"I combined my two hobbies of building robots and farming," says Pancoast. "I see coyotes chasing deer and decided to try and duplicate that."

Coyote Robot Chases Deer From Fields

Earl Pancoast was fed up with deer feasting on his soybean fields, so he invented Deer-Dash, a robot designed to keep deer on the run as it travels around the field with a coyote decoy on its back.

"I've had entire fields cleaned out by deer," says Pancoast. "They walk down the row, snipping off the beans. With as many as 50 deer in a herd, it doesn't take long to mow a field down to nothing."

Building a robot to chase the deer away was a natural solution for Pancoast. His combat robots have appeared on Discovery Channel's BattleBots. His first Deer-Dash prototype was based on his Bale Spear combat robot and used many of the same components.

"I combined my two hobbies of building robots and farming," says Pancoast. "I see coyotes chasing deer and decided to try and duplicate that."

He ran trials with the prototype and its plastic coyote in 2021. Even with breakdowns and difficulty getting parts, results were positive enough to do an upgrade.

"I compared two fields that were treated the same with the only exception being the Deer-Dash operating in one," says Pancoast. "It improved yield in that field by 10 to 15 bushels over the control."

This year he is bringing a new and improved version to the fields. It is 30 by 34 in. and about 2 ft. tall, before adding the decoy. The 13-in. tires are from a garden tiller with other parts salvaged when possible. It has a 3/16-in. aluminum shell body and a "dressed-out" weight of about 150 lbs.

"I use drone autopilot software and hardware and a Pixhawk flight controller," says Pancoast. "Wheelchair motors and speed controllers drive it. Last year the battery lasted for about 2 1/2 hrs. The new one can run for up to three days before needing a recharge."

The Deer-Dash runs around the field based on programmed GPS waypoints, resting periodically for up to 2 1/2 days. Pancoast is working on a charging pad where the robot can rest and recharge. The intermittent nature of the robot's action, combined with the coyote decoy, is key to its success.

"Rabbits and groundhogs quickly realize the Deer-Dash isn't after them," says Pancoast. "However, when deer see a coyote, they start running and will be three properties over before they stop."

Pancoast is waiting on this year's results before going into production. With prices on the rise, establishing a price is also a challenge. He expects initial units could run around $6,000.

For some, that may be quickly recovered if Deer-Dash works as expected. Pancoast has been talking to an Oklahoma farmer who reports deer costing him $300 per acre.

"I'm trying to evaluate the market," he adds. "I don't know how many people have enough of a problem with deer to spend money on a solution, or how much they would be willing to spend."

Pancoast encourages FARM SHOW readers to share their interest and the extent of their deer problem with him.

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With the press of a button, honeycombs are pulled out sequentially, and lightly brushed with two rotating stick brushes that carefully and humanely remove the bees. The honeycombs are then stacked in sequence awaiting the honey harvest.

Robotic Beehive Extracts Combs With The Push Of A Button

Daesung, a leading company in automated farming systems based in Korea, has created the Smarthive Hive Controller, a portable, intelligent beekeeping technology that safely removes honeycombs from a hive, carefully brushes off the bees and then stacks them.

Traditionally, this process is done manually using up to five people for 100 beehives. With the Smarthive, the task requires less than half the normal labor. Instead of tired workers, the machine does all the heavy lifting. Operation times are also faster with the controller completing the procedure on about one hive per minute.

The aluminum Hive Controller weighs approximately 18 lbs., is adjustable and fits easily onto various sized hives. A 4 1/2 lb. battery pack powers the equipment, recharges in 2 hrs. and lasts long enough to complete about 50 hives.

To carry out the processing, beehives are uncovered, and the controller is placed on the top. With the press of a button, honeycombs are pulled out sequentially, and lightly brushed with two rotating stick brushes that carefully and humanely remove the bees. The honeycombs are then stacked in sequence awaiting the honey harvest.

With its simple operation, Daesung claims its intelligent processor can be used by all beekeepers, from beginners to experts.

The Smarthive is not yet available in North America.

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Flex Stalls, Bedding Savers Boost Milk Production

Bedding Savers plastic mats laid over sand keep the sand in place for level beds in freestalls while reducing stall maintenance. Flex Stalls plastic tubing guides cows into position without injury, increasing laying time and production.

"My dairy farm customers complained about problems bedding with sand," explains Gail Foxworthy, Foxworthy Supply. "There are problems with fixed, steel stalls as well, especially with fresh heifers or cows that are new to the herd and the barn. If they get excited, they can get hurt."

Foxworthy found answers to both problems. Flex Stalls from Cow-Welfare, a Danish company, were the answer to the stall problem. The stalls are made from a soft, flexible plastic that directs the cow's movements without confining her if a problem occurs.

Tubes in line with the stall encourage her into her own space. Upper and lower tubes running perpendicular to the cow and at the front of the stall, help guide her head as she lays down and gets up.

Jason Hoogenhous of HyHuis, the U.S. Cow-Welfare distributor, points out the adaptability of Flex Stalls. "The design is suitable for calves and cows from small and large breeds," he says. "Both the vertical plastic pipe and the neck rail can be adjusted to the needs of the cow for optimal conditions, benefitting the cow and the farmer."

While the Flex Stalls are a more recent addition to Foxworthy's product line, the Bedding Savers were introduced in 2014.

Stalls are made from a soft, flexible plastic that directs the cow's movements without confining her if a problem occurs.

The 1 1/2-in. thick, grid-shaped mats are laid in the stalls and covered with sand. The mats prevent the cow from kicking out sand before laying down.

The $99 mats are 2 by 5 ft. in size with legs on the bottom side to anchor them in place. The mats are made from post-industrial rubber scraps.

"We buy tractor trailer loads of rubber waste otherwise headed for landfills," says Foxworthy. "Once in place, the mats reduce the need for diesel fuel otherwise spent maintaining and disposing of sand. Fewer trips across the field also reduce soil compaction and wear and tear on equipment."

Foxworthy has surveyed customers and found they can spend $100 per year per stall buying sand and maintaining it, raking and grooming and refilling. Then they spend another $100 a year removing sand from the lagoon that has settled out and spreading it on their fields. Eliminating those costs increases profits.

"Our customers see a two-year payback on the mats, and we project at least a 30-year life span," says Foxworthy. "We've had mats in place for eight years, and they show no wear. If it does occur, we expect to see it on the back half of the mats, which can be rotated with those in the front of the stall."

HyHuis has largely marketed Flex Stalls west of the Rockies. Foxworthy is now marketing them to the east. Meanwhile, HyHuis is also distributing Bedding Savers west of the Rockies. Like the Flex Stalls, it is all about adaptability and cow comfort. Hoogenhous notes that Bedding Savers can be adapted to a wide variety of freestall bed designs from partial front, center and rear to full bed coverage.

"Cow comfort is important," he says. "We have nearly two decades of research on Flex Stalls. With them in place, cows spend an additional hour and a half laying down per day, get deeper sleep and produce 3 to 5 lbs. more milk."

Contact: FARM SHOW Followup, Foxworthy Supply, 4650 20 Mile Rd., Kent City, Mich. 49330 (ph 616-292-3755; info@foxworthysupply.com; www.foxworthysupply.com) or HyHuis Development, 901 E. Broadway Ave., Atwater, Calif. 95301 (ph 866-490-0987; Jason@hyhuis.com; www.hyhuis.com).

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