

# A farm for the future

## Canopii's fully automated greenhouse holds promise for all kinds of growers

BY JON BELL

**A**s if robotic crate stackers, automatic sidewalls and autonomous vehicles haven't innovated greenhouse production enough, a small startup in Hubbard, Oregon, is poised to take greenhouse automation and innovation to a whole new level.

Founded by mechanical engineer David Ashton in 2021, Canopii Inc. has created a fully automated hydroponic greenhouse that requires little to no manual labor. Inside the 2,500-square-foot, 30-foot-tall greenhouse, almost every task, from seeding, watering, transplanting, crop monitoring, harvesting and sorting has been automated. The only time a human has to step in is every few weeks to replenish nutrients and seeds, and keep up on pest control.

At present, the Canopii "farm," as the company refers to its greenhouses, is geared largely for leafy greens like lettuce and bok choy, as well as herbs. Most varieties grow from seed to harvest in about 30 days, and a single farm is capable of producing the equivalent of about three acres of land or about 30,000 pounds of greens. The company's first working prototype was constructed on land adjacent to **GK Machine**, a well-known greenhouse and agricultural equipment manufacturer in Donald, Oregon that also produces components for Canopii.

According to Ryan Tovey, business development manager for Canopii, the original concept of the system was driven by Ashton's affinity for the idea of food sovereignty, whereby people have access to not only healthy, sustainably produced food, but also the means to produce and distribute it.

"I think he sort of fell in love with that intersection of making food and engi-



Canopii Inc. has created a fully automated hydroponic greenhouse that requires little to no manual labor. PHOTO COURTESY OF CANOPII

neering," Tovey said. "He knew that it could be difficult for farmers when it comes to seasonality and labor, as well as some other supply chain pressures, so his idea was to come up with a way to help them."

Since its founding, the company has received funding from the National Science Foundation and other investors to bring the system to fruition. They're now focused on building their first commercialized, fully functioning greenhouse, likely somewhere in Portland where a community would support and be able to access locally grown greens year-round. Because one greenhouse can produce so much, Tovey said Canopii is also looking to potentially partner with a retailer like Market of Choice, who could sell Canopii greens as some of the freshest around.

"I think what gets me so excited about it, just from an overall feeling-good-about-the-work-you're-doing, standpoint, is the promise to actually bring hyper-local produce super close to the consumer," Tovey said. "It's something you just don't

see very often. It's so hard to get really local, year-round produce, but this is a promise is to do just that. You're going to get something that was grown and harvested outside your supermarket the day before you go and buy it."

Although the Canopii system is currently only aimed at leafy greens, the company does have aspirations to branch out into other sectors, including the nursery industry. That would likely take some modification of the systems, and growers might also have to consider diversifying their crops with options that could be grown year-round, but the potential, according to Tovey is real.

"We've had a good amount of nursery folks out here to look at it," he said. "We're looking for innovative thinkers who have ideas on how this could be used for them year-round. We'd love their input. It's kind of this exciting blank canvas. We know we've got something special, and we know we can help."

Find out more at [Canopii.us](https://Canopii.us) ©