

MICROGREENS WEEKLY DIGEST

07 JULY 2022

VOL 2025 No.22

THE HIGHLIGHT

- Spinach microgreens block 54% of aging compounds
- \$3.16 billion microgreens market growing 12% annually
- Teens build \$10,000 monthly microgreen businesses successfully
- Smart sensors make foolproof microgreen growing possible



UPCOMING EVENTS

- Next cohort of the **Commercial Microgreens Startup** course is now open! [SIGNUP HERE](#)



- Twin Cities Veg Fest 2025 Saint Paul, USA

21.09.2025 - 21.09.2025

Twin Cities Veg Fest is now the biggest plant-based festival in the Midwest

WHAT YOU MISSED THIS WEEK

The microgreens industry delivered groundbreaking developments this week that prove these tiny greens are reshaping both health and business landscapes.

Scientists at Shenzhen University discovered baby spinach microgreens block over 54% of AGE formation—the compounds that accelerate aging in baked goods. When researchers added spinach to bread, they reduced harmful aging compounds by up to 57% without affecting taste.

Meanwhile, the global microgreens market hit \$3.16 billion in 2024, growing at 12% annually toward nearly \$10 billion by 2034. This boom reflects increasing consumer awareness of microgreens' 4-40 times higher nutrient density compared to mature plants.

Real-world success stories emerged from Tacoma, where at-risk youth built thriving microgreen businesses. Two sisters now earn \$10,000 monthly, while 100% of participants overcame food insecurity through the program.

Technology advanced with VSB Technical University's automated growing system that removes guesswork from cultivation. Smart sensors monitor temperature, humidity, and water quality, making microgreens accessible to complete beginners while maximizing nutritional output.



NUTRITION SCIENCE

Your Bread Is Aging You

Picture this: every time you bite into toast, cookies, or any baked good, tiny molecular changes are happening in your body. It's like caramelizing onions – but instead of creating delicious flavor, it's creating compounds that age you faster.

These compounds are called AGEs (advanced glycation end products). When sugars stick to proteins in your body, they form these aging accelerators. They build up over time and fuel diabetes, heart disease, and premature aging. The scary part? Most people have no idea it's happening.

But what if I told you that tiny green leaves could put the brakes on this process?

The Microgreen That Fights Back

Recent groundbreaking research has identified baby spinach microgreens as nature's most powerful weapon against AGE formation. Scientists at Shenzhen University tested seven different microgreens over four weeks, and [baby spinach came out as the clear winner – blocking over 54% of AGE formation](#). That's like cutting your aging acceleration in half.

Here's what makes this research remarkable: they didn't just test spinach in a lab dish. They actually baked it into bread to see if it would still work in real food. And it did. The spinach-fortified bread reduced harmful AGEs by 29-57% in the crust, where most damage occurs during baking.

Think about foods that go through high heat – breads, cookies, roasted items. These are exactly where AGEs form most rapidly. When the researchers created low-spinach bread (about 2 handfuls of spinach per loaf) and high-spinach bread (about 3 handfuls), both showed significant protection without ruining taste or texture. Ten taste-testers found the bread perfectly acceptable across flavor, appearance, and overall quality.

The protective magic comes from chlorophyll-related compounds with tongue-twisting names:

[pheophorbide a](#) and [pyropheophorbide a](#). Think of them as tiny bodyguards protecting your proteins from sugar damage through powerful antioxidation. The research showed that spinach leaves contain 1.3-5.2 times more of these protective compounds than stems, so focus on those tender green leaves.

From Lab to Your Kitchen

What's particularly exciting is how accessible this protection is. You don't need special supplements or complicated protocols. Adding baby spinach microgreens to your baking delivers measurable benefits while keeping food delicious. The researchers proved exactly which compounds provide protection and how they work – removing any guesswork about the science.

This isn't just about slowing aging, though that's pretty compelling. It's about taking control of one of the hidden processes that modern diets accelerate. Every slice of bread, every cookie, every roasted vegetable creates these aging compounds. But now we know that something as simple as baby spinach microgreens can significantly reduce that damage.

