Crop One plans for bright future

By

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Crop One Holdings, which has been attempting to perfect and advance its data and technology-driven vertical farming practices, expects to open a large-scale operation in the Middle East in 2022 and grow at a rate of one large facility per year over the next five years.


Deane Falcone

Chief Scientific Office Deane Falcone recently told *The Produce News* that the company has been learning how to scale its production and has successfully conquered that challenge during its seven-year history. He said the Dubai project, which is expected to open soon, will be able to produce 6,000 pounds per day of leafy greens in a 160,000-square-foot facility. He said a second facility is being built in the United States and others will follow.

“We have figured out how to scale,” he said, noting that Crop One has a smaller fully operational vertical farm in Massachusetts and currently delivers fresh leafy greens to its customer list, which includes about 30 stores. The company has adopted “FreshBox Farms” as its brand and is currently marketing more than a handful of products and mixes, including chard, kale, romaine and spinach, as well as a spicy mix, spring mix and power blend.

Falcone said that smaller facility was built to prove the concept and the company is now ready to march ahead. In fact, he sees a very bright future for the vertical farm sector. Thus far Crop One has had to take seed varieties bred for outdoor production and adapt them to the intricacies of vertical farming. Falcone said seed breeders are taking note and, over time, they will tailor crops for vertical farming.

Vertical farming is an apt description of the controlled environment agriculture method that Crop One has been working on. The company grows leafy greens on racks in a building. It achieves tremendous production on a per-acre basis by having rows and rows and layers and layers of growing trays. Calling attention to the limited vertical space that each layer has, Falcone said one set of characteristics that vertical farmers would like to see in their leafy greens are shorter plants with many more leaves on each plant. Currently, Crop One researchers must do a lot of trialing of existing varieties to determine which ones will produce viable crops on the vertical farming platform. A day will come, he believes, when varieties are specifically bred for vertical farms.

CEA and the vertical farm approach has been very popular among the investment community the past few years, garnering millions of dollars in start-up funds. Falcone believes the inherent advantages point to a very bright future for the concept. Vertical farms, which typically use controlled temperature and artificial lighting, can be built almost anywhere and produce 365 days per year close to major urban centers. They use far less space and water than outdoor crops and minimal amounts or no pesticides. In addition, they are a perfect fit for automation. They also tout minimal food waste with no cross-country shipping of product that ends up being waste. Consequently, the sector can offer a solution to the labor, water and logistics challenges that are currently confronting all of agriculture. An indoor, vertical farm is also impervious to climate change.

Falcone said that while Crop One's current production does not use pesticides, the company has not chosen to seek organic certification. Though the USDA's National Organic Program certification standards do allow for use of hydroponics, it is a controversy within the organic industry that doesn't appear to be going away. Falcone said Crop One's production uses zero pesticides — neither synthetic nor natural formulations. He and others in the vertical farming community use the word "cleaner" when comparing their output to an organic farm. Falcone expects some type of CEA certification process to emerge that will help the category market its advantages to consumers.

As mentioned, the sector is currently enjoying favor from investors and Falcone believes that the interest will continue. He noted that every large city can easily support a vertical farm of leafy greens, and stated there are many other crops that can, and will, be grown indoors. He expects there could be 10 players or more in the marketplace as the category matures. Falcone reiterated that the most difficult challenge is scaling so that a farm can be economically viable. He believes a vertical farm must have scale to be profitable because it is an expensive proposition to grow indoors and control all the environmental factors. Crop One, he said, has already jumped that hurdle, and will be proving that with the opening of its new facilities over the next several years.