

## **Charged Up**

**If the EPA restricts drift, electrostatic sprayers could become more popular.**

By Jim Patrico

If the EPA introduces new restrictions on chemical application drift next year, Paul Knecht's phone could get really busy. Knecht is an AGCO regional sales manager who markets the Energized Spray Process option for Spra-Coupe. He says the ESP system-in which spray particles are given an electric charge-can reduce spray drift by up to 30%, making it a great way to comply with anti-drift regulations.

The technology has been around for years. But sales have generally been limited to growers of high-value crops, such as vegetables, who can afford the \$20,000 price tag for ESP. If the EPA puts restrictions on drift, then cotton, corn and soybean growers would have a greater incentive to buy ESP.

"(New EPA regulations) would help us," Knecht says. "But there are other reasons to buy ESP. For one thing, it gives better coverage and can make your chemicals more effective."

Here's the theory behind ESP: Before a chemical solution becomes spray, it is given a 40,000-volt charge that has the opposite polarity of the target plants. Since opposites attract, the charged particles cling to the plants on both the top and bottom of the leaf. This reduces drift and puts the chemical in a better position to work. When the chemical is an insecticide, the spray hits insects hiding on the underside of leaves in a way that conventional sprayers cannot.

(Electrostatic Spraying Systems Inc. of Watkinsville, Ga., has a system that charges spray droplets as they pass through an induction coil at each nozzle. It imparts a 5,000-volt charge.)

Jerry Brightbill of Plainview, Texas, bought a Spra-Coupe ESP in 1998 to use on 4,000 acres of cotton. He liked it so well that he bought another one in 1999.

"You can run the system without the current being on, and you can see normal drift," he says. "But you turn it on, and- boom!-the drift disappears."

Chemical saving, not drift control, is why Brightbill bought the second Spra-Coupe ESP. "It gives you the ability to put more chemical on the plant," he says. It also cuts 20 to 50% of his chemical use.

The Spra-Coupe ESP is not perfect, however. Brightbill notes that he had to go through a learning curve on calibrating and using the machine.

And Knecht says the ESP system requires more in-season maintenance than conventional sprayers. "Dirt can build up on the conductors," he explains.

Mike Schieber of Hamilton, Mo., says maintenance problems are one reason he and his co-op aren't enthusiastic about the Spra-Coupe ESP they bought in 1997 for use on corn and soybean fields. "Keeping it running is hard to do. The thing has merit. But it's not worth the extra \$20,000," Schieber says.

University researchers have studied electrostatic sprayers for at least 10 years, but their conclusions are ambiguous. The Ohio State University Extension Web site says, "Several studies with electrostatic spraying indicated reductions in drift deposits of up to 40%." But, it adds, "more field research and data are needed."

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