Volume 2024 Number 42 MICROGREENS WORLD Monday November 18 2024

WEEKLY DIGEST

BUILD A SUSTAINABLE MICROGREENS BUSINESS: FIRST-YEAR ESSENTIALS

Microgreens Business Mastery

If you want to get crystal clear on the EXACT STEPS you should be taking right now to achieve your business growth goals, then read on to GET STARTED.

GROWNBY: THE COOPERATIVE APP & BUSINESS MODEL FOR SELLING MICROGREENS

CREATIVE RECIPES: Enjoy 5 Delicious Microgreens-infused Soup Recipes
NUTRITION SCIENCE: Ignite Your Health with Powerhouse Microgreens!
CULTIVATION TECHNIQUES: Vertical Farming Grow Lights for Beginners

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

Build A Sustainable Microgreens Business: First-Year Essentials

Vol. 2024 No. 42 Monday, November 18, 2024

I've designed this series to directly address the **key pain points** the community identified. It is practical and solution-focused. Each book serves a specific purpose in your microgreens business journey.

Nutrition Science

Ignite Your Health with Powerhouse Produce: Nutrient Heroes!

The CDC study "Defining Powerhouse Fruits and Vegetables: A Nutrient Density Approach" tackles the classification of certain fruits and vegetables as powerhouse foods due to their high nutrient density.

The research aimed to establish a scheme to define these powerhouse fruits and vegetables (PFV) by assessing their nutrient content relative to caloric intake.

By focusing on 17 essential nutrients, including vitamins and minerals like potassium, fiber, calcium, iron, and vitamins A, C, and K, the study identified foods that meet or exceed a nutrient density score of 10%.

Out of the 47 foods analyzed, 41 were classified as powerhouse foods.

Cruciferous vegetables (such as watercress, Chinese cabbage, and kale) and green leafy vegetables (like spinach and chard) were prominently ranked, showcasing their nutritional superiority.

The study illustrates that defining PFVs based on their nutrient density can improve public understanding of healthful eating, encouraging the consumption of fruits and vegetables most protective against chronic disease.

Moreover, this nutrient-dense classification can serve as an educational tool by highlighting the concept of getting the greatest nutritional value per calorie consumed, which can guide consumers in making healthier dietary choices.

This research article proposes a new definition of "powerhouse fruits and vegetables" (PFV), based on the idea of **nutrient density**.

The authors argue that current definitions, which focus on specific food groups, are too simplistic and not very helpful.

They created a **scoring system that measures the amount of essential nutrients** (like vitamins and minerals) a fruit or vegetable provides **per 100 calories**.

The foods with the highest scores were deemed PFV, providing a more quantifiable way to understand the nutritional value of different fruits and vegetables.

The study found that **41 out of 47 foods met the PFV criteria**, suggesting the validity of this new classification scheme.

This research aims to provide a more comprehensive understanding of nutrient density and empower consumers to make informed dietary choices.

It provides a clear, evidence-based system for identifying foods that should be prioritized in a diet aiming to prevent chronic diseases.

The notable powerhouse microgreens identified include watercress, spinach, and kale.

These microgreens are rich in vital nutrients:

- **Watercress**: High in vitamins A, C, and K, calcium, and iron.
- **Spinach**: Contains vitamins A, C, K1, folic acid, iron, and calcium.
- **Kale**: Packed with vitamins A, K, C, B6, calcium, potassium, copper, and manganese.

These microgreens are heralded not only for their nutrient profiles but also for their potential health benefits, such as improving heart health, reducing cancer risks, and supporting immune function.

Source: Di Noia, J. (2014). Defining Powerhouse Fruits and Vegetables: A Nutrient Density Approach. *Preventing Chronic Disease, 11*. https://doi.org/10.5888/pcd11.130390

Enhancing Cognitive Health: Microgreens in Aging Nutrition

Recent research examining 1,220 elderly patients reveals significant connections between cognitive decline and deficiencies in magnesium (Mg) and calcium (Ca).

The study divided participants into four groups based on their blood levels of these minerals.

It assessed cognitive function using standardized tests—the Folstein Test and Clock Drawing Test (CDT).

Results showed that patients deficient in either **Mg, Ca**, or both minerals demonstrated poorer cognitive performance compared to those with normal levels.

This research paper investigates the **relationship between magnesium and calcium deficiencies and cognitive function** in older hospitalized adults.

The study examines data from over 1200 patients aged 60 and older, analyzing the impact of **hypomagnesemia**, **hypocalcemia**, and the concurrent presence of both deficiencies on cognitive performance as measured by the Mini-Mental State Examination (MMSE) and Clock-Drawing Test (CDT).

After controlling for factors like age, sex, body mass index, and comorbidities, the study found that both hypomagnesemia and hypocalcemia were associated with reduced cognitive performance, suggesting that **maintaining adequate levels of these minerals is crucial for cognitive health** in aging individuals.

Even after controlling for variables like age, body mass index, and other health conditions, **both mineral deficiencies independently and jointly contributed to cognitive decline**.

Specifically, low magnesium levels alone corresponded to a 0.93-point decrease in MMSE scores, while combined deficiencies led to even more pronounced cognitive impairment.

