Volume 2024 Monday, April 01, 2024 Edition 11

THE MICROGREENS WEEKLY

The Microgreens Weekly Digest, "Delivered to Your Inbox Every Monday," is your summary digest of the latest microgreens, urban farming, and vertical farming new trends and exciting startup stories from around the world.

Building a Resilient Food Future & Growing Young Minds

This Week: Monday, April 01, 2024

Can herbs and spices influence the health of the gut microbiome?

A new study suggests that eating foods rich in polyphenols, which are natural antioxidants found in fruits and vegetables, might help keep your gut healthy. Basically, these polyphenols could help create an environment in your intestines where there are fewer "bad" bacteria and more "good" bacteria. This means

your gut can function better, and you might be less likely to get sick.

The study identified and used several culinary herbs, including black pepper, **onion**, **garlic**, cinnamon, ginger, and turmeric. These herbs were measured for their consumption frequency and polyphenol content.

> Polyphenols is the name given to a wide range of bioactive compounds found in plants.

Herb	Total Polyphenol Content
Black Pepper	1000-1999 mg/kg DW
Onion	>1000 mg/kg DW
Garlic	>1000 mg/kg DW
Cinnamon	≥3000 mg/kg DW
Ginger	>1000 mg/kg DW
Turmeric	1000-1999 mg/kg DW

The study shows that what we eat, especially foods rich in polyphenols like fruits, vegetables, and herbs, can affect the good bacteria in our gut. This information can be used to create personalized dietary recommendations and even particular interventions based on a person's specific needs and gut health.

One interesting finding was that people who frequently use culinary herbs in their cooking tend to have healthier gut microbiota.

Remember, it's always important to talk to a doctor or other health professional before making any major changes to your diet.

Alexandra Adorno Vita et al. "Relationships between Habitual Polyphenol Consumption and Gut Microbiota in the INCLD Health Cohort." Nutrients, vol. 16, no. 6, Multidisciplinary Digital Publishing Institute, Mar. 2024, pp. 773–73, https://doi.org/10.3390/nu16060773.

Try growing some Onion and Garlic microgreens. They are flavorful and nutritious.

And here is one of my favorite microgreens recipes from my book Eat Now! Book #1 Salads:

GARLIC AND ONION MICROGREEN SALAD WITH LEMON VINAIGRETTE

This dish combines the sharp, fresh flavors of garlic and onion microgreens with the bright acidity of lemon, balanced with the sweetness of cherry tomatoes and the creamy texture of avocado. It is a perfect side dish or a light meal on its own.

Ingredients

- 1 cup garlic microgreens
- 1 cup onion microgreens
- 1 cup cherry tomatoes, halved
- 1 ripe avocado, diced
- 1/4 cup extra virgin olive oil
- Juice of 1 lemon
- 1 teaspoon honey or maple syrup (optional for sweetness)
- Salt and pepper, to taste
- 1/4 cup slivered almonds or pumpkin seeds (for crunch)

Instructions

1. **Prepare the Vinaigrette:** In a small bowl, whisk together the olive oil, lemon juice, honey (if using), salt, and pepper until emulsified. Adjust the seasoning to taste.
2. **Combine the Salad:** In a large bowl, gently toss together the garlic and onion microgreens, cherry tomatoes, and diced avocado.
3. **Dress the Salad:** Drizzle the vinaigrette over the salad, tossing gently to ensure everything is lightly coated.
4. **Garnish and Serve:** Sprinkle the slivered almonds or pumpkin seeds on top for added texture, and serve immediately to enjoy the freshness of the microgreens.

Enhancing the Nutritional Quality of Microgreens through LED Lighting

Microgreens have gained popularity as a nutritious and sustainable food option. Recent research has shown that the use of LED lighting, particularly in the **blue spectrum (400–500 nm)**, can significantly improve the nutritional quality of microgreens.

The study explores the potential benefits of LED lighting in microgreen cultivation and its implications for sustainable agriculture.

Improving Nutritional Quality

The findings suggest that incorporating blue LED lighting in the cultivation process can lead to higher levels of specialized metabolites (SMs) in microgreens.

These SMs, such as **ascorbic acid (vitamin C)** and **total phenolics**, contribute to the antioxidant capacity of the microgreens, making them a healthier food choice.

By **optimizing the light spectra**, growers can enhance the nutritional value of their produce, offering consumers access to more nutrient-dense options.

Sustainable Cultivation Methods

LED lighting technology proves to be particularly beneficial for sustainable and space-saving cultivation methods, such as the zero-acreage farming technique (ZFarming).

This approach allows for year-round production of microgreens, even in urban settings with limited space. By utilizing LED lighting, growers can **maximize their yields** while minimizing their environmental impact, supporting local agriculture, and reducing the carbon footprint associated with transportation.

Implications for Growers

The research highlights the potential for growers to leverage LED lighting technology to improve the quality of their microgreens. By focusing on the blue spectrum, they can create optimal growing conditions that promote the production of SMs and enhance the antioxidant capacity of their crops. This not only adds value to their produce but also positions them as providers of nutritionally superior and sustainably grown food options.

