Free Mapping Software Protects Farmland From Chemical Drift

By Lydia Noyes, Contributing Editor

Mapping tools enable farmers and pesticide applicators to communicate about sensitive crop areas.

FieldWatch, a U.S.-based nonprofit, manages a suite of drift-prevention tools to help organic growers and beekeepers avoid spraying accidents. These mapping tools (DriftWatch, BeeCheck and FieldCheck) enable farmers and pesticide applicators to communicate about sensitive crop areas. Organic growers and beekeepers can voluntarily register their locations, and applicators can then check the map before spraying.

The DriftWatch mapping tool was created around 2008 in response to Red Gold Tomatoes of Central Indiana. Tomatoes are highly sensitive to chemical drift from GMOs, which has had a significant economic impact. Chemical drift and mixed-up coordinates were to blame.

"Growers lost hundreds of thousands annually," says Bob Walters, FieldWatch's President and CEO. "There were lots of lawsuits."

Purdue University offered to map the company's tomato fields using GIS so growers could mark their fields on the map to alert sprayers. The effort proved so successful that the University expanded the tool to include more states and crops.

Today, FieldWatch is the nonprofit that manages DriftWatch and BeeCheck, a similar tool for honey hobbyists. Similarly, FieldCheck is a portal for chemical applicators. It lets them gauge wind speed and direction before spraying, minimizing the risk to nearby sensitive fields. The software is free to users and is supported by the Department of Agriculture across numerous states and by large chemical companies eager to avoid harming organic operations.

"We've been financially stable for going on eight years," Walters says.

The nonprofit operates in 28 U.S. states and three Canadian provinces.

These tools have over 17,000 applicators as registered users, along with 50,000 crop producers and beekeepers. The tools are also useful for roadside right-of-way and mosquito sprayers who want to help protect bees and specialty crops grown near roadsides.

"Organic farmers, as a group, are an easy sell for us," says Walters. "They don't want any drift or residue on their crops."

Currently, the nonprofit's tools are undergoing a major software upgrade to update the infrastructure from 2010, which will take several years to fully implement.

"Our biggest challenge is education," Walters says. "Lots of growers and sprayers have still never heard of the program."

It's a challenge to balance the full schedules of speaking opportunities needed to get the word out about the program, but it's one well worth taking on.

"Feedback is the biggest joy," Walters says. "We feature success stories on the website."

He's eager to spread the word because accounts can help farmers avoid unfortunate miscalculations.

"FieldWatch is the cheapest insurance policy available to avoid chemicals on your land. It's free. It takes two minutes to make an account."

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Does Pledge Keep Leaves Off A Corn Head?

By Lorn Manthey, Contributing Editor

A reader recently sent us this question, so we did a deep dive to find the answer.

A materials scientist explained that leaves and dust stick to metal and plastic machinery parts because of static electricity. Leaves and dust bond to a surface with a positive or negative static charge, much like a magnet attracts metal. The normal action of leaves and residue passing across and over the snouts should keep them from adhering as the machine passes through the fields, without needing any protective coating. Using Pledge might not be the answer.

Pledge is a furniture polish designed to clean and protect. It contains mild solvents and oils that dissolve dust particles. It protects furniture surfaces by leaving a thin layer of oils and silicones that create a smooth, reflective finish. A corn head treated with Pledge may look smooth, shiny and impervious to dust, but it's not. Pledge formulas aren't designed to neutralize static electricity. If not Pledge, what could be used?

The correct answer may be antistatic aerosol sprays. These products neutralize static buildup. They're most commonly used on electronics such as TV monitors, computers and screens on newer vehicles. They can also be used on monitors in tractors, combines, sprayers and other implements with electronic screens. Using them on metal or poly corn heads might be beneficial.