These findings emphasize the critical role of maintaining adequate Mg and Ca levels in preserving cognitive health among older adults.

The study suggests dietary intervention as a potential solution.

Microgreens such as Swiss chard, lettuce, and kale are excellent sources of both minerals.

These nutrient-rich foods could help seniors address potential deficiencies and support cognitive function.

Source: Kravchenko, G., Stephenson, S. S., Gutowska, A., Klimek, K., Chrząstek, Z., Pigłowska, M., Kostka, T., & Sołtysik, B. K. (2024). The concurrent association of magnesium and calcium deficiencies with cognitive function in older hospitalized adults. *Nutrients, 16* (21), 3756. https://doi.org/10.3390/nu16213756

Creative Recipes

Emerald Velvet Sweet Potato and White Bean Soup with Microgreen Crown

A velvety, dairy-free soup that combines the earthiness of sweet potatoes with the creaminess of white beans, crowned with a vibrant mixture of nutrient-dense microgreens. This soup celebrates the transition between seasons with its warm base and fresh, crisp topping.

Recipe Information

- Prep Time: 20 minutes

- Cook Time: 40 minutes
- Category: Soup
- Method: Stovetop
- Cuisine: Modern Mediterranean
- Yield: 6 servings

Ingredients

- 2 large, sweet potatoes, peeled and cubed
- 2 cans (15 oz each) of cannellini beans, drained and rinsed
- 1 onion, finely diced
- 4 garlic cloves, minced
- 2 tablespoons olive oil
- 6 cups vegetable broth
- 1 tablespoon fresh thyme
- 1 oz broccoli microgreens
- 1 cup radish microgreens
- 1 cup pea shoots
- Extra virgin olive oil for drizzling

Preparation

1. Heat olive oil in a large Dutch oven. Sauté onions until translucent.
2. Add garlic and thyme, and cook until fragrant.
3. Add sweet potatoes and beans, then pour in vegetable broth.
4. Simmer for 30 minutes until sweet potatoes are tender.
5. Blend until smooth using an immersion blender.

Plating

Ladle the hot soup into shallow bowls. Create a microgreen crown by arranging a mixture of broccoli microgreens, radish microgreens, and pea shoots in the center. Drizzle with high-quality olive oil and finish with fresh cracked pepper.

Benefits of Microgreens Used

- Broccoli microgreens: Rich in sulforaphane, offering potential cancer-fighting properties
- Radish microgreens: Provide up to 40 times more nutrients than mature plants
- Pea shoots: Add texture and high levels of vitamins A and C

Coconut Butternut Squash and Microgreen Soup with Crispy Seaweed

A velvety, golden soup that marries the sweetness of butternut squash with coconut milk, elevated by the peppery notes of radish microgreens and crispy nori strips.

Recipe Information

- Prep Time: 25 minutes
- Cook Time: 45 minutes
- Category: Soup
- Method: Stovetop
- Cuisine: Fusion
- Yield: 6 servings

Ingredients

- 1 large butternut squash, peeled and cubed
- 2 tablespoons coconut oil
- 2 shallots, finely chopped
- 3 tablespoons white miso paste
- 1 can (400ml) coconut milk
- 4 cups vegetable stock
- 2 tablespoons rice vinegar
- 2 sheets nori, cut into thin strips
- 1 oz radish microgreens
- Black sesame seeds for garnish

Preparation

1. Heat coconut oil in a large pot. Sauté shallots until translucent.
2. Add squash and cook until edges start to caramelize.
3. Stir in miso paste, then add stock and coconut milk.
4. Simmer for 30 minutes until squash is tender.
5. Blend until smooth; stir in rice vinegar.
6. Toast nori strips in a dry pan until crisp.

Plating

Ladle soup into warm bowls. Top with a generous handful of radish microgreens, crispy nori strips, and a sprinkle of black sesame seeds.

Microgreen Benefits

Radish microgreens provide high levels of vitamins C and E and antioxidants. They add a fresh, peppery contrast to the soup's creamy texture.

White Bean and Fennel Soup with Mixed Microgreen Crown

This ethereal soup marries the earthiness of white beans with the delicate anise notes of fennel, crowned with a vibrant mix of microgreens that add both visual drama and nutritional prowess.

Recipe Information

- Prep Time: 20 minutes
- Cook Time: 40 minutes
- Category: Soup
- Method: Stovetop
- Cuisine: Mediterranean-Inspired
- Yield: 6 servings

Ingredients

- 3 cans white beans, drained and rinsed
- 2 fennel bulbs, thinly sliced (fronds reserved)
- 3 tablespoons olive oil
- 1 leek, white part only, finely sliced
- 4 garlic cloves, crushed
- 1 tablespoon fennel seeds, toasted
- 6 cups vegetable stock
- 2 tablespoons lemon juice

- Mixed microgreens (pea shoots, sunflower, amaranth)
- White pepper to taste

Preparation

1. Sauté fennel and leek in olive oil until softened and starting to caramelize.
2. Add garlic and fennel seeds, and cook until fragrant.
3. Add beans and stock; simmer for 25 minutes.
4. Blend two-thirds of the soup, leaving some texture.
5. Season with lemon juice and white pepper.

