

# The New Face Of Hydroponics



PHOTO COURTESY OF TANIMURA & ANTLE

As consumer values evolve, retailers take advantage of innovative hydroponic producers to support local, sustainable and environmental ideals.

BY JODEAN ROBBINS

In the midst of a chilly Pennsylvania winter, Giant Food Stores out of Carlisle, PA, is preparing to promote locally grown lettuce. Just how does the retailer intend to accomplish this feat — through the technology of hydroponics and innovative growers.

Products from local hydroponics producer BrightFarms, headquartered in New York City (with production in Yardley, PA), launched in select stores within the Giant Food Stores (Giant-Carlisle) and Giant Food (Giant-Landover, MD) divisions this January. The inventory showcases salad greens, basil, and tomatoes. According to a spokesperson from Giant, since this product is grown “right here

on the East Coast, the stores are excited to be eliminating food miles and allow them to deliver a fresher product to customers.”

The genre of hydroponics — also referred to as indoor farming, soil-less farming, and more recently, vertical farming — continues to sprout myriad commercial options. According to AgFunder (an online investment marketplace enabling accredited investors to invest in agriculture and agriculture technology companies), “indoor agriculture is a \$500-million-plus industry in the U.S.,” relays Marc Oshima, chief marketing officer with AeroFarms in Newark, NJ. “According to market research firm IBISWorld, the potential market is estimated closer to \$9 billion. This includes hydro-

ponic, aeroponic, and aquaponic techniques.”

Hydroponics first caught U.S. consumers’ attention via large-scale use in the hothouse tomato industry. “We were green before it was cool to be green,” says Douglas Kling, senior vice president and chief marketing officer for Village Farms in Vancouver, BC, Canada.

As an example of the growth of hydroponics, Kling references how 52-week rolling data for a full year ending in September 2015 shows about 60 percent of the dollars of tomatoes sold in the U.S. is greenhouse product. “I heard estimates that 15 years ago it was less than 2 percent for greenhouse,” he adds. “We see similar growth in other products.”

However, evolving consumer preferences



now power a move to local, urban greenhouses. “Consumer demand for a fresh and local solution drove produce suppliers to develop hydroponic greenhouses in strategic locations,” says Ryan Mazzuca, hydroponic commodity manager for Tanimura & Antle in Salinas, CA.

Case in point, local New York roof-top producer Gotham Greens enjoys a robust business with several retailers ranging from renowned Whole Foods Market to independent D’Agostino’s Supermarkets in New York City. “These operations are hyper-local and customers recognize it,” reports John Vasapoli, D’Agostino’s director of perishables. “It’s been a tremendous asset for us to have this product in our stores.”

### TOUCH POINTS WITH TODAY’S CONSUMER

Hydroponics is less about the production method and more about what results. “Today’s consumer doesn’t really focus on it being hydroponic — they may not even know what that means,” explains Paul Lightfoot, chief executive of BrightFarms. “It’s more about it being local and sustainable.”

D’Agostino’s sees its retail consumers focusing less on the production method and more on the end product. “Consumers care about local, sustainable, freshness and flavor,” explains Vasapoli.

The pursuit to satisfy these consumer demands resulted in a plethora of hydroponic formats ranging from 100-acre operations to niche-businesses measured in square feet and everything in between.

The 27-year old Village Farms operates a total of 400 acres of greenhouse production in Vancouver, Texas, Mexico, and Ontario.

## “The proliferation of hydroponic growing methods, including organic, is an extremely significant milestone.”

— Renee Cooper, Hollandia Produce

Tanimura & Antle operates 16.5 acres of hydroponic greenhouses producing Boston lettuce and a handpicked selection of artisan head lettuces.

Hollandia Produce in Carpinteria, CA, grows certified organic living Butter lettuce and watercress under its Grower Pete’s label in accordance with USDA organic standards under the National Organic Program.