Key Takeaways

The use of LED lighting, particularly in the blue spectrum, offers significant benefits for the cultivation of microgreens.

By **enhancing their nutritional quality and antioxidant capacity**, LED lighting technology enables growers to produce healthier and more sustainable food options.

As consumers become increasingly health-conscious and environmentally aware, the adoption of LED lighting in microgreen production presents a promising opportunity for the agriculture industry to meet the growing

demand for nutrient-rich and sustainably grown produce.

Vrkić, Roberta, et al. "Can LED Lighting Be a Sustainable Solution for Producing Nutritionally Valuable Microgreens?" Horticulturae, vol. 10, no. 3, Multidisciplinary Digital Publishing Institute, Mar. 2024, pp. 249–49, https://doi.org/10.3390/horticulturae10030249.

Much Ado About Magnesium

Magnesium is crucial for over 300 enzymatic reactions in the body, aiding in regulating blood sugar and blood pressure, muscle and nerve function, bone strength, and heart rhythm.

It's **particularly beneficial for women**, potentially easing menstrual cramps and fatigue. Foods rich in magnesium include **leafy greens**, legumes, nuts, seeds, whole grains, and certain meats and fish.

The FDA recognizes magnesium's role in reducing hypertension risk, recommending a **daily intake of 320-420 mg** for adults.

However, excessive magnesium can cause adverse effects, and certain medications may interact with magnesium supplements.

For microgreens high in magnesium, consider these options:

1. Spinach
2. Swiss chard
3. Kale
4. Beet
5. Mustard

These microgreens are not only rich in magnesium but also in

other vitamins and minerals, making them a nutritious addition to any diet. Healthy Woman, 2024-03-27

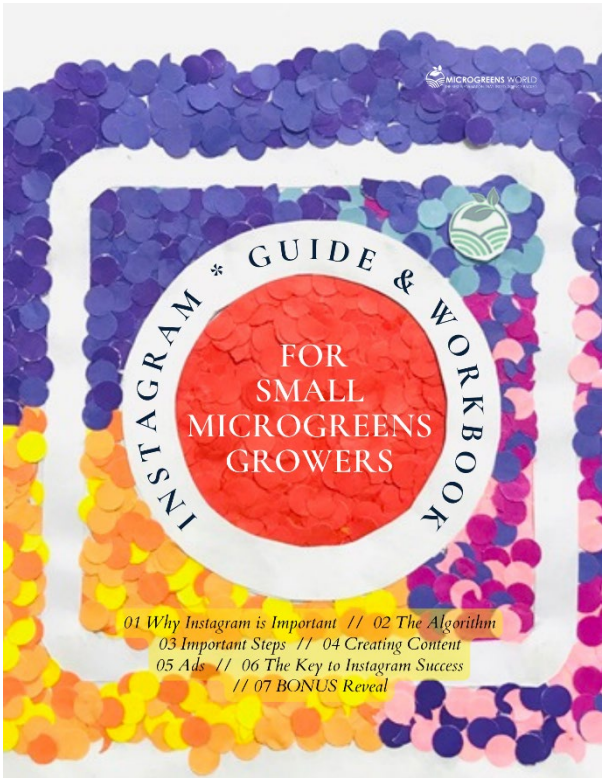
Become the Face of Your Farm

Erin Benzakein shares her journey from a struggling flower farmer to a successful business owner by becoming the face of her farm, Floret. Initially, despite producing high-quality flowers, she faced challenges in sales and marketing.

The turning point came when she started sharing **her story, connecting with people through blogging and professional photography**, and shifting from impersonal sales tactics to forming genuine connections.

This approach, coupled with **strategic social media use**, transformed her business, leading to sold-out products and significant media attention, underscoring the power of personal branding in agriculture.

Become the face of your microgreen farm. Get the Guide!



The Featured Article

Building a Resilient Food Future & Growing Young Minds

There is a woman named Katherine Soll on the busy streets of New York City. Born and raised in the city that never sleeps, Katherine had always been fascinated by the diverse tapestry of cultures and the resilience of its people.

As she grew older, she began to notice the stark inequalities that plagued her beloved city, mainly when it came to access to fresh, healthy food.

Determined to make a difference, Katherine embarked on a journey that would change not only her life but the lives of countless young people in underserved communities.

With a heart full of compassion and a mind brimming with innovative ideas, she founded Teens for Food Justice (TFFJ), an organization dedicated to empowering youth through urban agriculture.

At the core of TFFJ's mission was a simple yet powerful idea: **to use hydroponic farming as a tool for education and social change**. Katherine saw the potential in this soilless cultivation technique, recognizing its ability to bring fresh produce to the heart of the city while teaching young people valuable skills in **science, technology, engineering,** and **math** (STEM).

But for Katherine, TFFJ was about more than just growing plants. It was about nurturing the seeds of hope and resilience in the hearts of the youth she worked with. **She understood the systemic**

nature of food inequity, which she referred to as "food apartheid." She was determined to address its root causes. By providing hands-on experience in hydroponic farming, Katherine empowered young people to become agents of change in their own communities.

