



Photo by Johnathon Henninger

REDEFINING FARM-TO-TABLE

STORY ROBERT RABINE

Driving down River Street in Bridgeport, it was easy to reflect on the stark contrast of the industrial past to the modern day. Not so long ago, this busy warehouse and manufacturing district employed thousands of people in mid-sized businesses, producing goods to be shipped overseas. And yet, in this setting of now vacant buildings, there sits a start-up with a radical vision for the future that redefines the meaning of farm-to-table by hydroponically growing and locally distributing the freshest, high-nutrient, entirely organic salad greens, all within the confines of an urban environment.

Metrocrops, LLC, sits quietly on the second floor of a repurposed cabinet-making shop that has been converted to a High Density Urban Indoor Farm, the first of its kind anywhere. They hydroponically produce high-quality, high-nutrient salad greens in a 2,000 square-foot grow room. “We get double the nutrient levels of normal salad greens, according to USDA analysis,” said Steve Domyan, who founded Metrocrops in 2011 through the help of a USDA research grant with his wife and partner, Nancy.

The Domyans met at Northeastern, he an electrical engineer and she a writer; they both went on to do their MBA work at UCONN.



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Steve worked for Intel before starting his own business, which ultimately became a casualty of the economic downturn of 2007-2008. Suddenly, he was looking for something to do. “Steve already had an interest in repurposing old warehouses located along I-95,” said Nancy, “He had just read a book by Dickson Despommier called *The Vertical Farm*, which had piqued his interest.” Nancy and Steve took a three-day seminar required by the USDA, got some critical business advice from SCORE in New Caanan (a nonprofit group established in 1964 for the purpose of promoting small business growth), did their own grant writing, and were off to the races. Good fortune shined on them when they met Dr. Steven Britz, a hydroponics expert who worked at the USDA at the time and was interested in helping. Offering invaluable technical support and expert guidance, he now sits on the board of Metrocrops. From these rather humble beginnings, Metrocrops has grown into an established business, centered on the cultivation of green vegetables in their hydroponic facility.

The grow room itself glows pink from a combination of the red and blue wavelengths of the LED lights. We don plastic shoe covers to prevent any bacterial contamination. “Zoning didn’t know what to do with us,” remembers Steve, “We’re not a farm or a factory or a restaurant or a processing plant.” Operating in a commercial rather

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than agriculturally zoned space has left Metrocrops without some of the advantages enjoyed by traditional farms. “A farm can field harvest their lettuce, which means pick it, rinse it, and bag it right there, but right along with all the other contaminants as well.” Although they obey all Good Agricultural Practices (GAP) required by the CT Department of Agriculture, Metrocrops undergoes the added rigors of being designated as a food service facility, resulting in an exceptionally

well-controlled growing environment. Says Steve, “We don’t have any contaminants here.”

The room is cool and noisy from the fans (lettuce likes it cool). Eight lettuce-laden “rigs” line the walls. These custom-designed rigs look similar to rolling racks used in commercial kitchens with attached lighting, irrigation, and drainage equipment, all designed by Dr. Britz. “The plants get just the amount of nutrients and light they want, and, unlike humans, lettuce likes a 24-hour day, and we are happy to give it to them,” Nancy says, as we look at lush trays of organic red leaf, green leaf, baby arugula, baby dwarf kale, and chicory. “Most lettuce is 95% water. Ours is 90%, with the difference being the extra antioxidants.” Metrocrops usually gets three to four harvests per tray of plants with minimal spoilage and waste thanks to tender treatment, as the lettuce is hand cut, rinsed in purified water, bagged, and hand delivered. Metrocrops uses a reverse osmosis system

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to filter its water to a purity level of only 1 ppm—part per million—of trace elements. “Then we add back in the fertilizer and the trace elements, so we can precisely control the hydroponics. We have the equivalent of three acres of growing space just in these eight rigs alone,” says Steve. “The grow room is a very complex matrix: our unique grow lights, the periodic water pumping, nutrient levels, the humidity. Because of our proprietary methods involving UV exposure, our lettuce has twice the antioxidants as regular lettuce and twice the flavor.”

At that point Steve lifts a rack of baby arugula out for me to sample. It tastes exceptionally peppery. We move to normal light, and what looked washed out under red and blue light takes on a deep, dark green color I have never seen in arugula before. “It’s just like when you go out in the sun, and you get darker from UV exposure. It turns out that plants do the same thing. They use the UV as a trigger for them to get darker by making antioxidants. If they can’t get the UV exposure, they don’t do that. That’s why our product is so superior to anything that is grown in a greenhouse, because the plastic or glass filters out most of the UV, especially in the winter, when the sun is so low on the horizon that they get no UV whatsoever,” said Steve, “and unlike traditional farming, we are oblivious to the weather, 365 days a year. Not to mention that we use 90% less water than a traditional farm with none of the added pesticides and herbicides.” Metrocrops also recycles most of its water and is hoping for a fuel cell grant in the near future to make the entire operation self-sufficient and totally sustainable.

This sort of high-quality, delicious food has made Metrocrops popular. The demand is so great that they’re turning down customers, but Steve knows the scalability of this endeavor hinges on the distribution chain. He explains that a large part of what produce distributors do is provide the retail outlets for the wholesale grower, but it’s a financial trade-off because of the way commercial pricing is structured. An average of 38 cents of every dollar spent on fresh produce in this country goes to the distributor—effectively a transporter and middleman—and Steve wants to keep that revenue within the business that does the actual production. One way of doing that is by selling directly to the customer. Currently, Metrocrops distributes at farmer’s markets in Woodmont, Trumbull, and New Caanan, and supplies a limited number of restaurants in Fairfield County. They are also experimenting with weekly,



Photo by Steve Domyan

pre-paid drop-off points in office buildings and similar locations around Bridgeport. Because of the care taken by Metrocrops during harvest, washing, and bagging, its leafy vegetables will last up to two weeks in the refrigerator, with baby dwarf kale still going strong after four weeks. This is one of the benefits of not being shipped to more distant markets. By comparison, the average store-bought lettuce takes up to 21 days to hit the supermarket, with a 20% spoilage rate.

Steve and Nancy at Metrocrops envision an entirely new farm-to-table system for their product that is essentially local but could have nation-wide implications in terms of access to fresh, high-quality produce in disaffected neighborhoods all over America. With the potential for facilities like this in cities across America, not only could healthy, organic produce be grown throughout the year, but the cost and environmental impact of distribution could be largely mitigated, resulting in lower prices for the consumer.

As I drove away from Metrocrops with my hefty bag of the finest baby arugula I have ever tasted, I glanced in the rear view mirror and thought, perhaps, I had just glimpsed the future of farming. 🌱

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METROCROPS®
(Facing page) Arugula under LED lights; (Above) Baby red and green mesclun mix.

Robert Rabine is a lifelong foodie only recently retired after 35 years in the restaurant business on both coasts. The former owner of Café Routier in Westbrook, he is now the Food and Beverage columnist for *The Shoreline Times* and is also a regular contributor to *The Daily Meal*, *The New Haven Register*, and *Connecticut Magazine*. An avid golfer and gardener, he lives on the Connecticut shoreline with his husband of nearly 40 years and their really old cat.