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## Exploring New Growth

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Growers often opt for the tried and true, the plants that they know for sure how to grow and get the most out of. And while that can be profitable, there are breeders out there constantly working on offering better varieties to provide better disease resistance, increase yields and even extend the growing season or allow for growing in different times of the year. All of this can improve profitability, but you have to decide which varieties are the right ones to take a chance on (for more on trialing new options, check out David Kuack's story on page 20).

Here, I tried to provide a wide variety of options for all types of growers, from smaller operations servicing farmers markets and community supported agriculture (CSAs) to large, multi-acre greenhouses, as well as vertical farms and container farms. Also, I'd love to continue the dialog on new varieties and new crops for CEA growers in general, so if you're reading this and would like to let me know about your new varieties, please email me and I'll be happy to share them in future issues and online.



### Leafy greens

First off, lettuce. This is an increasingly popular indoor production staple, and as such there are more varieties from which to choose. Enza Zaden has options to broaden the offerings for North American hydroponic growers, both greenhouse and vertical farm/container farm.

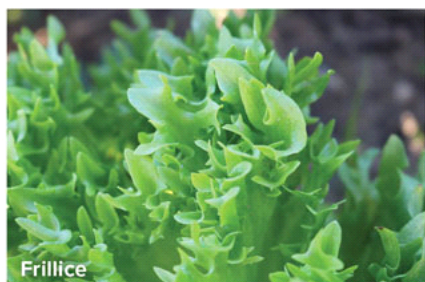
We're highlighting three of their offerings here, including two that are green crispy types: Cristabel and Crispyano, and one that's a red leaf Lollo Rossa type: Litska.

Cristabel is a crispy option with thick, dark green leaves. According to Adrian Garcia-Scott, marketing specialist for the U.S. and Canada for Enza Zaden, it's optimized for high-density production with fast growth and high yield potential. It's strong against tipburn and does well in both greenhouse and closed controlled environments. Cristabel has upright leaves and a short core that's great for automated harvesting, too. It has high resistance to lettuce leaf aphid (*Nasonovia ribisnigri*) and lettuce die-back (TBSV) and intermediate resistance to lettuce mosaic virus (LMV).

Crispyano is also a fast-growing crispy variety, strong against tipburn and bolting with a good base. It has a dark green color and crisp, juicy texture. Adrian noted it works well for both high-density and whole head

production, and it's successful in both greenhouse and closed environments. It features high resistance to downy mildew (Bl: 1-8) and lettuce die-back (TBSV), as well as intermediate resistance to lettuce mosaic virus (LMV).

The red-leaf Lollo Rossa option is Litska, a shiny, cherry-red, fast-growing variety with strong and flexible leaves for easy packing with a high tolerance for tipburn. Adrian noted it's a nice counterpart to green crispy lettuce. It features high resistance to some races of downy mildew and lettuce die-back (TBSV).



Row 7 Seed Company is a unique operation dedicated to working with chefs, farmers and plant breeders to come up with vegetable offerings that are focused on flavor and nutrition. They recently announced the introduction of Spinach Lettuce, a result of a multi-year collaboration with lettuce breeder Bill Waycott. He chose to focus on nutritious and delicious lettuce varieties, said Row 7 Seed Company Content Manager Shelby Vittek.

"Over multiple seasons we worked with Bill to identify lettuce varieties with unique leaf types, head shapes, textures, flavors and nutrition," she said. "We also shared Spinach Lettuce with our participatory Trial Network of chefs and growers, who worked with us to trial this new-to-the-world lettuce, exploring its applications in the field and the kitchen."

"Spinach Lettuce stood out for its broad, deeply green, tender leaves and deep root system, used to mine nutrients in the soil."

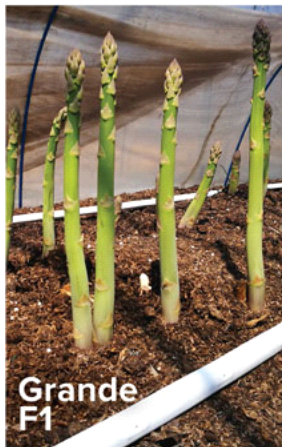
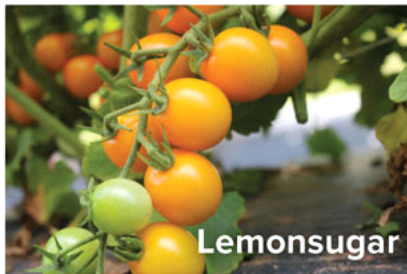
Expected to be available via later this year on the company's website, the new variety has the nutritional punch of spinach, along with the growth habit of a head of spinach, with a depth of flavor that can be used in salad mixes the same as you would romaine.

Seminis Vegetable Seeds also has a new frilly leaf lettuce that works for indoor production. Frillice is the first variety from Seminis in the crisp leaf lettuce segment, according to the company, and provides shiny serrated frilly green leaves with a sweet, crunchy taste. It's a compact, rounded plant with good tolerance to tipburn and bolting, as well as intermediate resistance to lettuce mosaic strain 1.