Through her work with TFFJ, Katherine fostered a supportive and collaborative community that celebrated innovation and encouraged personal growth. She faced challenges head-on, learning valuable lessons about **leadership and the importance of building a solid team**. Her unwavering commitment to the cause inspired those around her, and soon, TFFJ began to expand its reach.

As the organization grew, Katherine's vision for a more equitable and sustainable future only strengthened. She called upon leaders in

the vertical farming industry to join her in investing in the next generation, urging them to provide internships, tours, and real-world experiences for young people passionate about sustainable agriculture. She knew that by bridging the gap between industry and education, they could cultivate a workforce dedicated to building a greener, more just world.

Katherine's compassion and empathy shone through in every aspect of her work. She listened to the stories of the communities she served, understanding their struggles and their dreams. She celebrated their successes and stood by them in times of hardship. Through her tireless efforts, she showed that urban agriculture was not just about growing food but about growing hope, resilience, and the potential for change.

In a world often marked by division and inequality, Katherine Soll stands as a beacon of hope and compassion.

Through her work, Soll aims to transform urban landscapes into thriving spaces of food production and education, ensuring access to fresh, nutritious food for all while nurturing the potential of youth in the fight against food insecurity.

As Katherine's story continues to unfold, her message remains clear. By rooting for change and nurturing the next generation, we can create a future where everyone has access to fresh, healthy food and the opportunity to thrive. Through organizations like **Teens for Food Justice**, we can transform urban landscapes into vibrant spaces of education, empowerment, and growth.

Vertical Farming Podcast 204-03-21

Ship Farming? That's Novel

Brent Floating Farms is pioneering an innovative approach to sustainable agriculture by deploying floating farms on cargo ships.

This venture, focusing on eliminating chemical use and surpassing traditional organic farming methods, aims to address environmental degradation, challenges faced by commercial farmers, and potential food shortages.

By leveraging **controlled environments and aquaponics**, the project promises water conservation, waste reduction, and year-round production of high-quality produce.

Brent Floating Farms is preparing for a $20M equity fundraise to scale operations and promote this sustainable, chemical-free farming approach. [iGrow News, 2024-03-29]

Duncan, OK, a non-profit organization, provides jobs for adults with intellectual disabilities.

Think Ability, a non-profit organization in Duncan, Oklahoma, teaches horticulture to adults with intellectual disabilities, providing them with meaningful employment

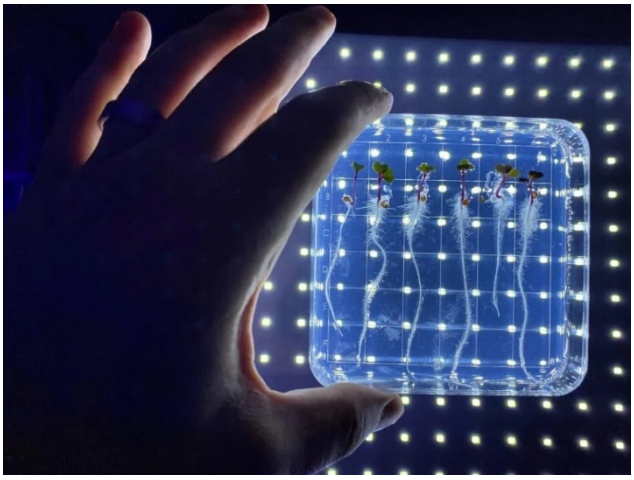
through **planting microgreens and flowers**.

Founded in 1982, Think Ability aims to support independent living and offer residential services for individuals with various developmental disabilities. Their initiative not only empowers participants by engaging them in productive work but also addresses the local community's need for healthy food options.

With a garden cafe and a t-shirt print shop, the organization contributes significantly to the community, showcasing the substantial impact of its relatively small operation in comparison to larger producers.

For more information, you can read the full article on KSWO's website. ABCNews 7 Lawton, OK *Mar. 26, 2024*

Shipshape Urban Farms and Above Space Launch Seeds to ISS



Shipshape Urban Farms and Above Space have partnered to launch seeds to the International Space Station (ISS) as part of the MISSIE experiment, aiming to study plant growth under microgravity and radiation conditions.

This innovative project, scheduled for March 2024 aboard the SpaceX Dragon resupply mission SPX-30, seeks to advance sustainable agriculture on Earth and support long-term space

habitation by examining the resilience and growth patterns of various plant species in space.

Insights from this research could revolutionize agricultural practices and contribute to food security and space exploration sustainability.

However, this expands interest in agriculture and the need for nutrient-dense foods for astronauts. In my 2021 article, [Astronauts Aren't Wimps, And They Eat Microgreens | Microgreens World](), I cover how NASA has pioneered growing microgreens in space. [iGrow News, 2024-03-19]()

Brought to you by **Doc Green**, Andrew Neves' personally trained AI assistant. "You may ask me anything about microgreens."