The beauty of microgreens is their practicality. They're easier to grow at home than full-size plants, ready to harvest in just 7-14 days, and pack intense nutrition into small leaves.

Whether you grow them yourself or buy them fresh, these little green powerhouses offer real protection against sugar-related aging.

Whether you grow them yourself or buy them fresh, these little green powerhouses offer real protection against sugar-related aging. The research proves that sometimes the smallest changes create the biggest impact on your health.

Baby spinach microgreens aren't just trendy garnishes - they're functional foods with scientifically-proven protective power.

Your next loaf of bread could be the start of something bigger.

Source: Zhou, Q., Liang, W., Wan, J., & Wang, M. (2023). Spinach (*Spinacia oleracea*) microgreen prevents the formation of advanced glycation end products in model systems and breads. *Current Research in Food Science*, 6, 100490. <https://doi.org/10.1016/j.crfs.2023.100490>

PLEASE NOTE: While these studies present promising preliminary data on the nutritional and functional properties of microgreens, they do not yet meet the rigorous standards required for commercial practice. This is primarily due to the inherent variability of biological materials and the unspecified or single-source nature of the microgreen samples used. Substantial additional research, including controlled cultivation studies and validation across multiple batches, is necessary before these scientific findings can confidently inform commercial investment decisions or product claims.

FUN FACTS

The Microscopic Mustard Bomb

The spicy kick in radish or mustard microgreens is a chemical weapon. Inside the cells, two compounds are stored separately. When you chew, they mix and detonate, creating pungent isothiocyanates. You're not tasting a flavor; you're triggering the plant's microscopic booby trap against predators

The Ghost in the Green

Most microgreens are just embryonic leaves (cotyledons) fed by the seed, offering an "echo" of the plant's true flavor. Connoisseurs often wait for the first true leaves. Powered by photosynthesis, they possess a more complex, authentic taste—the plant's first real word, not just a ghost.

A Forgotten Victorian Parlor Trick

Long before the 1980s trend, microgreens were a Victorian parlor trick. To combat bleak winters, households practiced "salading," growing mustard and cress on damp flannel on their windowsills. This provided a constant, fresh, peppery garnish and was a symbol of domestic ingenuity against the gloom.

WELCOME NEW MEMBERS

NAME	CITY	COUNTRY
L. Mextra	Havana	Cuba
Daxa Spa	London	England
Alex Free	Berlin	Germany
Parveen Roach		India
Pandurang Jadhav		India
Jonathan Putnam	Bangalore	India
rahul pandey	Bangalore	India
Shyam	Delhi	India
Chinthalapalli Reddy		India
Harsh Patel	Ahmedabad	India
Sundararajan	Chennai	India
Shivanand J		India
Rudi Pauwels	Zurich	Switzerland
Dina Pavic	Stockton	United States
Aileen Kilfeather	Titusville	United States
Joyce L Moore		United States
Becky Edwards	Federal Way	United States
Hithesh Gazzala		United States
I Texeira	San Jose	United States
Judy Rienzi	Factoryville	United States
charlie lee	Houston	United States



COMMUNITY CORNER



Space Microgreens Could Transform Your Health

Did you know astronauts are growing microgreens 250 miles above Earth right now?

The Axiom-4 mission aboard the International Space Station features Hungarian astronaut Tibor Kapu conducting groundbreaking microgreens experiments in zero gravity. Why does this matter for your kitchen counter?

Space research proves what health enthusiasts already know—microgreens pack incredible nutritional power. When NASA invests millions in growing these tiny plants for astronaut health, you should pay attention.

These space-grown greens could hold keys to cellular resilience and adaptation that benefit everyone.

Here's what astronauts understand that many Earth-dwellers miss: fresh, nutrient-dense food directly impacts performance and recovery.

If microgreens are good enough to sustain humans during months-long space missions, imagine what they could do for your daily energy and immune system.

