"In its most basic form, it takes all frames from the camera in real-time and uses the greenness of the weeds and detection algorithms to pinpoint exact locations," Coleman says.

Low-Cost Open-Source Weed Sprayer Tech Available To Farmers

Guy Coleman, a Ph.D. student at the University of Sydney, developed the OWL, or Open Weed Locator, while examining site-specific weed control and plant and algorithm interactions.

His goals were to create and serve a practical agricultural purpose and help others learn to code.

Using a prototype, he worked with his supervisor Dr. Michael Walsh and colleague Dr. William Salter on refinement and field testing.

"Existing systems were wildly expensive," says Coleman. "The OWL acted as a low-cost entry point for farmers willing to build something themselves."

The OWL isn't a sprayer or mechanical weeder but a self-contained box with a camera and a Raspberry Pi computer. The unit runs detection algorithms and a relay control board to actuate higher-power components like solenoids for spot spraying. It's powered by a tractor or any vehicle's 12-volt system.

"In its most basic form, it takes all frames from the camera in real-time and uses the greenness of the weeds and detection algorithms to pinpoint exact locations," Coleman says. "It then turns on a corresponding relay connected to a light, hydraulic solenoid, laser array, or solenoid for spot spraying."

The current system covers about a 3 ft. width when mounted about 3 ft. off the ground.

Coleman isn't marketing the OWL as a physical piece of equipment but as files and software to download. The system can be built independently and integrated with the software into existing commercial platforms.

He's had substantial interest from Canada and the U.S. and is working with universities to offer more complete OWL kits. The systems are currently in eight different countries.

"As an open-source system, input and use cases differ wildly, but that strengthens the community around the project," Coleman says. "Its strength is in its entirely open development and build process with low-cost, off-the-shelf parts. We're agnostic in terms of use case and welcome and encourage people to adapt it to their own needs."

Components for the OWL unit retail for around $250 USD, depending on the camera/computer model combination, but the cheapest systems would be under $200. The most expensive parts are the spraying components, such as the solenoids, plumbing pieces, and nozzles.

Coleman shares the information at www.github.com/geezacoleman/OpenWeedLocator.

Contact: FARM SHOW Followup, Guy Coleman, (guy.coleman@sydney.edu.au; www.github.com/geezacoleman/OpenWeedLocator).

Spring-mounted arm features a 140-degree range of movement to keep the unit from being damaged by obstacles in the yard.

New 84V Bolt-On Grass Trimmer

For yard care professionals facing larger-scale lawn demands, PECO offers a new, more powerful version of their bolt-on grass trimmers. The Z-Trimmer Pro allows users to trim unruly grass and weeds or edge their lawns while mowing.

Like earlier models, the Pro bolts directly to a 4 by 6-in. flat surface on larger mower decks. It folds for transport and to prevent movement while not in use. The spring-mounted arm features a 140-degree range of movement to keep the unit from being damaged by obstacles in the yard.

"Rather than being powered from the mower's 12-volt battery, the Z-Trimmer Pro comes standard with an 84-volt rechargeable battery and charger base," says Kirby Raines, PECO Lead Engineer. "Like our other trimmers, it's still completely adjustable for either standard trimming or lawn edging."

Raines explains the Pro's fixed line head handles up to .130-in. trim line. The unit is stronger than a commercial gas trimmer as it delivers up to 4 hrs. of battery runtime.

The new trimmer is produced and manufactured in North Carolina and will be available for sale directly from the factory in March 2024.

The list price of the Z-Trimmer Pro is $1,250 plus S&H. A 1-year commercial warranty comes standard.

Contact: FARM SHOW Followup, New PECO Inc., 10 Walden Drive Arden, N.C. 28704 (ph 800-438-5823; peco@lawnvac.com; www.lawnvac.com).

Bin Cover Openers Open From Ground

Ohio farmer Gene Ditmer created a clever way to open and close his grain bin covers. He removed the original covers from three bins and installed them inside 16-in. car rims, then reinstalled them on a king bolt hinge and custom metal frame. Now, using two lengths of 3/8-in., nylon rope, he can open and close the covers from the ground without crawling up a ladder 24 ft. to the roof.

