OnlineAthens
ATHENS BANNER-HERALD

New applications help company with patented spray system grow

By Chris Starrs | Correspondent | Story updated at 2:10 pm on 2/28/2009


Dodd Ferrelle, owner of SPRAYwell.E.D.D, uses an electrostatic sprayer to disinfect playground equipment of Champions for Children Daycare recently in Athens.

Nasty microorganisms thrive in the locker room of a college football team. That's why several years ago, despite the efforts of the University of Georgia equipment staff to keep things sanitary in the Bulldogs' house, some players faced serious staph infection issues.

Fortunately, equipment manager John Meshad found a solution only a few miles away.

Meshad contacted Watkinsville-based Electrostatic Spraying Systems Inc., which develops devices that utilize electric charges in combination with water-based pesticides, sanitizers, nutrients and disinfectants to provide an even, efficient coating on a variety of surfaces, from strawberry plants to hospital rooms to school buses and tanning booths.

"Things were really bad a few years ago, but they're getting better," said Meshad, who purchased two hand-held sprayers from ESS. "I wanted to make sure (infections) weren't coming from the equipment or from anything that I was responsible for."

Because the liquids being sprayed - in this case, a disinfectant combined with what Meshad called a "sweet-good solution" - has an electrostatic charge, it is able to find its way in every crack and crevice to give the locker room enhanced sanitary protection.

"It's awesome," said Meshad of the sprayers' effect. "And it makes things easier for me, and it's working pretty well because we had no staph infections last year. We spray in the locker rooms, the shoulder pads, the helmets and the equipment. The players have even commented on how nice the locker room smells when we spray. Whatever you put in the tank, it will spread out and stick to anything positively charged."

ESS owner and president Bruce Whiting offered a simple explanation for the electrostatic spraying process, which was developed at UGA by biological and agricultural engineering professor Ed Law and Steve Cooper, a former grad student.

"If you put a mist in a room and it's not (electrostatically) charged, it just falls. If you put an electrostatic charge on the droplet, the droplet will go sideways enough to stick to things," Whiting said.

"It's like rubbing a balloon and sticking it on the wall. What you've done is you've rubbed off the charge and left a negative charge in the balloon, so the balloon will stick to the side of the wall with

nothing else holding it other than the electrostatic charge. We do that same thing, but it sticks there and dries and whatever you spray sticks right on the wall there," Whiting said.

Cooper founded ESS in 1990, primarily as a supplier of sprayers to the agriculture industry. But through the years, the small company (which has between 20-40 employees) has been able to successfully transition into other industries, most notably in tanning beds and in institutional cleaning uses.

The company recently won the Innovation Award at the 2008 EMS Expo in Las Vegas for its electrostatic disinfecting sprayer.

"About a year ago, we had some small hand-held sprayers we built for greenhouses or nurseries. We realized people weren't buying them to spray plants at all, but were buying them to spray schools to remediate mold they didn't want to put more liquid on," Whiting said. "They were buying our sprayers so they could coat the room and kill the mold without leaving a whole bunch of water, which was causing the mold anyway. People were using our sprayers to disinfect schools, or hospitals or hotels and things like that."

In 2000, Cooper and Whiting became partners, and Cooper eventually sold out to Whiting when the company was deeply involved in the tanning booth business and had almost completely turned from agriculture-based products.

"In four or five years' time, we built 4,000 sprayers for tanning booths," said Whiting. "But within a few years, the tanning booth industry was saturated, so we decided to re-focus on agriculture and developed a papaya sprayer and an agave sprayer, among other things."

But when Whiting and his staff discovered electrostatic sprayers were being used as sanitizing agents, the direction of the company changed again.

"That's when we realized we might be a lot more beneficial to the disinfecting and sanitizing industry than for agriculture," he said. "First of all, it's bigger, and second of all, it affects every single person in the world in some way. So we then invented some smaller sprayers that could be pulled around. The new direction seems to have stuck.

