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Labor, climate issues help drive controlled environment ag

By

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September 23, 2021

Though controlled environment agriculture reportedly only accounts for 1 percent of total fresh produce production, the high-tech ag sector has attracted a lot of investment and its fair share of controversy, especially in the organic produce arena.

As such, the 2021 Organic Produce Summit, held in Monterey, CA, in mid-September, devoted back-to-back educational sessions to the concept, both moderated by Walter Robb, former CEO of Whole Foods and current retail sector strategist. The first panel defined the concept and explored its potential from a producer standpoint. The second panel looked at CEA production from a retailer and consumer perspective.

Producers Phillip Karp of Shenandoah Growers of Rockingham, VA; Paul Mastronardi of Mastronardi Produce in Ontario, Canada; and Marc Oshima of AeroFarms in Newark, NJ, populated the first panel and not-surprisingly each had rosy predictions of the future of the segment as did the moderator. Robb, in fact, opined that the sector could be as large as 10 percent of total production within a decade. The others were even more optimistic.

Mastronardi estimated that by 2030 CEA could account for 15-20 percent of fresh produce supplies in the United States. He did define CEA a bit differently than others as he believes “everything but open field farming” qualifies. He explained that even the use of plastic as a low-to-the-ground crop cover is an attempt to control the environment in ag production...and as such it qualifies for the CEA designation.

Using this definition, Mastronardi Produce has been involved in the practice for decades as he said the company built its first commercial greenhouse in the 1940s. Today, 90 percent of its production comes from greenhouse production.

Today, there are many examples of CEA operations with vertical farming indoors garnering a lot of interest and capital investment. Mastronardi expects more crops to be grown indoors as there are several advantages with labor shortage and climate change being the biggest drivers. He also noted how efficient CEA is and the ability to grow crops with far less water.

AeroFarms is a firm dedicated to indoor vertical farming, which Oshima said is highly efficient, uses 95 percent less water and zero pesticides. He also revealed that AeroFarms has honed its growing time to the point that it can produce 26 crops in one year indoors. Currently the company is focused on microgreens, baby lettuces and leafy greens.

Oshima said CEA practitioners are re-imagining farming. AeroFarms is leveraging technology and inventing proprietary tools as it focuses its processes from the plant up, using a holistic approach to create the perfect environment for each plant. Toward that end, the company has invented

proprietary lighting for indoor growing.

Shenandoah Growers began as a field operation three decades ago and is steadily moving into controlled environment agriculture to produce its full slate of herbs. Its production is currently overwhelming a field operation, but Karp said it will eventually swing the other way. He estimated that the company will eventually grow 90 percent of its production via CEA.

Shenandoah grows all of its crops in soil, which allows it to skirt the major sticking point CEA faces from old-line traditional organic farmers. While there is no doubt that organic farming began with a proposition to improve the earth's soil by using no synthetic pesticides and only natural ingredients, the U.S. National Organic Program does allow for certification of crops grown in hydroponic solutions and containers. This has been an ongoing fight with traditionalists losing the latest battle.

The panelists did not focus on the organic controversy but did wade into the water a bit. Mastronardi believes that when consumers are shopping for organics what they are actually looking for are chemical-free products. Oshima essentially said the same thing. The panelists also agreed that the organic standard does need to be revisited as vertical indoor farming did not even exist when the standard was written. While hydroponics was a production technique at the time, the technology had not advanced to the point where it allowed pesticide-free production.

Karp posits that Shenandoah's march to CEA techniques is driven by freshness, flavor and profitability. Using high tech farming allows the company to deliver high quality produce to the ultimate consumer.

Oshima agreed, adding that nutritional content can also be enhanced through CEA farming techniques. He noted that AeroFarms' "irrigation" technique mists the roots of the plant providing the perfect amount of moisture.

Of course, one of the top benefits of the CEA movement is the placement of vertical farms throughout the country to reduce the carbon footprint by greatly reducing the miles from farm to fork.

With the advantages of CEA clearly articulated by the panel of producers, Robb moved on to the second panel to determine retailer and consumer reaction to what appears to be a farming revolution in the making.

Frances Dillard, vice president of brand and product marketing for Driscoll's in Watsonville, CA, is not convinced that CEA will drive consumer behavior. Every time she had an opportunity to talk during the second half of the discussion, she noted that consumers are driven first and foremost by flavor. She allowed that price and freshness play a role. But Dillard emphatically said "Nothing!" when answering Robb's question about the value of CEA to consumers.

She added Driscoll's marketing research keeps the berry company committed to pushing flavor as the number one purchase driver. Driscoll's is a forward-thinking company with CEA efforts under way. Dillard just doesn't expect the growing process to mean much to the shopper.

That view was not shared by the two retailers on the panel. Victor Savanello, vice president of produce and floral merchandising for SpartanNash headquartered in Byron Center, MI, foresees a huge future for CEA produce on the retail shelf. While consumers might not know about the concept currently, he believes it "gives retailers a great story to tell."

The idea that product on the shelf will be fresher and grown in a more environmentally friendly way is a big plus to Savanello.

Caitlin Tierney, who had just started her new job a week earlier as senior director of innovation for Sprouts, noted that she was speaking for herself, not her new company. But she is very bullish on CEA, estimating that the farming technique could produce 25-40 percent of production within a decade. While some crops will obviously remain outdoors, such as onions, Tierney said the ability to farm locally and greatly reduce food safety worries is a huge advantage.

Sprouts' newest employee was recently with Mastronardi and she revealed that some customers will pay a significant premium for CEA tomatoes that promise reduced food-safety issues because of their indoor growing process.

Speaking to the opinion that consumers don't care to get into the weeds about production techniques, Tierney said "consumers should care and its our job to inform them."

She added that the ultimate job of everyone in the produce industry is to increase consumption of our products and touting a procedure that offers best flavor, convenience and freshness is a great way to do that. She added that "taking away miles" on the shipping end and offering an organically grown product are two huge advantages. Tierney noted that there is more work to be done on the organic certification front, but intimated it is worth the effort.

Dillard remained undeterred. She believes communicating complex issues to consumers is not the best path to their stomachs or shopping carts. However, she did say that as a production technique, she loves the idea of CEA and "embraces disruption." She also noted that if the process does create heightened awareness among consumers, she's all for it. "As a marketer, I love hype!"

Savanello reiterated that the promise of freshness for consumers and a longer shelf life for both the consumer and the retailer is a big selling point. He expects CEA production to continue to garner a larger share of the produce department shelf.

Photo: The producer panel during the OPS CEA discussion consisted of moderator Walter Robb, Paul Mastronardi, Vic Savanello and Marc Oshima.

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