## Microgreens

I talked to folks at Arizona-based Condor Seed Company at Indoor Ag-Con in Las Vegas and they offer a wide variety of sprouts, microgreens and baby leaf greens for indoor and outdoor production. They work with 15 different growers to source the more than 300 varieties of seed they offer. A few newer offerings in their catalog (all three can be grown as a sprout, a microgreen or a baby leaf) include: a beautiful Tat Soi Scarlet red, a spicy Wasabi Mustard Green and Mizuna Red Streak with a frilled leaf that's a dark red in the early stage.

The Wasabi Mustard Green is spicy with a nice bite, is easy to grow and takes 21 days for baby leaf and 45 for full size. The striking Tat Soi Scarlet red is a fast 10 to 15 days for microgreens, 21 to 25 days for baby leaf and 30 days for full size. And the frilled leaf Mizuna Red Streak starts out dark red at the early stage, adding texture and color to salad mixes. It's ready in 10 to 15 days for microgreens, 21 to 25 days for baby leaf and 40 to 45 days for its full size.



## Tomatoes

Here, we have a couple of options from Seminis Vegetable Seeds that would be good for indoor production with tomatoes that are resistant to cracking. Cherry Boy creates deep red tasty fruits on long, uniform trusses that can be harvested both loose or as trusses. Average fruit weight is 15 to 20 g and Seminis considers the variety's advantages to include easy to pack, appealing appearance, less waste and easy to grow.

Lemonsugar, meanwhile, is an indeterminate sweet yellow cherry tomato with uniform clusters for truss harvesting, as well as loose. Its benefits are a longer shelf life, higher percentage of premium fruits and good flavor. It also offers resistance to tomato yellow leaf curl virus, nematode and Fusarium wilt, as well as tolerance to grey leaf spot.

## Asparagus

Yes, you read that right—asparagus. I know it's not a traditional indoor crop by any means, but I met the folks at Walker Brothers Seeds and Plants at Indoor Ag-Con this year, and they're the largest producer of asparagus seeds in the world. Scott Walker told me about research out of Japan for indoor in-ground high tunnel production that sped up harvest.

Typically, asparagus takes multiple years from planting to harvesting, but with the method used by the Japanese researchers, the crop can be transplanted in March and grown on for the rest of that year, then ferns cut in January and a harvest of the spears in March through June the following year. That's a significant reduction in cultivation and bumps up the harvest time from the conventional April through June to March through June. That means growers can hit that all-important Easter timeframe with earlier harvest dates, and Scott said the research showed increased yield in the indoor production versus conventional, as well as reduction in chemical application and labor.

Researchers in Japan used the Grande F1 variety (which has a 15-plus year lifespan). It's a unique, niche crop, but it's also a market opportunity for those who supply early farmers markets or CSAs, as well as restaurants or food distribution services.

## Cannabis

Another specialized crop is cannabis, and I generally wouldn't include it in with new produce varieties, but Phylos Bioscience has a unique new offering potentially changing the whole production cycle that I think



warrants their inclusion. They offer hybrid feminized seeds that growers can grow a full flowering crop from, rather than using mother stock for cuttings, according to Jared Reynbery, senior director of breeding. That can translate into fewer opportunities for diseases, as well as faster crop turns, more vigorous plants and more space for finished flowering crop production.

The F1 seeds bred through the R&D team at Phylos have unique and varied aromas, too, and have been selected for benefits like their minor cannabinoids. For instance, they selected varieties with THC-V, which can be more energizing than other kinds. They do this through genotyping, where they can identify the genetic markers for different cannabinoids.

Their main focuses, though, are on potency, aroma and what he called “bag appeal,” since in many dispensaries the customer can only look and not smell it. Two of their newer F1 elite hybrid varieties are Cheddar Cheeze and Lemon Fresh.

On Cheddar Cheeze: “It’s a fabulous, vigorous, high yielding variety that is very suitable to indoor environments ... it’s just a beautiful plant, it’s extremely uniform,” Jared said. “The fun part about it is that we’ve had a lot of customers grow it and they’re like, ‘Oh, there’s not too much aroma. It’s okay.’ And we’re like, ‘Really just wait till you harvest it and dry the flower and cure the flower.’ And every single person who has grown it after the cure said, ‘It’s really cheesy.’”

He added with Lemon Fresh there’s a large amount of Terpinolene with a citrus, hazy aroma.

## For More Details

Here’s how to reach the companies listed:

[Enza Zaden](#)—Look for the Hydroponic Lettuce & Herbs North America 2024 brochure

[Row 7 Seed Company](#)

[Seminis Vegetable Seeds](#)

[Condor Seed Company](#)

[Walker Brothers Seeds & Plants](#)

[Phylos Bioscience](#)