"Three years ago, nine out of every 10 calls would have been someone asking for something to help them with a plant disease or a problem with strawberry or grape production. It was all agriculture, and maybe one call would have been non-ag related," Whiting said. "Today, it's probably exactly the reverse. We get one ag call for every nine that have to do with sanitization, disinfecting and mold remediation - things that affect people's health."

ESS sprayers recently were purchased and utilized by a cruise ship to rid the vessel of some offensive odors, and Whiting said 18 sprayers covered 5 million square feet of space in five days, and the odors had been eliminated. The company also has sold sprayers to the Washington, D.C., Metro system, and Whiting has been demonstrating the company's products for Boeing to utilize on their planes.

The company has shipped sprayers to 35 countries already this year and Whiting said sales figures in recent years have ranged from $4 million to $10 million.

And while there's nothing but opportunity in the sanitizing business, Whiting said he's started to take another look at returning to and expanding in agricultural markets as the company has been working on a larger sprayer that can service the large trees in an orchard.

Whiting added that he's been demonstrating the product on citrus orchards in Mexico, where he's been advised that his electrostatic sprayers might be of use in Florida, where orchards are threatened by citrus greening disease, which is said to be the most serious citrus disease in the world.

"They're saying (citrus greening disease) might wipe out the entire market within seven to 12 years," he said. "We get 80 percent of our citrus from Florida. We'd never been able to spray orchards until December, and it looks like we can spray orchards. Previously we'd just been able to spray row crops or things like grapes.

"I'm not saying we can solve their problem. But with our sprayer, you can spray 50 percent of the chemical and sometimes coat the entire tree, so maybe there's a way we can come up with an economical way to spray enough chemical so the grower can afford to do it and it will still do the job for him, going in all the little cracks. We may have something and we may not."

Interestingly enough, there's not a lot of professional rivalry in the hand-held electrostatic spraying industry, Whiting said.

"As far as the small, hand-held sprayers, we never have any competition," he said. "Somebody tried to build something similar in Italy and in China and it didn't work. When I went to meet with Boeing, they said they were going to compare us to two other electrostatic spray companies.

"When they told me who I was competing with, it was two companies that we provided sprayers to. One was a distributor, and I painted his sprayers orange, and the other company's were ones I painted green. It was our sprayers with different logos and different colors. We have a patented process and we're partners with UGA and I never come up against anybody else who can do what we can do."

ESS has, however, developed a partnership with Athens resident Dodd Ferrelle, who owns and operates SPRAYWell.E.D.D., which will utilize the electrostatic sprayers to clean and disinfect nurseries, nursing homes, dialysis services, schools and, as Ferrelle put it, "any public common area where germs congregate and there's a problem with it.

"There's nothing like Bruce's sprayer in the world," said Ferrelle, who's also a well-known musician in Athens. "I got my start from ESS, and Bruce and (ESS engineer) Cameron Hobbs are backing me. The best way to describe how this works is to think about spraying a bathroom. When you spray the toilet, the negatively charged particles completely wrap around the toilet. The particles stick to positive charges, which is everything in the world. Bruce has an amazing product."

Although ESS has remained relatively small throughout its 19-year history, the next several years could be pivotal in terms of large-scale growth.

"The market is so huge," Whiting said. "It's probably outside of my financial abilities to go to all the places that need disinfecting. I'm probably going to have to raise capital or partner with a bigger company this year and I've had several express an interest through the years. ... The investment in our type of company is rather minor in comparison to the benefits.

"This year, I'm probably going to have to play with the big boys. Even though we're a little company in Watkinsville, we have some interesting people we play ball with. We just sold a sprayer to Dole Foods, probably the largest fresh-fruit company in the world. They tested sprayers for their strawberries and we won the contract. It's fun to work with the big boys even though we're just a teeny company in Georgia."

• *For more information on Electrostatic Spraying Systems, Inc., visit* ***www.maxcharge.com***.

• *For more information on SPRAYWell.E.D.D., visit* ***www.spraywelledd.com***.

Reid Murray demonstrates how the large Electrostatic Spraying System works on the back of a tractor.

 Keith King welds a custom-made electrostatic spraying system recently at the Watkinsville Electrostatic Spraying Systems factory.