

Robotic Chicken Coop Moves Automatically

Daniel Badiou can leave for a week at a time knowing his broiler chickens are safe, fed, watered and getting fresh pasture 4 or more times a day. His robotic chicken coop - called Rova - carries a week's worth of feed and water. Badiou can check on the chickens or control Rova from his smartphone from anywhere.

"Rova is 100 percent solar-powered, providing energy for the drive wheels, computer and other electronics," says Badiou, Ukkö Robotics. "If it is cloudy, it can operate for up to 5 days on battery power alone. Because it is fully automated, I spend only 5 to 10 min. a day checking on the chickens in person or on smartphone."

The goal of Badiou and Katrina Jean-Laflamme, mechanical engineers and partners in Ukko, is to simplify livestock production with automation, starting with pastured chickens.

They have loaded the self-propelled coop with GPS, wireless sensors and even a camera. He reports that there are redundancies on everything. The sensors track temperature, wind speed and direction and barometric pressure.

Side awnings raise to provide shade and air flow when it is hot or lower to protect against wind and rain. When it is cold, they close up to retain heat. A driving rain on one side closes slats there, while slats on the other sides remain open. A poly skirt with an electric fence wire protects against predators.

"Rova can move forward, backward or 90 degrees to either side," he says. "When it gets to the end of one programmed swath, it can move to the side and travel back on the new swath."

Badiou can control all aspects of the system from a smartphone or other device. It even warns him when it's low on feed or water. He can view the birds to check on them. If the wireless fails, there is a control panel on the side of the coop.

Everything with the automated system is designed to maximize chicken comfort and safety. All they have to do is eat, sleep and grow. Badiou says the chickens quickly grasp what is going on with their robotic shelter.

For safety sake, the unit signals a move by beeping to the side of the move. Badiou reports that the chickens quickly learn what the sound means.

"The chickens all run toward the beeping wall, anticipating the move to fresh grass and bugs," he says.

Badiou has been building and operating the robotic units on the family dairy farm for the past 3 years. He started with a wood



Solar-powered robotic chicken coop moves automatically and carries a week's worth of feed and water. It can be controlled from a smartphone. "Because it's fully automated, I spend only 5 to 10 min. a day checking on my chickens," says Daniel Badiou.

unit for 100 birds and then built one mostly out of metal the following year. Last year, he built a smaller version for 15 to 20 birds.

"We just finished building a 12 by 24-ft. unit that will handle 200 birds with roughly 1 1/2 ft. of space per bird," says Badiou.

The robotic chicken tractors are not cheap, but he expects the larger unit to pay for itself in 3 years. He plans to raise 1,000 chickens

in the robot coops this year. He expects to price the smallest unit at about \$10,000 and the largest unit at about \$40,000.

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