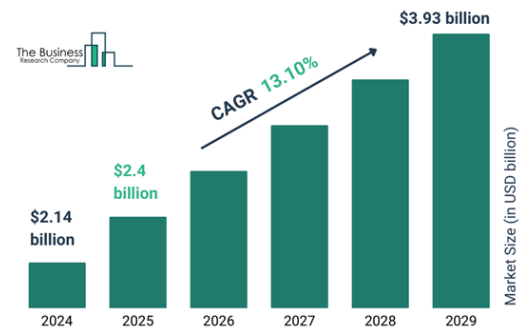
The research happening 113 orbits above us isn't just about space exploration. It's about discovering how these powerful plants can transform human health—starting in your own home.

Your body deserves the same nutrition astronauts rely on. Start growing microgreens today.

Sources: Axiom Space. (2025, July 4). Ax-4 Mission Update: Flight Day #9. Axiom Space Mission Blog. <https://www.axiomspace.com/mission-blog/ax4-fd9>

Dube, M. (2025, July 4). Shubhanshu Shukla hits a ton—completes 100 Earth orbits aboard ISS. NewsBytes. <https://www.newsbytesapp.com/news/science/indian-astronaut-shukla-surpasses-100-earth-orbits/story>

Microgreens Global Market Report 2025



Microgreens Market Booms: Your Health Investment

Think microgreens are just a fancy restaurant garnish? Think again. The global microgreens market just hit \$3.16 billion in 2024 and it's growing fast—at about 12% each year. By 2034, we're looking at nearly \$10 billion worth of these tiny nutritional powerhouses.

Here's what's driving this growth: people like you are waking up to the health benefits. These little greens pack 4-40 times more nutrients than their full-grown versions. Broccoli microgreens lead the pack, helping reduce inflammation and cancer risk while supporting heart health.

Indoor farming is changing everything. No more waiting for seasons or worrying about weather. Commercial greenhouses control 46% of production, but vertical farms are growing at 12.5% yearly. Even home growers are jumping in—urban farming lets you harvest nutrient-dense food in just 7-14 days.

The numbers don't lie: North America dominates with 65% market share, but Asia-Pacific is the fastest growing region. Restaurants, retailers, and health-conscious consumers are all driving demand for these "vegetable confetti" additions.

What does this mean for your health? You're looking at access to year-round, nutrient-dense foods that can boost immunity, support weight management, and fight chronic disease. Whether you're growing at home or buying from stores, microgreens offer serious health returns on a small investment.

Source: The Business Research Company. (2025). Microgreens global market report. <https://www.thebusinessresearchcompany.com/report/microgreens-global-market-report>



Youth Microgreen Farms Change Lives Forever

Did you know teaching teens to grow microgreens can completely transform their lives? The Making A Difference Foundation in Tacoma just proved something amazing.

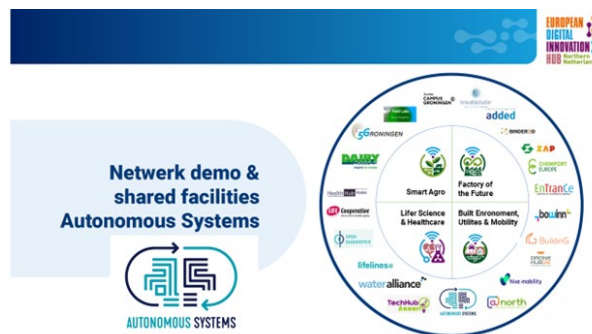
Their 20-week program teaches at-risk youth ages 16-25 how to grow microgreens using hydroponics. But here's what shocked everyone: these kids became real entrepreneurs. Out of 27 participants, 10 now run their own agricultural businesses. Two twin sisters who lost both parents? They're making \$10,000 monthly from their microgreen operation.

The results speak for themselves. Research shows programs like this boost vegetable intake by 45% and cut fast food consumption by 40%. Even better - 100% of participants are no longer food insecure.

Think about it: if troubled teens can build thriving microgreen businesses, what could you do? Whether you're growing at home, selling at markets, or supplying restaurants, these nutrient-packed greens offer serious profit potential with minimal risk.

Your body craves the vitamins microgreens provide. Your wallet will thank you for the income opportunity. Why wait when you could start growing today?

