

2025 WINTER CONFERENCE SPEAKER PROFILE DUANE DAVIS

Put Drones to Work on Your Farm the Easy Way

While there's been a lot of talk about mysterious drones over the East Coast and beyond, the real news in agriculture is how drones continue to revolutionize crop production and help farmers boost their profit potential.

"We've come a long ways in a short time," said Duane Davis, founder of SkyDronesUSA, an Iowa-based distributor of drones and drone accessories. "It's not uncommon for today's drone technology to help you save 50% with crop inputs, while being a better steward of the land."

SkyDronesUSA has evolved as technology has evolved. "When we started in this business 14 years ago, we were strapping cameras on the belly of the drone," said Davis, who will speak at the 2025 ProfitProAG Winter Conference in Albert Lea. "Then it would take days to 'stitch' all the images together in software to make the data useful. The capabilities of today's high-tech drones have gone far beyond that."

SkyDronesUSA, a veteran-owned, family-operated business with more than 40 years of consumer electronics experience, specializes in unmanned aerial vehicles (UAVs) for agricultural use. AnswerAg, a partner of SkyDronesUSA, helps optimize applications (from cover-crop seeding to foliar feeding and other inputs) and multi-spectral mapping, which helps farmers and agronomists spot areas of nutrient deficiencies, weed pressure and disease challenges.

"You can watch the health of your crop throughout the growing season and determine where you can cut back on inputs and where you need to add more," Davis said. "The data gathered by the drone also becomes a valuable record to help you track the changes you make and fine-tune your farm management year after year."

The precision inherent with this technology allows much more accurate, judicious use of inputs. "We can do spot-spraying at a very low rate, if that's the best solution," Davis said. "We can treat 20 acres, for example, instead of the whole 80-acre field."



"Tiny differences in management can lead to overwhelming differences in output and profitability."

- Dr. Jim Ladlie

Drones can also provide better coverage and less risk of drift. “Drones fly about 12 feet over the corn tassels and can fly even closer at the V2 or V3 stage,” said Davis, who added that drones also offer advantages in terms of safety and insurance issues, compared to crop-duster planes.

Covering more acres faster

While drones aren’t new tools, the technology is advancing at a rapid rate, making it much more viable for farmers. “Today’s drones can apply foliar fertilizer, dry fertilizer, crop scouting, cover-crop seeding and crop-protection products,” said Davis, a lifelong aviation enthusiast and Vietnam veteran who was a crew chief on fighter aircraft during his military service.

It helps that the FAA approved a number of new regulations in 2024. Drone pilots now can legally fly their drones at night to apply fertilizers and crop-protection products. (This is a plus, since there’s usually little or no wind at night.) New FAA regulations also permit swarming, where multiple drones operate at the same time and cover more acres quickly. “Also, you can now fly drones out of the line of sight,” said Davis, who noted that GPS and RTK satellite technologies guide the drones.

Some of the latest, most powerful drone models can go 40 miles per hour. “These drones can generally cover 50 to 60 acres an hour, although you might be able to cover 70 acres an hour on a good day,” said Davis, who added that large, spray drones cost roughly \$30,000 to \$45,000.

About 60% of the farmers Davis interacts with choose to buy their own drone and fly it themselves, while about 40% want to hire AnswerAg to do custom work. “Some farmers don’t want to go through all the steps to get licensed, and that’s fine,” said Davis, who noted there are more registered drone pilots than commercial pilots, according to the Federal Aviation Administration (FAA). “We’re here to help, whether you want to buy a drone and need training, or you prefer custom application services by our partner AnswerAg.”

“This technology is only going to get better”

Drones offer timely applications of fertilizer and crop protection products. “You can fly when ground rigs might not be able to go, due to wet soil conditions,” Davis said.

Not only does this help control soil compaction, but it also helps protect the crop. “The national average is 7% damage when ground-rig sprayers run over crops,” Davis said. “Farmers tell me it’s way worse than 7%, though.”

In dry conditions, the big tires on ground spray rigs kick up a lot of dust. “When the liquid being applied mixes with that dust, the heavy particles fall to the ground, which doesn’t help the plants,” said Davis, who noted that plugged spray nozzles can also create challenges.

If you want to increase your profit margin, it’s time to take a serious look at drone technology, Davis added. “Drones are here to stay, and this technology is only going to get better. This will be a game changer for agriculture going forward.”