his crop input cost-savings in the next two years.

"If you're spending \$20 per acre for chemical application on a 100-acre field but really only need to treat 20 acres, that's a potential savings of \$1,800," says Blair. "If you have to spray for broadleaves, grasses, disease and use a foliar fertilizer, that savings just keeps adding up."

Blair is working with Larry Lass, a support scientist at the University of Idaho, to ground truth into those numbers. Lass is focusing on the potential agronomic and economic benefits.

"CropCam is affordable enough that a single farmer or small cooperative of farmers could use it to enhance their decision-making," says Lass.

However, he cautions, it's not a total replacement for knowing what's going on at ground level. You need to match the colors on the photo to GPS locations on the ground and know that's where you're having your Canada thistle problem, for example.

Blair believes CropCam will help farms of all sizes improve their bottom line. It could be especially helpful for increasing net profit on smaller farms because they don't enjoy the economies of scale of the large operations.

"Technology is what's going to save the small farmer in the U.S.," says Blair. "It has to be the norm for farmers to stay in business, and it's going to keep future generations coming back to the farm." ●



A digital camera mounts onto Robert Blair's plane.