Plating

Pour the soup into shallow bowls. Create a microgreen "crown" using mixed varieties, tucking in fennel fronds for height. Finish with a drizzle of best-quality olive oil.

Microgreen Benefits

The mix of microgreens provides a complete protein profile, along with high levels of vitamins A, C, and K.

Pea shoots offer iron. In contrast, sunflower microgreens contribute vitamin E and healthy fats.

Sweet Potato and Red Lentil Sunshine Soup

A vibrant, warming soup that combines the sweetness of roasted sweet potatoes with earthy red lentils, brightened by turmeric and topped with spicy micro-mustard greens.

Recipe Information

- Prep Time: 30 minutes
- Cook Time: 50 minutes
- Category: Soup

- Method: Roasting + Stovetop
- Cuisine: Global Fusion
- Yield: 8 servings

Ingredients

- 2 large sweet potatoes, roasted and peeled
- 1 cup red lentils
- 2 tablespoons coconut oil
- 1 onion, diced
- 3 tablespoons ginger, minced
- 2 teaspoons turmeric
- 1 teaspoon ground coriander
- 6 cups vegetable stock
- 1 can of coconut milk
- 1 oz mustard microgreens
- Black lime powder (optional)
- Toasted coconut flakes

Preparation

1. Roast sweet potatoes until caramelized.
2. Sauté onion and ginger in coconut oil until golden.
3. Add spices and cook until fragrant.
4. Add lentils, stock, and roasted sweet potato.
5. Simmer until lentils are tender.
6. Stir in coconut milk and blend until smooth.

Plating

Serve in deep bowls, topped with a generous handful of mustard microgreens. Sprinkle with black lime powder and coconut flakes. Add a final drizzle of coconut milk.

Microgreen Benefits

Mustard microgreens are rich in glucosinolates known for their anti-inflammatory properties. They also provide significant amounts of vitamin E and potassium.

Miso-Glazed Mushroom and Buckwheat Soup

A deeply satisfying soup that combines the umami richness of miso-glazed mushrooms with nutty buckwheat, topped with delicate corn microgreens for a sweet, fresh finish.

Recipe Information

- Prep Time: 35 minutes
- Cook Time: 45 minutes
- Category: Soup
- Method: Stovetop
- Cuisine: Asian-Fusion
- Yield: 6 servings

Ingredients

- 500g mixed mushrooms (shiitake, oyster, king oyster)
- 1 cup buckwheat groats
- 3 tablespoons white miso
- 2 tablespoons mirin
- 1 tablespoon rice vinegar
- 2 tablespoons sesame oil
- 6 cups dashi stock (kombu-based for vegetarian)
- Corn microgreens
- Toasted sesame seeds
- Chili oil for serving

Preparation

1. Toast buckwheat until fragrant, then cook in 2 cups water until tender.
2. Slice mushrooms and toss with miso, mirin, and sesame oil.
3. Roast mushrooms until glazed and the edges are crispy.
4. Heat dashi stock, add cooked buckwheat and half the mushrooms.
5. Simmer gently to meld flavors.

Plating

Pour soup into deep bowls. Top with remaining glazed mushrooms, a generous portion of corn microgreens, and a scatter of sesame seeds. Finish with a drizzle of chili oil.

Microgreen Benefits

Corn microgreens are rich in lutein and zeaxanthin, supporting eye health. They also

provide a complete protein profile and are high in fiber.

Plating

- Arrange cappelletti in a circular pattern in warmed, shallow black ceramic bowls.
- Pour truffle-microgreen sauce over pasta.
- Garnish with fresh sunflower microgreens, shaved truffle, and edible flowers.
- Finish with a light dusting of purple cabbage microgreen powder.

Benefits of Specific Microgreens

- Broccoli microgreens: Cancer-fighting sulforaphane, optimized by heat treatment
- Red cabbage microgreens: Cardiovascular support, reduces LDL cholesterol
- Sunflower microgreens: Complete protein, B vitamins, minerals

Community News

Marketplace Grocery Stores Now Stocking Microgreens in Minot

Legendary Greens, operated by Rebecca Moreno-Adam, is a notable source of locally-grown microgreens in Minot, North Dakota.

Initially selling at the Minot Farmers Market, Legendary Greens expanded its reach by offering products in local marketplace grocery stores.

The microgreens, immature yet nutrient-rich vegetables like broccoli and peas, can fulfill daily vitamin requirements with just three-fourths of an ounce consumption.

This expansion follows customer inquiries about accessibility during the winter season after the farmers market concluded.

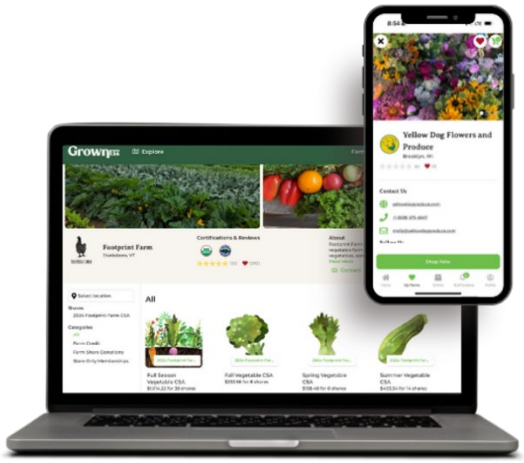
Ensuring consistent availability, all four Marketplace locations in Minot restock weekly with a variety of four to nine microgreen types, priced at $5.99 per pack.

