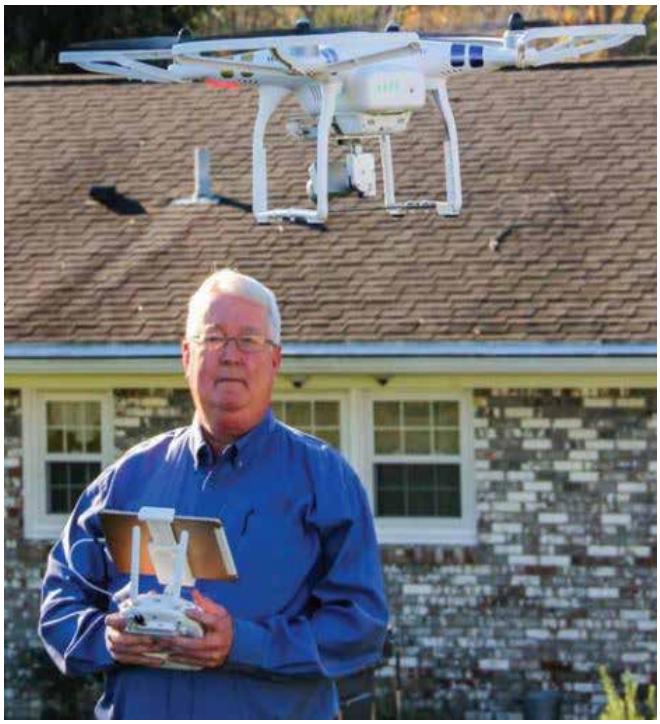
Technology on the Farm

By Tim Thornberry, Kentucky Farm Bureau News



While there are some methods of farming that have changed little over the years, such as in tobacco production, there is no doubt advanced technology is changing the way producers grow their crops even in those Kentucky tobacco fields.

Whether it's through the use of modern equipment or plant genetics, farmers are more productive than ever and are gathering a toolbox full of new technology tools to help them in their efforts to be as successful as possible.

Kevin Jeffries, along with his brother-in-law Mike McCall and nephew David McCall, operate Grand Meadow Farms, a grain and cattle operation in Oldham County. He has found a great use for unmanned aerial devices better known as drones.

"We became interested in this type of technology about two years ago and now use them extensively," Jeffries said. "For instance, in the spring, when we are planting, we use one to fly over the fields to look for problems."

He noted that the drones can detect an issue that might not have otherwise been noticed, something that can help prevent yield loss later in the year.

"In agriculture, the infrared spectrum available on certain cameras is very important because you can see the different color reflections off the crop and that will tell things like if there is a nitrogen problem or if phosphorus and potassium levels are not right," said Jeffries.

Spotting those color shifts within the crop is just one example of what some of the drone technology brings to producers; something not visible with the naked eye. Jeffries pointed out that many problems visible through aerial detection may have gone un-noticed even by walking the field.

Another use of the drones, for Jeffries, has been to check for crop damage caused by wildlife.

"We discovered some areas that needed replanting this season because we found deer damage in some of our soybeans," he said. While some of the drones available on the market can be costly, Jeffries said their use can make an operation more cost effective in finding issues before they cost the producer money.

Drones, while getting much of the marketing attention, aren't the only forms of high-tech devices being used by farmers. According to information provided by the American Farm Bureau Federation (AFBF), "precision agriculture technologies" are used by about 60 percent of U.S. farmers and ranchers.

"GPS and auto-steer guidance systems are two types of precision agriculture used to increase crop yields, lower costs and reduce chemical use, which benefits the environment," noted AFBF. "The two types of technology work together, helping farmers identify precisely where to plant seeds (and how many) and if needed, apply variable rates of pesticides and fertilizer."

And it appears the surface is just being scratched as new technology emerges constantly.

Drone use, for example, is growing and new models can do more and more. Last year, federal approval from the FAA came for a particular drone model capable of carrying payloads such as fertilizer. Crop spraying by way of aerial systems has been used in other countries such as Japan but this action marked the first for the U.S. Proponents have long contended that this type of fertilizer or pesticide application is more cost effective and precise from a logistics standpoint.

Jeffries, who currently serves as vice-president of Oldham County Farm Bureau, said aerial applications of fertilizers or pesticides from drones would greatly benefit farms which are located near more urban areas. He has spoken to many groups about the use of this technology including participation in a panel discussion at the 2014 Farm Bureau Annual Meeting.

Jeffries acknowledged that while multiple producers have invested in this type of technology, many have been waiting to see what further action or regulations would be taken by the Federal Aviation Administration (FFA) regarding drone use.

The FAA has set forth its first announcement of regulations that pertain to drones. The agency announced, "a streamlined and user-friendly web-based aircraft registration process for owners of small unmanned aircraft weighing more than 0.55 pounds (250 grams) and less than 55 pounds (approx. 25 kilograms) including payloads such as on-board cameras."

"You have to be safe with these and avoid other aircraft and areas that prohibit their use but for use on the farm, this and other types of advanced technology could prove to be a milestone in agriculture production," Jeffries said. "We are always trying to become more efficient and this technology will allow us to be just that."