“The proliferation of hydroponic growing methods, including organic, is an extremely significant milestone,” says Renee Cooper, marketing manager. “But, just because crops are grown hydroponically does not mean they’re necessarily organic.”

Local industry darling Gotham Greens started in Brooklyn, NY, in 2009 and now operates more than 170,000 square feet of greenhouses across four facilities in two cities. “We are the largest urban agriculture company in the world,” says Viraj Puri, chief executive.

Innovative BrightFarms has three greenhouse operations in three states (Pennsylvania, Illinois and Virginia) totaling 366,000 square feet and grows Spring Mix, baby arugula, baby kale, baby spinach, basil, and tomatoes.

North Shore Living Herbs in Thermal, CA, owns 8 acres of greenhouse space and grows living herbs. “We offer our products in a living

clamshell and as potted herbs,” explains Micki Dirtzu, director of marketing.

The local, vertical format reached as far north as Alaska. Vertical Harvest Hydroponics (VHH), a veteran-owned business in Anchorage, AK, designs and builds Containerized Growing Systems (CGS) — allowing produce to be grown hydroponically on-site.

“Throughout the U.S. and Alaska, we are seeing a big upsurge in hydroponic operations of all sorts from rooftop to retrofitted buildings to containerized systems,” says Linda Janes, VHH co-founder. “Alaska is one of the states that can benefit the most from a reliable local food source.”

### A MOVE TO QUALITY AND FRESHNESS

According to industry members, traditional hydroponic greenhouse crops include tomatoes, peppers, and cucumbers. “Vine crops such as tomatoes, peppers and cucumbers dominate this method,” relates Lightfoot of BrightFarms. “More local formats include salad greens and herbs; we’re starting to see strawberries as well.”

Lettuces and herbs play an increasing role especially in local or living hydroponic formats. “The hydroponic category is ruled by leaf items such as Boston lettuce,” says Mazzuca of Tanimura & Antle. “Other hand-selected specialty lettuces continue to be researched



PHOTO COURTESY OF BRIGHTFARMS

**BrightFarms has three greenhouse operations in three states (Pennsylvania, Illinois and Virginia) totaling 366,000 square feet and grows a range of leafy greens and tomatoes.**



**Marketers and hydroponic producers agree merchandising hydroponic products at retail with unique packaging to promote a fresh, sustainable and local solution will help differentiate the category.**

and innovated.”

While Alaska’s current CGS design permits a variety of culinary herbs and leafy greens to be grown economically, new items are forthcoming. “R&D is working on systems allowing for flowering plants like tomatoes or berries to grow,” reports Janes of VHH. “R&D and tailoring the design just right are huge components to manufacturing a system that is financeable, sustainable — pays for itself and brings money into the community — offers employment opportunity and brings home the bacon.”

Advances in technology open doors for improved operations. “New growing technology increased yield and efficiency in the hydroponic greenhouse setting allows for better manipulation of sunlight, humidity, and temperature,” says Mazzuca. “One acre of hydroponic production is equivalent to 50 times that of traditional farming, while utilizing 95 percent less water and fertilizer.”

In the past, Janes recalls several indoor growing projects in Alaska didn’t go as planned. “Now, with improved technology, decreased prices for such items as LED lights, process

refinement, and increasing demand for local produce, hydroponic growing in Alaska is on the upswing.”

### SUSTAINABLE METHODS

Efficiency, ecology and sustainability are crucial aspects of hydroponics. Gotham Greens uses advanced, re-circulating techniques to maintain precision plant nutrition.

“Since we’re growing in climate-controlled rooftop greenhouses using a high level of technology, we’re able to grow year-round and very efficiently,” reports Puri. “Our techniques are capable of producing over 50 percent more crop than conventional greenhouses while using 25 percent less energy per pound of crop produced.”

Hydroponics purports better use of land in terms of productivity. “You get 25 to 30 percent greater yield per acre,” says Village Farms’ Kling. “It’s more productive per acre with no land erosion.”