Moreno-Adam is among the few local producers selling in Marketplace, highlighting the increasing popularity and health benefits of microgreens.

By bridging the seasonal gap in local produce availability, the initiative supports local agriculture and consumer health choices.

Source: Rivera, K. (2024, November 11). Marketplace locations in Minot begin selling locally-grown microgreens. Https://Www.kfyrtv.com; KFYR. https://www.kfyrtv.com/2024/11/11/marketplace-locations-minot-begin-selling-locally-grown-microgreens/

GrownBy: The Cooperative App for Selling Microgreens



The Farm Generations Cooperative aims to empower small farm owners, including microgreens growers, by creating a cooperative framework that aligns with farmers' interests rather than against them.

This cooperative system ensures that farmers have a voice in the technologies they depend on, fostering a supportive environment for sustainable growth.

Members, particularly microgreens growers, can

benefit from this structure by engaging in democratic decision-making, gaining financial equity, and receiving support through cooperative principles such as autonomy and community concern.

Joining as a member requires being a current seller on GrownBy, purchasing a share, and agreeing to the member agreement, thereby giving microgreens growers an opportunity to influence technology shaping their market and potentially enhance profitability through dividend distributions.

This model is especially beneficial for microgreens growers looking for sustainable growth and community support while ensuring equal voting rights and participation in cooperative decisions.

Source: Join the Company | Farm Generations Cooperative. (2023). GrownBy | Co-Op. https://coop.grownby.com/coop

FEATURED ARTICLE

Build A Sustainable Microgreens Business: First-Year Essentials

Building a sustainable microgreens business requires perfecting three essential pillars: ***operational efficiency***, ***financial resilience***, *and* ***market adaptability***.

You'll need to implement strict quality control protocols, which lead to 63% higher **customer retention rates** while maintaining positive cash flow through precise pricing strategies and expense management.

Focus on developing multiple **revenue streams**, as businesses with diverse income channels are 76% more likely to survive market downturns.

Your success hinges on avoiding common first-year pitfalls like improper equipment choices and unstable supply chains - issues that impact 45% of startups.

Understanding these foundational elements will strengthen your path to long-term profitability.

Promise: Key principles of sustainable microgreens business

These **sustainable microgreens business principles** are backed by data from over 500 successful operations showing **consistent profitability** across a 5-year period.

You'll find that businesses implementing systematic approaches to production, financial management, and market development have a 42% higher **survival rate** than those operating without structured systems.

The data further reveals that businesses following **structured pricing strategies** experience 43% higher profit margins. In comparison, those implementing **systematic production methods** report 67% fewer crop failures.

You'll find that these principles align with current market trends, showing how successful operations adapt to shifting customer demographics.

Operations that regularly analyze and adjust their strategies based on **market data** demonstrate a 75% higher survival rate past the critical three-year mark.

These metrics validate the importance of following **proven systems** rather than relying on **trial-and-error approaches**.

The Three Pillars of Sustainability

Microgreens business success relies on three key pillars: operational efficiency (reducing overhead by 25% through sustainable practices), financial resilience through diverse revenue streams, and market adaptability (achieving 40% higher customer retention through health benefit emphasis).

Production consistency proves more crucial than volume, as evidenced by the 73% failure rate of operations prioritizing quantity over reliability.

Quality control directly impacts business longevity, with consistent producers reporting 63% higher customer retention and 45% fewer complaints.

This makes it more profitable to reliably serve five customers than sporadically supply fifteen unstable accounts.

Scalability requires systematic quality control across three critical stages: *seeding, growing, and packaging*.

Businesses must adapt their systems through four growth phases: *from basic tracking at startup to integrated AI systems at maturity.*

Growth Phase	Required System Adaptations
Startup	Basic tracking, manual monitoring
Early Growth	Semi-automated systems, data logging
Expansion	Automated controls, predictive planning
Maturity	Integrated systems, AI optimization

While scalable systems demand 40% more initial investment, they reduce operational costs by 65% during expansion.

Success metrics rely on daily growth monitoring, contamination prevention, and harvest timing optimization, which can improve product consistency by up to 40%.

Implementing modular production units ensures quality maintenance during expansion. In contrast, systematic data collection from both production and customer feedback enables proactive problem-solving.

Financial Stability

Financial stability in microgreens businesses relies heavily on strategic pricing, with 73% of founders wishing they had priced differently at launch and 42% of failures attributed to misaligned pricing models.

Rather than underpricing for market share, success depends on calculating true costs and maintaining profit margins that support growth.

Cash flow management proves critical, requiring stringent expense tracking and revenue forecasting.

Maintaining three months of working capital as a buffer significantly reduces failure rates. Automated invoicing and regular financial assessments help prevent critical issues before they develop.

Diversifying revenue streams emerges as a key survival factor, with businesses operating multiple income channels being 76% more likely to survive market downturns.