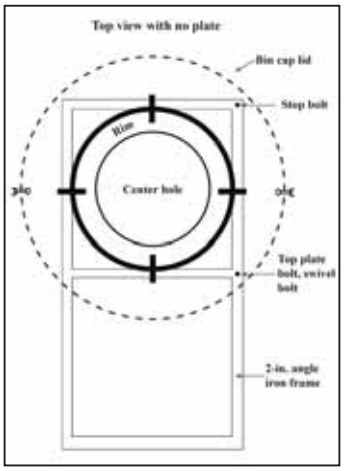
"I'm over 80 years old, and I got tired of climbing up those ladders a couple times a day to open and close the covers," Ditmer says. "I don't want to leave the auger in the hole overnight because rain can get in the grain, and that's a big problem. One day, I had the idea of building a swivel lid that I could open and close from the ground, so I drew up the plans, and sure enough, it worked."

Ditmer cut the center out of a 16-in. dia. car rim and installed the bin cover in the opening. He says the rim provides plenty of support and weight to hold the cover in place. On one side of the rim, he welded a 26-in. by 28-in. rectangular frame made of 2-in. angle iron. He mounted a matching rectangular frame to the top of the bin, then attached the bin cover to the frame. The cover opens and closes by sliding and rotating on a king pin. It nudges against a stop pin when fully open.

To open and close the cover, Ditmer welded 12-in long metal "arms" to opposite corners of the frame, then attached a nylon rope to each arm and tied them off at the base of the bin.

"Now I can open the cover from the ground by pulling one rope, then close it by pulling on the other," Ditmer says. "The first one worked so well I made two more just like it for my other bins."

To prevent the metal from rusting, Ditmer primed the metal pieces and painted them silver to match the bins. "They look just like they're part of the bins," he says. "They provide a moisture-tight seal and save me a lot of trips up and down the ladders."



Drawing shows overhead view of bin opener.

Ditmer says he wishes he would've thought of the idea many years ago but adds, "I guess new ideas can pop up in your mind anytime if you think about the problem long enough." Each opener cost him about $45, with most of the cost in the nylon rope and the steel frame plates. Ditmer keeps his auger about 6 in. to 8 in. above the frame opening so he can easily open and close a cover without raising the auger.

Contact: FARM SHOW Followup, Gene Ditmer, 10710 W. Frederick Garland Rd., West Milton, Ohio 45383.

Drum Smokers Get The Job Done Right

The Hunsaker Vortex smoker offers a quick, portable way to cook barbeque at home. Company founder Mark Hunsaker grew up on a farm in Illinois, where he had opportunities to experiment with metal fabricating and welding. When he worked as an insurance adjuster, Hunsaker spent his nights and weekends building smokers. "Eventually, my wife told me it was time to move the workshop out of our garage," he laughs. "We've expanded three or four times in the 25 years since."

The company began producing its Vortex Smoker about 15 years ago. "A big appeal is its simplicity," says Hunsaker. "The barrel lets you cook hot and fast, not just low and slow. That was a novel concept when we were first releasing it."

Hunsaker buys brand new 55-gal. barrels rather than burning used ones. "In our opinion, that's just a lot safer for a product that interacts with food," he explains. The smoker features high-quality stainless-steel hardware, a design that eliminates internal hotspots, and robust wheels that improve portability. It's well suited to both barbeque beginners and seasoned pros.

The Vortex comes in five colors of heat-resistant paint (flat black and cast iron, and gloss black, red, or blue) and your choice of one or two cooking grates. It includes a charcoal basket system to create a smokey sauna that evenly cooks and flavors meat. The floating hinge lid system makes it easy to check on food without losing heat, and the unique floor-mounted foot-control air intake system makes controlling the internal temperature easy. It's also possible to hang meat in the smoker. "This maximizes its capacity," he says. "We've seen guys fit 24 racks of ribs in one barrel, easily a dozen chickens." Hanging also allows for better control of air temperature for even cooking. "You can crank up the heat without risking the meat."

A floating hinge lid system makes it easy to check on food without losing heat, and the unique floor-mounted foot-control air intake system makes controlling the internal temperature easy.

Each Vortex Smoker ships preassembled. Pricing starts at $999 per 55-gal. unit. Hunsaker also manufactures a DIY drum smoker kit ($349) for those who already have a 55-gal. drum and want to transform it into a smoker at home.

Contact: FARM SHOW Followup, Hunsaker Smokers, 5812 Brown Station Rd., Columbia, Mo. 65202 (ph 573-554-4368; www.hunsakersmokers.com).