Source: Doyal, K. (2025, July). Making a difference foundation empowers youth with farming and business skills. The Seattle Medium. <https://seattlemedium.com/youth-empowerment-tacoma-foundation/>



Smart Sensors Transform Microgreens Growing Success

Ever wondered if technology could make growing microgreens foolproof? A groundbreaking study from VSB Technical University just proved it can.

Researchers developed an automated system that monitors temperature, humidity, light, and water quality for microgreens. The results? Even complete beginners can now grow nutritious microgreens without soil, using minimal water, and requiring zero agricultural knowledge.

Here's what makes this exciting for you: The system handles everything automatically. You simply insert seeds and let smart sensors do the work. One restaurant in Czech Republic already tested this technology with remarkable success.

But here's the real game-changer - this isn't just about convenience. The system tracks exactly how much nutritional value you're producing and how much water you're saving. Think about it: fresh microgreens growing right in your kitchen while reducing your environmental impact.

Whether you're a home grower wanting consistent results or a commercial operation seeking efficiency, this technology removes the guesswork. Your microgreens get optimal conditions every single time.

Source: SB Technical University of Ostrava. (2024). Smart technology helps grow microgreens. VSB-TUO Alumni News. <https://alumni.vsb.cz/en/news-detail/?reportid=49191>



CREATIVE RECIPES



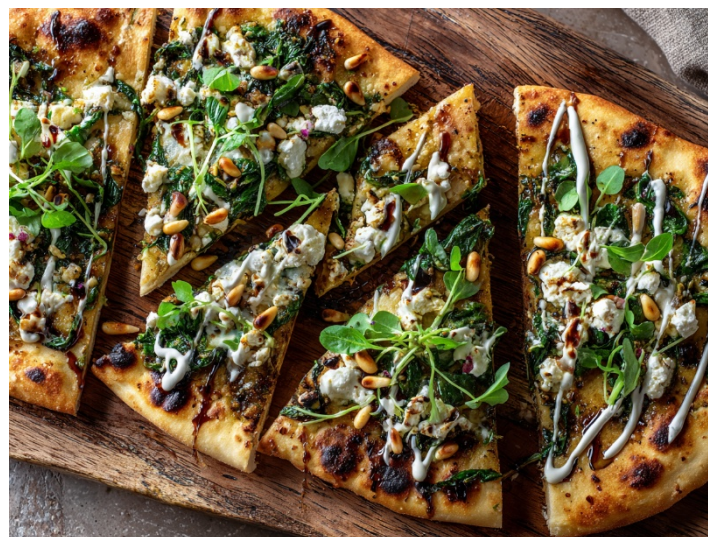
Spinach Myth

Spinach *oleracea* has quite the journey through history, built on bad math that fooled the entire world.

Back in 1870, German scientist Erich von Wolf miscalculated spinach's iron content by placing a decimal point in the wrong spot. *Instead of 3.5 milligrams per 100 grams, he recorded 35 milligrams.* That's ten times the actual amount! This bogus number spread across Europe and beyond, making spinach seem like an iron powerhouse everywhere.

Originally from Persia, where it was called "aspanakh," spinach traveled through Arab traders to reach medieval European tables by the 11th century. But it was Popeye in 1929 who turned this leafy green into a global sensation. American spinach consumption jumped 33%, while countries worldwide embraced the "iron-rich" vegetable.

The error wasn't corrected until 1937, but by then spinach had conquered kitchens from Tokyo to London. Ironically, it packs a real nutritional punch – *loaded with folate, vitamin K, and antioxidants.* From ancient Persian stews to modern Asian stir-fries, this green keeps surprising us.



Popeye's Persian Dream: Spinach Microgreen & Pomegranate Molasses Flatbread

You know what's funny? We've been celebrating spinach for all the wrong reasons for nearly a century.

That legendary iron content that made Popeye strong? Pure mathematical accident. But here's the beautiful irony – spinach deserves every bit of praise it gets, just for completely different reasons.

This dish pays homage to spinach's true Persian roots while celebrating what these tender microgreens actually bring to the table. We're talking about concentrated nutrition in every bite, plus that satisfying crunch that baby spinach wishes it had.

