



Worcester Holdings LLC acquired five DJI Agras T30 drones to apply herbicide to the balsam-fir woodlands the company manages for Worcester Wreath in Washington County. This

year marks the first time that Worcester Holdings is applying herbicide by drone. (Courtesy DJI)

Down East company using drones to benefit balsam-fir growth

By Brian Swartz
County Wide Free Press

HARRINGTON — Drone technology has reached Washington County's balsam-fir forests. Worcester Holdings LLC started flying drones in mid-August to apply a herbicide to woodlands that grow balsam fir for Worcester Wreath, a major Down East wreath manufacturer. The drone program is a first for Worcester Holdings, according to forester and master applicator Alex Cammen. The company manages the woodlands for Worcester Wreath.

"This is us really getting the drone program started and up and running. There is one other drone pesticide-application company" that recently started doing contract work for other landowners, he said.

"There are a number of other drone companies in the U.S. They've been commonly used for crop spraying for the most part," Cammen said. "The laws in the U.S. have been fairly restrictive. In other countries around the world, especially in Southeast Asia, they have a lot more drone pesticide spraying. It's just much more common."

Worcester Holdings purchased five DJI Agras T30 drones, each of which "can hold 30 liters [7.93 gallons] of some pesticide [or herbicide] mix or water, and that's where the '30' comes from," said Cammen.

The drones apply glyphosate, "the most commonly used herbicide in the world," he said. At this time of year, "the balsam fir isn't very affected by it.

"It's going to kill the other hardwoods mixed in with" balsam firs, "primarily the red maples and the aspen. Those hardwoods otherwise can overtop the [balsam] fir and compete for sunlight, nutrients, and water," Cammen said. "This allows us to use our land more efficiently."

Hans Ruediger, a Worcester Holdings employee, is the firm's only fully licensed drone operator. "His only job right now is flying the drones. We're hoping to get more operators in the future," said Cammen.

Worcester Holdings used hand crews in the past to apply herbicide. Then the company "for the most part used trailer-mounted spray units that we created ourselves. They drive between the rows of balsam and spray the chemical over the trees," Cammen said.

The company has also hired a contractor to apply herbicide with a helicopter or a crop duster. A helicopter will supplement the drone spraying in 2023. "Our goal for this year is around 3,000 acres, between us with the drones and with the helicopter we're going to be contracting," Cammen noted.

Drone spraying offers several advantages "over ground spraying," he said. "It is faster, and it's cheaper, and it's cheaper for us, but then we also don't have to drive over the soil. Our ground sprayers are heavy equipment; this allows us to stay off the soil completely, and compared to hiring helicopters, it's cheaper and more reliable for us."

As with agricultural crop spraying done in the United States and elsewhere, each drone flies a pre-programmed, automated flight path. The drones "can much more easily avoid a small stream because we can see those and plan for those ahead of time by using satellite imagery" and state-provided maps and information about "where the wetlands and streams are," Cammen said.

"I've been laying out the spray boundaries," which encompass "the buffers around the streams or wetlands or cabins on our sites or trails," he said. The technology "will automatically create the travel lines that you will be spraying" so that rather than fly over a stream while spraying, a drone "would turn around and come back" before reaching the stream. The drones use GPS.

Drones "have been flown to map out some of our properties," Cammen pointed out. By using a drone's onboard infrared capability, a drone operator "can see the health of the trees. There are some areas that we don't have much hardwood competition," which lessens the need to spray.

"In agriculture this is being called 'precision agriculture,'" he said.

Ruediger and another employee, designated "a visual observer," work on site from "a lift, like a Sky Track, so they are above the canopy" and can see the drone, as required by the FAA, Cammen noted. As a drone flies its preset route, the two employees watch a computer screen and the drone.

A drone can fly around 15 feet above the forest canopy, "the closer to better to reduce drift," said Cammen, but "currently we're probably 30, maybe 40 feet because of the uneven canopy."

Some tall trees (mostly white pines and balsam firs that might be seed trees) jutting above the canopy "are detrimental to drone application," he said. "We will cut down the trees that stick out."

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The drones "are much quieter and less intrusive" than other forms of aerial spraying, Cammen said. "There is no need for a crop duster to fly ... over other people's property" to refuel elsewhere. "These drones are flown only over our property. We land them right on our land."

Drone spraying is weather- and wind-dependent; "the wind has to be between two and 10 miles an hour," Cammen noted. An on-site tool monitors wind speed, and "we also take note of wind direction, so when we get close to sensitive areas on our property boundaries, we make sure the wind is heading into our property," he said. "We can easily adapt to changing conditions."

Worcester Holdings launched its drone spraying on August 15; the program will end on September 30. Drone spraying is being done on company land in Centerville, Cherryfield, Columbia, Columbia Falls, Jonesboro, Steuben, and Township 19 MD.

The Drones are coming, the Drones are coming.

