

Autonomous Spore Sensors Assist With Accurate Decision Making

By Bruce Derksen, Contributing Editor

Diseases reduce yield, waste herbicides and pesticides, and negatively damage plant ecosystems. Many of these challenges stem from fungal pathogens that cause diseases such as gray leaf spot, northern corn leaf blight, stem rot, soybean rust, white mold and powdery mildews.

Scanit Technologies Inc., a California company, is addressing these issues with its new technological sensors and equipment. The Spore-Cam 100 Sensor, essentially a miniature digital microscope, captures the ground truth of actual disease presence in a greenhouse or outdoor field. Using optics and light fusion, it autonomously detects 100,000 to 1 million airborne particles daily. Collected particle data is transferred to the cloud for classification and analysis.

"We capture the most elusive data points in a field to help farmers make a confident decision about whether to spray or not," says company co-founder Jaydeep Rane. "Many farmers make decisions based on the disease triangle, or whether they're likely, or estimates and probabilities of thresholds. With our technology, they don't have to guess. The equipment detects signs of disease when they're still invisible, weeks before they cause physical damage to crops."

Powered by solar panels and batteries for outdoor use or standard electrical grids indoors, the Spore-Cam continuously sucks air through a small inlet. Particles are deposited onto a sticky cassette media inside the component. The images are sent to the cloud for analysis, and the data reaches the farmer through a dashboard, email, text alerts, or integration into an existing management app.

A single outdoor unit, mounted close to the harvest canopy height, covers between 40 and 200 acres. They can be installed at any location for indoor use, even near doorways, to detect spore entry sources. One cam can simultaneously detect up to three or four crop pathogen combinations as farmers often grow crops like corn and soybeans beside each other. For example, each Spore-Cam can detect white mold for soybeans and other corn diseases. They work well with almost unlimited crops, including corn, soybeans, wheat, strawberries and grapes.

"Using our technology to detect diseases,



"With our technology, farmers don't have to guess. The equipment detects signs of disease when they're still invisible, weeks before they cause physical damage to crops," says Rane.

we see 20 to 30-bushel improvements or a 17 percent increase per acre for corn," Rane says. "We also help maximize the one or two sprays farmers complete for the largest impact. It provides peace of mind. Once they've used the data to spray their crops, they can see the spore count decreasing. They know the spray worked, and their decision was right."

The Spore-Cam 100 is commercially available across North America. The data derived from the technology is sold through a flexible subscription model. Interested parties should contact Scanit Technologies through the website or email to determine the best process for their situation.

"The most common method of spore identification is still manual trapping which takes two to seven days for results," Rane says. "Our data is accurate in two to five hours without manual intervention. This allows time to take preventative action and apply less aggressive chemicals, as disease threats are known weeks in advance. It's real-time, accurate, sustainable and better for the environment."

Contact: FARM SHOW Followup, Scanit Technologies Inc., 323 Whitney Pl., Fremont, Calif. 94539 (ph 408-930-1779; info@scanit-tech.com; www.scanittech.com).

Large Stainless Steel Chicken Grills

If you run a catering business or grill chicken for large groups or just your family and friends, check out Stoltzfus Grills.

The sandwich-style grill, which flips for even cooking, is made specifically for leg, thigh, and boneless and skinless chicken pieces. The largest grill (36 by 36 in.) can cook up to 60 lbs. at a time in about an hour, says Matthew Stoltzfus, who sells the grills made locally in Pennsylvania. The method has a reputation for producing great chicken, starting years ago with Stoltzfus' grandfather.

"A lot of grills on the market are on a trailer on wheels. They have lids. This is open, and you can see the chicken cooking. It's collapsible and made of stainless steel so that the grill will last," he explains.

Pins and clamps hold the grates in place, securing the chicken as it cooks with a hot charcoal fire on the ground below. When finished, the lightweight grill collapses for easy storage.

In addition to the large grill, which costs \$1,399, there's a smaller grill, 24 by 24 in., for \$999, and a portable grill, 17 by 17 in., which comes in a bag and is ideal for camping, for \$299.



Pins and clamps hold the grates in place, securing the chicken as it cooks with a hot charcoal fire on the ground below. When finished, the lightweight grill collapses for easy storage.