Spring has always been the season when we crave fresh, vibrant flavors after months of heavy winter eating. This flatbread captures that awakening perfectly.

1

Recipe Information

Prep Time: 25 minutes

Cook Time: 12 minutes

Category: Light Lunch/Appetizer

Method: Baking

Cuisine: Persian-Mediterranean Fusion

Yield: 4 servings



2

Ingredients

For the Flatbread:

- 1 store-bought naan or pita bread (or homemade if you're feeling ambitious)
- 3 cups fresh spinach microgreens
- 1/4 cup pomegranate molasses
- 2 tablespoons olive oil
- 1/2 red onion, thinly sliced
- 1/2 cup crumbled feta cheese
- 1/4 cup toasted pine nuts
- 2 cloves garlic, minced

For the Yogurt Drizzle:

- 1/2 cup Greek yogurt
- 1 tablespoon honey
- 1 teaspoon lemon zest
- Pinch of sea salt

3

Preparation

1. Start by preheating your oven to 425°F. Here's where we build layers of flavor instead of just throwing greens on top.
2. Heat olive oil in a large skillet over medium heat.
3. Add those sliced onions and cook until they're golden and slightly caramelized – about 8 minutes.
4. Toss in the minced garlic for the last minute. You want that garlic fragrant but not bitter.
5. Now comes the magic. Add half of your spinach microgreens to the pan. They'll wilt slightly but keep most of their crunch.
6. Drizzle in that pomegranate molasses and toss everything together. The microgreens should be coated but not drowning.
7. Remove from heat.
8. Brush your flatbread with a little olive oil.
9. Spread the spinach mixture evenly across the surface
10. Then scatter the feta and pine nuts on top.

3

Preparation
(continued)

11. Bake for 10-12 minutes until the edges are golden and the feta is slightly melted.
12. While it's baking, whisk together your yogurt, honey, lemon zest, and salt.

4

Plating

Remove the flatbread and immediately top with the remaining fresh spinach microgreens.

This gives you two textures – the slightly wilted ones that absorbed all those Persian flavors, and the crisp, fresh ones that pop in your mouth.

Drizzle the honey yogurt across the top in zigzag patterns.

Cut into wedges and serve immediately while everything's still warm and the microgreens maintain their contrast.



If you're curious about more ways to celebrate spinach in all its forms, Yotam Ottolenghi's cookbooks "Plenty" and "Simple" feature some brilliant spinach combinations that'll change how you think about this humble green forever.

5

Benefits of Spinach Microgreens for Health

Here's what Popeye should have been celebrating: *spinach microgreens contain up to 40 times more nutrients than their mature counterparts.*

We're talking concentrated vitamin K for bone health, folate for brain function, and antioxidants like lutein that protect your eyes.

These tiny powerhouses also pack vitamin C, magnesium, and iron (yes, real iron – just not superhero levels). The best part?

Your body absorbs these nutrients more easily from microgreens because they're in their most bioavailable form.

Plus, that satisfying crunch means you'll actually want to eat them regularly.

IN THE NEWS

Microgreens World Validates \$3.4B Market

Why is the University of Connecticut citing Microgreens World in their official research? The market value of microgreens is expected to be \$3.4 billion by 2030, with North America leading the market. When academic institutions reference Microgreens World's market analysis, you know the industry is a legitimate one. The increasing demand for organic foods, consumer health consciousness, and the growing trend of plant-based diets are among the factors driving this growth. UConn's validation of Microgreens World's forecasting proves these tiny greens aren't just trendy - they're your ticket to the future of nutrition.

Source: Gray, S. (2025, April). The amazing power of microgreens: Easy to grow and a superfood (Publication EXT116). UConn Extension.
<https://publications.extension.uconn.edu/publication/microgreens/>



Join Microgreens World for a four-week deep-dive into the most common avenues for building and strengthening your microgreens customer base. Unlike most programs, you're watching a bunch of long and boring theoretical videos that leave you more confused than when you started. The goal of the Commercial Microgreens Startup program is to do this together, one step at a time - so you can finally have financial independence!

REGISTER

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