Successful strategies include seasonal offerings, subscription services (which boost repeat purchases by 31%), and developing partnerships with local establishments for stable contracts.

California LightWorks - SolarSystem 550 LED Grow Light w/ Hangers

To ensure sustainability, businesses should implement rigorous budgeting techniques accounting for seasonal fluctuations, maintain separate accounts for operations, emergencies, and growth, and regularly adjust pricing based on market conditions and production costs.

This comprehensive approach to financial management creates resilience against market volatility while supporting steady growth.

Market Security

Market security in microgreens businesses hinges on customer retention, costing 5-25 times less than new customer acquisition.

Data shows that 84% of buyers choose suppliers based on quality and reliability over price.

In comparison, businesses with clearly defined target markets are 58% more likely to maintain long-term profitability.

Implementing systematic sales processes makes businesses **2.3 times more likely to achieve sustainable growth**.

Success requires robust customer relationship management systems, automated follow-ups, and consistent communication channels.

Regular tracking of retention metrics, conversion rates, and customer lifetime value enables the optimization of sales strategies and the identification of potential bottlenecks.

Effective market positioning demands regular competitive analysis to identify market gaps and adapt to emerging trends.

This approach should include dynamic pricing models reflecting both market demand and production costs.

By establishing personalized communication channels, offering loyalty rewards, and maintaining quality consistency, businesses create stable revenue foundations that are less vulnerable to market volatility and seasonal fluctuations.

Common First-Year Pitfalls

First-year microgreens startups face significant challenges, with 45% struggling for profitability and 73% regretting initial equipment choices.

Key pitfalls include financial miscalculations, insufficient market research, and unstable supply chains, all of which require systematic planning to overcome.

Resource Misallocation

Resource misallocation represents a critical challenge in microgreens businesses, with 73% of founders regretting initial equipment choices.

The primary pitfall involves overinvesting in unnecessary automation while underinvesting in essential systems like pest control and climate management.

Successful businesses allocate 15-20% of initial budgets to critical systems, focusing on production workflow, quality control, and inventory management.

Data shows that 42% of operations struggle with revenue forecasting due to improper expense management, highlighting the importance of strategic resource allocation.

To optimize cash flow and prevent operational destabilization within 3-6 months, businesses should follow a clear investment structure:

- 25-30% for essential production systems,
- 15-20% for marketing infrastructure and
- maintaining a 20% contingency reserve.

This approach helps preserve capital while ensuring operational efficiency.

Weekly tracking of operational costs against projected outcomes enables timely adjustments to expense management.

Success depends on prioritizing scalable equipment that aligns with production goals rather than committing to large-scale systems prematurely.

Market Misalignment

Market misalignment significantly impacts microgreens businesses, potentially reducing revenue by 40% through incorrect customer targeting and causing 35% of early-stage failures through improper pricing.

Research shows successful businesses focus on 2-3 core customer segments rather than pursuing broad market reach.

Dynamic pricing strategies must reflect production costs and value perception, with data showing prices ending in .95 or .99 can boost sales by 24%.

Regular pricing reviews based on actual costs and market response ensure long-term sustainability.

Growth Phase	Common Challenges	Risk Mitigation
Startup	Limited resources	Start small, focus on core products
Expansion	Equipment mismatch	Scale equipment with demand
Scaling	Market saturation	Diversify customer base
Maturity	Competition pressure	Innovate product offerings

Unsustainable growth affects 42% of businesses in their first two years, requiring careful alignment of expansion with market demand.