An internet search revealed Sprayon SP610 Anti-Static, which the manufacturer claims neutralizes static electricity caused by friction or atmospheric conditions. It dries instantly to a clear, non-staining film. Electrolube ASA is an antistatic spray for plastic, metal, glass and synthetic surfaces. Zero-Static is an antistatic surface cleaner for electronics and other surfaces. RS antistatic cleaners are available in spray bottles and are suitable for electronics and other surfaces that require static-free cleaning. 3M antistatic wipes come in a canister and are used to wipe surfaces to prevent static cling that attracts dust. Endust is a commercial cleaning spray that prevents dust buildup by reducing static.

We talked to several FARM SHOW readers who haven't had problems with static collecting dust and leaves on corn heads. However, they've said that dust readily collects on windshields, mirrors and the metal or poly surfaces of their machines.

Cleaning glass with Sprayway foaming cleaner is an especially effective deterrent. Spray the product on the glass, then wipe it clean with a microfiber cloth. The product can also be used on metal and poly surfaces.

Another effective product for cleaning glass and creating a water and dust-repellent surface is Rain-X. Best known for use on windshields to reduce the need for wipers in the rain, the product also helps keep windows, mirrors and monitors free from dust. Nobody we know has tried it to prevent dust buildup on metal or poly surfaces. If a reader tries it and succeeds, let us know.

Antistatic products neutralize static buildup. Using them on farm equipment may be beneficial.

When fully operational, the first phase is expected to produce 1.8 million lbs. of produce per year. That would be enough to supply 25,000 people with 70 lbs. of produce per year.

Flare Gas Fuels Food Production

Oil-well gases that are normally burned off are now being used to grow food in greenhouses in North Dakota. The 3 1/3-acre greenhouse is the first phase of a planned four-phase, 14 1/2-acre greenhouse complex being developed by the Mandan, Hidatsa and Arikara Nation (MHA). Native Grow Green (NG2) is located on the Fort Berthold reservation, which produces roughly one-fifth of North Dakota's oil. Revenue from that oil is financing the use of flare gas.

"Oil production often results in a lot of gas that's wasted by flaring," says Mark N. Fox, MHA Nation chairman. "Oil companies use it all of the time for operations and maintenance, but in small quantities. This is the first time MHA has used it."

Fox conceived the idea after reading about the Netherlands' use of greenhouse technology and natural gas to produce heat, power and CO2. The small European country is the world's second-largest food exporter, behind the U.S.

In 2018, Fox led a delegation of tribal business council members, agricultural experts and architects to visit greenhouses in the Netherlands to learn about the technology.

"With our access to natural gas, water and land, a greenhouse project was ideally suited here," says Fox.

When fully operational, the first phase is expected to produce 1.8 million lbs. of produce per year. That would be enough to supply 25,000 people with 70 lbs. of produce per year. Currently, the 30 employees are producing leafy greens, strawberries, bell peppers and cucumbers.

The self-contained, climate-controlled greenhouse is designed to collect rainwater and snowmelt for irrigating the crops inside.

When completed, the full 412,000 sq. ft. of greenhouses are expected to employ 50 people and produce more than 10 million lbs. of food annually. Upon completion, the facility would be one of the largest of its kind in the world.

In addition to the first-phase greenhouse, the complex includes an administrative building, a warehouse, solar panels, an on-site market, an experience center with a multi-use classroom, and a flare gas processing center.

"We have the ability to compress raw flare gas ourselves and process the byproducts, as well as provide power to the electric grid," says Fox. "We're not currently producing fertilizer, but long term, we'll be developing fertilizer as part of our energy development."

Fox acknowledges that achieving a full return on the investment required for the entire project may take 20 years or more. However, he feels it's already paying dividends.

"Our ROI right now is the jobs we provide, being able to provide quality produce to our tribal members, local communities and the surrounding areas, as well as educational aspects," says Fox.

Food is being marketed on and off the reservation and distributed to tribal programs and to some local food banks.

"Other potential distributions we're working towards are with neighboring tribes, military bases and local schools," says Fox. "We're providing quality, pesticide-free, non-GMO produce that's affordable and beneficial to many."

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