For customers who want to move the grill or cook on concrete or other hard surfaces, a firebox bottom with casters is available for \$385 (small) and \$455 (large).

Stoltzfus often works with truckers to keep shipping costs down and has sold the grills to customers in several states.

Contact: FARM SHOW Followup, Stoltzfus Grills, 1681 Schaeffer Rd., Schaefferstown, Penn. 17088 (ph 717-376-8469).



Lanoue gave the late 1980s Cushman a new look with Deere colors, emblems and decals. Topped off with a Deere yellow canopy, he outfitted it like a field service truck.

E-Card Gets Custom Makeover

Jeff Lanoue liked the looks of a friend's repurpose of a 36-volt Cushman industrial cart for hunting. "I told him to let me know if he ever wanted to sell it," says Lanoue.

When the friend called 15 years later to ask if he still wanted it, Lanoue jumped at the opportunity.

"He gave it to me, but it needed new batteries and a charger," says Lanoue. "The batteries were \$1,000, and the charger was \$200. It also needed new tires."

Cushman electric-drive industrial vehicles were commonly used in factories. They could easily carry a 2,500-lb. pallet and tow up to 4,600 lbs.

Lanoue gave the late 1980s Cushman a new look with Deere colors, emblems and decals. Topped off with a Deere yellow canopy, he outfitted it like a field service truck. He

mounted a nine-drawer tool cabinet on one side of the rear platform. The other side hosts a variety of motor oil, hydraulic oil and other fluid containers, a grease gun, and pressurized fuel containers previously used in the racing industry.

"It was all for show," admits Lanoue. "The Cushman with its two-wheel electric drive isn't designed to get out in a field."

Lanoue uses the Cushman primarily at tractor shows. "I take everything off so I can use the platform to carry things I buy at the tractor show flea markets," he says. "I've had people ask when Deere made a cart like this."

Contact: FARM SHOW Followup, Jeff Lanoue, 2668 N 1630 East Rd., Martinton, Ill. 60951 (ph 815-530-4502; Kooder78@yahoo.com).



Stor-Loc products come in a wide array of sizes and combinations, from tool cabinets and welding tables to workbenches and supply storage.

Super Tough Tool Cabinets

Stor-Loc tool cabinets are built so tough that you can stand in them. They're assembled from 100% U.S.-made components, right down to the screws that hold them together. The company is so confident in the strength of the cabinets that they come with a 55-year warranty.

"When we display them at shows, we'll pull out drawers and stand in them," says Jeff Lanoue, Stor-Loc. "The drawers have a 400-lb. rating. I'm a 260-lb. guy, and when I climb up in one, people go, 'Wow!'"

Plenty of people have seen Lanoue and other employees demonstrate the drawer's strength. The company markets to farmers, automotive companies, and other industries and exhibits at around 80 shows a year.

Other features they emphasize include all MIG welded corners, steel ball bearings, heat-treated steel rollers and modular drawers for custom designs. If a customer wonders why the company offers a 55-year warranty, Lanoue has the answer. "The company's owner came up with that," says Lanoue. "He figures if a young guy buys a cabinet when he comes out of high school, he'll use it for

at least 55 years."

Stor-Loc products come in a wide array of sizes and combinations, from tool cabinets and welding tables to workbenches and supply storage. "We're in a lot of factories," says Lanoue. "They'll have us redo an entire section with new cabinets. Tool cabinets are our most popular products with farmers."

The popular MM line of cabinets starts at \$3,500 for the MM1, which is 60 in. wide, 30 in. deep, 38 in. high and has eight drawers. The MM15, which has 21 drawers and is 96 in. wide by 30 in. deep and 43 in. high, tops out at \$8,000.

Mobile welding tables start at \$2,500 with the Weld-Stor 1. This model has a single drawer and MIG holders at each corner. It's 48 in. wide, 36 in. deep and 37 in. high.

Stor-Loc products are available directly from the company or can be ordered at a show.

Contact: FARM SHOW Followup, Stor-Loc, 880 N. Washington Ave., Kankakee, Ill., 60901 (ph 815-936-0700 or toll-free 800-786-7562; sales@storloc.com; www.storloc.com).