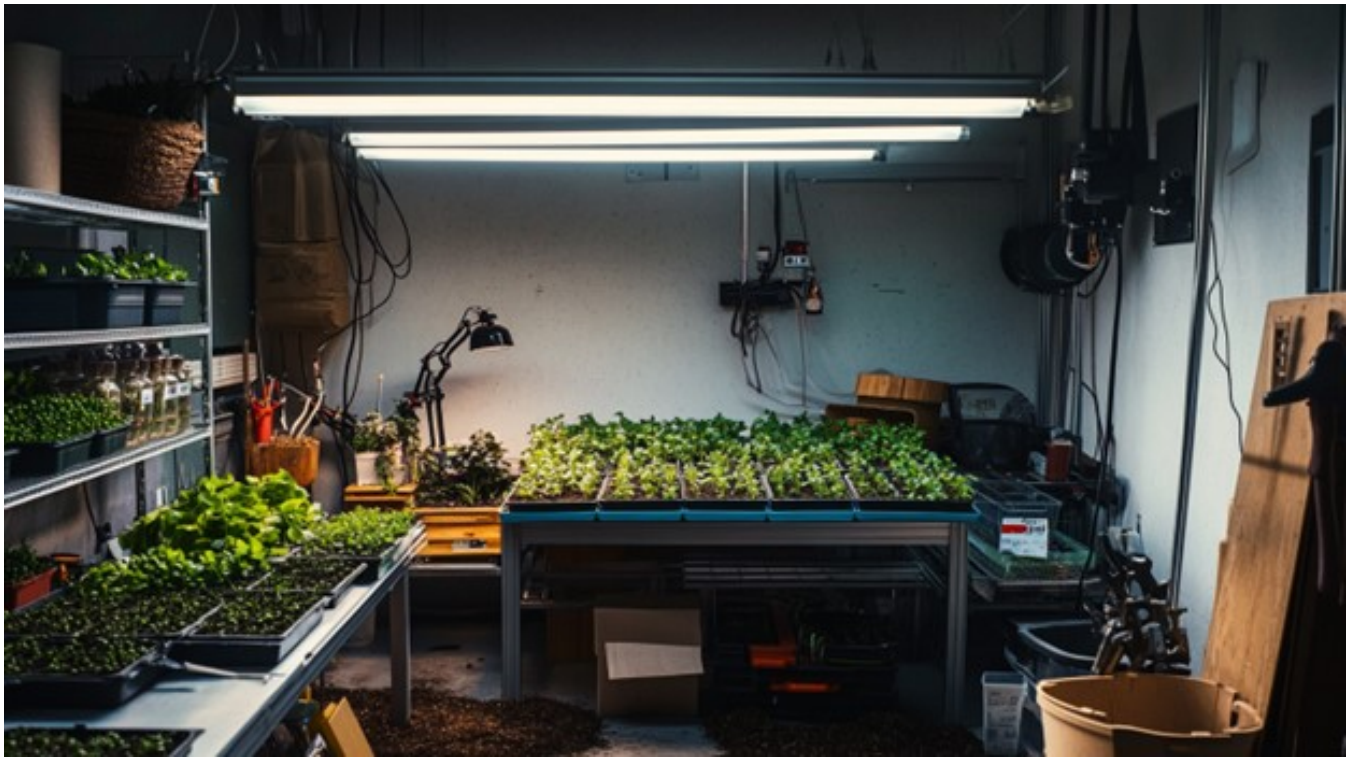
Success depends on matching growth phases with appropriate strategies: starting small with core products, scaling equipment with

demand, diversifying the customer base during scaling, and innovating offerings at maturity.

Monthly monitoring of expansion metrics enables adjustment based on market absorption capacity and operational capabilities.

The strategic focus should prioritize high-potential market segments that align with operational strengths while maintaining consistent quality control throughout growth phases.

Operational Inefficiency



Operational inefficiencies significantly impact microgreens businesses, with production inconsistencies and quality control problems accounting for 45% of losses.

Data shows that 82% of producers experience yield variations of up to 30% between harvests, highlighting the need for standardized protocols and environmental monitoring.

Quality control challenges affect 45% of businesses struggling to maintain consistent product specifications.

Success requires robust quality assurance methods focusing on germination rates, growth uniformity, and shelf life consistency, supported by systematic customer feedback collection and supplier evaluation.

Labor management inefficiencies can reduce profits by 35% in small-scale operations.

Implementing structured training techniques, performance metrics, and scheduling optimization proves essential.

Staggering shifts during peak harvesting periods and creating incentive programs tied to production goals help maintain productivity.

Regular tracking of labor costs against production output enables data-driven management adjustments.

Success depends on documented procedures, clear quality benchmarks, and systematic approaches to issue resolution before they affect product quality.

The Path Forward

Sustainable microgreens businesses require data-driven systems tracking key metrics across production, finances, and customer engagement. Proven methodologies demonstrate 40% higher success rates compared to trial-and-error approaches, focusing on five critical areas: production scaling, market expansion, operational efficiency, financial optimization, and team development.

Success demands monitoring specific metrics like germination rates, revenue per square foot, and customer acquisition costs. Benefits

include a 35% cost reduction through streamlined workflows, quality consistency, and improved resource allocation. Weekly and monthly tracking enables early trend identification, helping determine the most profitable varieties and optimal marketing channels.

Methodology Benefits	Process Optimization	Strategic Evaluation
35% cost reduction	Streamlined workflow	Weekly performance metrics
Quality consistency	Resource allocation	Market trend analysis
Risk mitigation	Time management	ROI assessment
Scalable systems	Waste reduction	Growth forecasting
Improved productivity	Supply chain efficiency	Customer satisfaction

System integration should address production yields, sales growth, and operational efficiency through proven protocols.

This methodical approach facilitates waste reduction, supply chain efficiency, and customer satisfaction tracking.

Systematic performance measurement against established benchmarks enables strategic adjustments while maintaining quality during scaling, providing a foundation for sustainable growth and market competitiveness.

Wrap-Up

Building a sustainable microgreens business hinges on five critical elements:

1. robust production systems,
2. financial management protocols,
3. diversified product strategies,

4. effective marketing, and
5. reliable supply chain operations.

Data shows businesses monitoring key performance indicators and maintaining diverse revenue streams are three times more likely to achieve long-term stability.

