

## **Bret Chilcott – AgEagle 2**

This is Kansas Profile. I'm Ron Wilson, director of the Huck Boyd National Institute for Rural Development at Kansas State University.

Where are your data? These days, I am told that my data are in what the techies call “the cloud” – wherever that is. Today, in the conclusion of a two-part series, we'll learn more about a company which is gathering agricultural data by going up to the clouds – and I mean that literally. It's today's Kansas Profile.

Last week we learned about Bret Chilcott of AgEagle, a company that is producing robotic aircraft for applications in agriculture. Typically, this consists of an unmanned flying wing carrying a near-infrared camera, software to process the data, and a launching system.

Farmers and agronomists are using these systems to fly over fields and assess growing crops. The near-infrared camera doesn't take conventional pictures, but rather detects infrared light which indicates the state of plant life.

“When a plant is healthy, it will reflect lots of infrared light,” Bret said. “Bare ground or a more stressed plant will tend to absorb infrared light.” As the robotic aircraft flies over the field, its near-infrared camera will detect how much light is being reflected and will plot the results on a map.

“There are two ways these are being used,” Bret said. “One is to create a prescription map for the purposes of precision agriculture,” he said. Once the map has been created, these readings enable precise, computer-controlled treatment of fertilizer or pest control. The second use is to monitor events. “We have seed corn companies who are flying their fields weekly,” Bret said. That way the seed company can stay, um, right on top of any developments in the growing crop. For research applications, the flying wing carries a more sophisticated sensor.

AgEagle products work very well with precision agriculture systems. The robotic aircraft data can immediately identify stressed plant populations and transmit that data to a farmer or agronomist. This can indicate insect infestations or need for fertilization, allowing applications of products in the precise locations and amounts where they are needed. Compared to mass distribution of chemicals, this saves input costs and puts fewer chemicals into the environment.

How did the company get the name AgEagle? “Our customers came up with it,” Bret said. He brainstormed several possible names and then asked members of the Kansas Ag Research and Technology Association to vote on them through a Google survey. AgEagle was the winner. The company logo was designed and selected in similar fashion.

Technology in this area is rapidly changing. The company's first product, AgEagle1, had a data card which could be removed immediately upon landing. Now the company has launched a newer product called AgEagle Rapid which can be remotely controlled and which can instantly and wirelessly transmit data from the air. “You can use your Iphone or Ipad to create a flight plan,” Bret said. The data from the scan go into the proverbial cloud.

“An agronomist can sit in his truck and download the data in real time,” Bret said. “We can check crop conditions now and begin applying product immediately, precisely where it is needed.”

AgEagle is literally selling these products all over the world. Many are sold in Kansas and in the corn belt, but they have also gone as far away as New Zealand, Chile, Australia, Brazil, and England. That's remarkable for a company based in the rural community of Neodesha, population 2,806 people. Now, that's rural.

Bret Chilcott has, um, high ambitions for his company. "AgEagle is doing for robotic aircraft in the ag sector what Steve Jobs and Bill Gates did for computers," Bret said. "We have new products in the pipeline such as smaller wings, bigger wings, helicopters and more. Someday we will be applying chemicals with a UAV," Bret said. For safety purposes, the company is also working on a device which will divert the ageagle from conventional, full-sized cropdusting planes.

For more information, go to [www.ageagle.com](http://www.ageagle.com).

Where are your data? Are they in "the cloud"? We commend Bret Chilcott and the people of AgEagle for making a difference with technological entrepreneurship. This company's products can literally reach up to the clouds and benefit people down on earth.

For the Huck Boyd National Institute for Rural Development, this is Ron Wilson with Kansas Profile.