Hollandia’s sophisticated operation enables it to output about 3.55 times more lettuce per acre than field growing methods. “Hydroponics is more resource-efficient, producing higher

yields with less acreage,” explains Cooper.

Water conservation is significant with most hydroponic operations. “We use about 82 to 84 percent less water than field operations,” says Kling. “We recycle it about four to five times.”

Gotham Greens’ advanced irrigation system uses 20 times less water than conventional agriculture while eliminating all runoff. “This is especially pertinent given the drought in California and since agricultural runoff is one of the leading causes of global water pollution,” declares Puri.

Vertical farming in particular allows for large-scale, high-quality food production according to Janes. “It maximizes output while minimizing facility space, land requirements, water usage, electricity, waste, and man-hours,” she says. “Our systems are also very insulated, thereby requiring less for heating costs.”

### SELL THE BENEFITS NOT THE FEATURES

Retailers are advised to center marketing messages for hydroponic on product benefits. “Marketing focus should be on the particular benefit of the product to the consumer,” suggests Lightfoot of BrightFarms. “If it’s local product, then focus on shelf-life and taste. It’s really about what results from the production method and not the production method itself.”

Kling agrees the average consumer doesn’t really place much emphasis on the technical features of hydroponic. “They care about what the production method results in,” he says. “This encompasses food safety, ecology and social responsibility.”

North Shore’s Dirtzu agrees that marketing must link to values, especially with Millennials. “Consumers are choosing to use their purchase power to support brands with earth-friendly practices that align with their personal values,” she describes.

VHH focuses messaging on these high-lights: local produce year-round; reduce the supply chain from weeks to hours; from farm-to-table just in time for lunch or dinner; eat food that’s still alive — that’s superior nutrition; produce grown without pesticides using non-GMO seeds; and rich flavor profiles, superior freshness, locally grown greens.

Hollandia recommends retailers create destination sets specific to hydroponics in produce departments. “Also, setting competitive price points at retail for hydroponics will likely impact adoption and consumption rates,” advises Cooper.

North Shore suggests cross-merchandising its living basil with tomatoes and avocados and displaying the clamshell herbs in the refrigerated section. “Our potted herbs do great at

the entry point into the produce department and gives a farmers-market feel to the store,” adds Dirtzu.

Educating consumers with these key messages will drive sales. “Merchandising hydroponic products with unique packaging to promote a fresh, sustainable and local solution will help differentiate the category and allow suppliers to further develop new SKUs,” counsels Mazzuca of Tanimura & Antle.

D’Agostino’s reports word-of-mouth and social media campaigns by Gotham Greens support sales. “I hardly promote the items as far as advertising or putting them on sale because of the already existing demand,” declares Vasopoli. “I can’t sell any other basil in my stores. My customers don’t want anything else.”

New Leaf Community Markets in Santa Cruz, CA, (with eight stores) regularly carries both Hollandia Butter lettuce and watercress and credits packaging for educating shoppers.

“The packaging helps call out the product on the shelf,” describes Maroka Kawamura, produce director. “It’s nice to have some info at the ready for a customer.”

Overall, success with hydroponic product is less about price and more about perceived value. “Every retailer I know says, ‘How do we



(L-R) PHOTOS COURTESY OF AERO FARMS AND VERTICAL HARVEST

**Vertical farming is favored for large-scale, high-quality food production. It maximizes output while minimizing facility space, land requirements, water usage, electricity, waste, and man-hours, according to Linda Janes, co-founder of Vertical Harvest Hydroponics.**

get lift?” expresses Kling. “Lift is not just price; anyone can raise or lower price. Vegetables can be an affordable indulgence. If the benefit is there — whether flavor, quality or safety — we will get bigger lift, because it’s meeting what the consumer wants.”

Promoting quality and benefits of hydro-

ponics places the product in a unique situation. “Generally speaking, premium-quality produce grown using sustainable methods and fair wages can certainly command a premium price,” says Puri. “Gotham Greens’ products are competitively priced and on par with other leading local and national organic brands.” **pb**



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