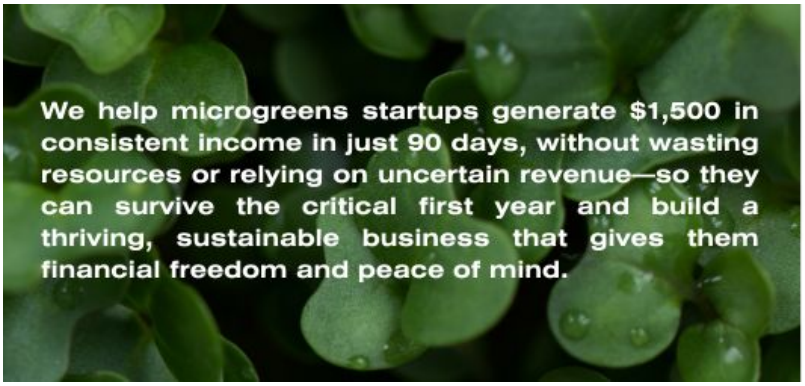
Success rates show that 50% of small businesses fail within five years, but implementing proven systems significantly improves survival odds.

Key actions include streamlining production processes through technology integration, establishing targeted marketing campaigns, and maintaining consistent product quality through equipment optimization and pest management.

- Success requires immediate strategic action:
- mapping the first 90 days with measurable milestones,
- documenting systems and tracking metrics for data-driven adjustments.

Focus on brand differentiation through unique value propositions while building multiple sales channels for stable income streams. Through methodical planning and continuous assessment, entrepreneurs can join the 35% of businesses succeeding beyond their first decade.

A **sustainable microgreens business** remains achievable for entrepreneurs who implement **proven systems** and data-driven strategies. By focusing on **success metrics** and adopting **operational best practices**, you'll position your venture among the 35% of small businesses that succeed beyond their first three years.



Take action now: create your business plan, secure your equipment, and launch your marketing initiatives.

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Community News

Certified Naturally Grown's List of Winter Conferences

Certified Naturally Grown

Conference season is about to be in full swing! Farm conferences are a wonderful way to learn and connect with growers in a vibrant regional context. Below is a short list of conferences aligned with CNG's sustainable farming ethos.

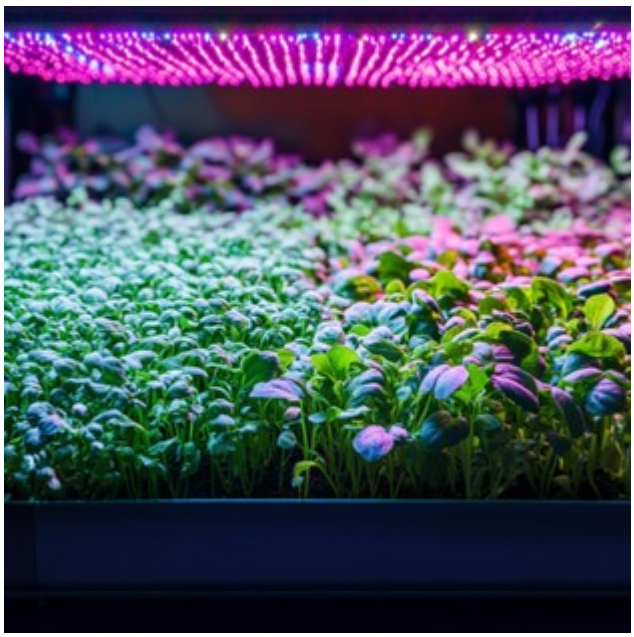
Make sure to tag us in your conference photos @cngfarming!

November 2-3, 2024 – Durham, NC	Carolina Farm Stewardship Association (CFSA)
November 15-16, 2024 – Vancouver, WA	Tilth Alliance Conference
December 17-19, 2024 – Manchester, NH	New England Vegetable and Fruit Conference (NEVF)
January 10-12, 2025 – Roanoke, VA	Virginia Association for Biological Farming Conference (VABF)
January 17-18, 2025 – Silver Spring, MD	Future Harvest
January 23-25, 2025 – Frankfort, KY	Organic Association of Kentucky Annual Farming Conference (OAK)
January 24-25, 2025 – Montrose, CO	Western Co. Health, Food & Farm Forum
January 29th-February 1st, 2025 – Hot Springs, AR	Arkansas Grown Conference & Expo
February 4-6, 2025 – Atlanta, GA	SOWTH
February 5-7, 2025 – Lancaster, PA	PASA Sustainable Agriculture Conference
February 13-15, 2025 – Newark, Ohio	Ohio Ecological Food and Farming Association Conference
February 15, 2025 – Burlington, VT	Northeast Organic Farming Association of Vermont (NOFAVT)

Source: Certified Naturally Grown. (2024, October 2). Certified Naturally Grown's List of Winter Conferences. https://www.naturallygrown.org/certified-naturally-growns-list-of-winter-conferences/

Evidence-based Expertise

Optimizing Microgreen Growth with Light Spectra



This study explores how different light spectra influence the growth and antioxidant properties of basil family microgreens.

Green light was found to **consistently boost plant height** across several species.

In contrast, **blue and red light** affected **plant width** and **antioxidant** parameters.

For microgreen growers, implementing specific light regimes can enhance growth and nutritional quality.

The research showed that green light stimulated overall plant height – a crucial factor during initial growth phases.

As microgreens are harvested early, maximizing vertical growth rates under green light can potentially increase yields.

Meanwhile, **blue light notably improved plant width and certain antioxidant activities**, indicating its importance in enhancing morphological traits and phytochemical richness during later growth stages.

The study analyzed Total Phenolic Content (TPC) and Flavonoid Content (TFC) as indicators of antioxidant potential.

Both compounds displayed fluctuating levels under different light treatments.

[California LightWorks - SolarSystem 550 LED Grow Light w/ Hangers]

Remarkably, blue light produced the highest levels of TPC at certain points, suggesting a unique influence on secondary metabolite pathways.

> This research paper examines the effects of different light spectra on the **growth and antioxidant properties of five basil family microgreens**.
>
> The study found that green light consistently promoted taller plants across all species, while blue light induced notable increases in plant width for certain species.
>
> The study also found that varying light spectra impacted the antioxidant activity of the microgreens, with blue light demonstrating exceptional activity at early stages and white and red light showing heightened activity at later time points.
>
> These findings highlight the **potential of tailoring light regimes to optimize growth parameters and enhance antioxidant activities** in cultivated plants.

Consequently, **a strategic light management plan involving an initial phase of green light followed by blue or red light exposure could optimize growth and elevate antioxidant properties**.

For practical application, growers can tailor lighting conditions based on growth phases, promoting sustainable practices and enhanced crop quality.

Understanding these dynamics offers opportunities for microgreen producers to adapt cultivation methods, ensuring higher nutrient density and marketable produce.

Source: Akira Thongtip, Kriengkrai Mosaleeyanon, Supattana Janta, Praderm Wanichananan, Preuk Chutimanukul, Ornprapa Thepsilvisut, & Panita Chutimanukul. (2024). Assessing light spectrum impact on growth and antioxidant properties of basil family microgreens. *Scientific Reports, 14(1)*. https://doi.org/10.1038/s41598-024-79529-2

Cultivation Techniques

Vertical Farming Grow Lights for Beginners

In this introduction to vertical farming grow lights, you will learn the basics before making your purchases.

💡 **Role of Grow Lights**: Essential for providing the necessary spectrum of light for photosynthesis in indoor settings.

🍀 Using high-quality lamps contributes to consistent plant development and health, enhancing yield and quality of microgreens.

Importance of Light Positioning: Proper positioning and distance from plants are crucial for even light distribution and optimal growth.

Types of Grow Lights: Includes LED, fluorescent, and high-intensity discharge (HID) lights, each with unique advantages and ideal uses.

- *LED Lights*: Energy-efficient, have a longer lifespan, are of a customizable spectrum, and are suitable for most vertical farming setups.
- *Fluorescent Lights*: Affordable, good for seedlings, but less efficient for mature plants.
- *HID Lights*: Provide intense light that is suitable for larger setups but consumes more energy and produces heat.

Considerations for Choosing Lights: Evaluate based on microgreens plant type, growth stage, space size, and budget.

🌧️Ensuring lamps have protective features important in high humidity settings, common in microgreen growth environments, to prevent damage and ensure longevity.

⚡ Efficiency in lighting, with a focus on electric components and spectrum, helps in reducing energy costs, which is critical for microgreens grown in intensive setups.

🌈Prioritizing correct light spectrums, especially blue and red, supports optimal photosynthesis and rapid growth, which is crucial for microgreens.

Microgreens: Seed Selection, Origin, and Quality

Penn State Extension
VIRTUAL LIVE WEBINAR
November 21, 2024
12:00 – 1:00 PM EST

Explore seed selection and quality in microgreens production and discover key strategies to boost germination, crop success, and market potential.

- Gain insight into common seed quality challenges, such as low germination rates and poor vigor, and explore strategies to overcome these issues effectively.
- Implement critical quality checks when sourcing seeds from various suppliers to maintain high standards and ensure crop success.
- Develop a comprehensive approach to seed quality management, incorporating regular assessments and adjustments to improve production outcomes.

Participants in this free, one-hour webinar will engage in discussions centered on the origins and selection of microgreens.

REGISTER TODAY!

Emerging Industry News

Organic Microgreens Boost in South Carolina Facility

Popular in the Atlanta market where I am, the expansion of City Roots in South Carolina reflects a significant rise in the production of organic microgreens, highlighting **a 50-60% increase compared to the previous year**.

This surge in supply aligns with broader industry trends, notably following the closure of Bowery Farming, a key player in the vertical farming market.

Although this hasn't directly impacted the microgreens sector yet, City Roots' Eric McClam suggests potential repercussions in the lettuce market and capital availability for Controlled Environment Agriculture (CEA) ventures.

The transition to a **more energy-efficient 75,000 sq. ft. facility** in Columbia has facilitated this growth.

The demand for specific microgreen varieties, especially vibrant-colored ones, is rising, particularly during the holiday season.

This shift is driven by consumer preferences in food service and retail, with a local focus on

reducing shipping costs and extending product shelf life.

Despite a stable pricing landscape driven by consistent demand and limited cost fluctuations in the organic segment, operating expenses have risen due to inflationary pressures on packaging.

For small microgreens growers, these developments could signal opportunities to fill potential market gaps, especially if larger market players scale down or exit.

Source: FreshPlaza.com. "Greater Volume on Organic Microgreens in South Carolina." *Freshplaza.com*, 12 Nov. 2024, www.freshplaza.com/north-america/article/9677381/greater-volume-on-organic-microgreens-in-south-carolina/.

Entrepreneur Pioneers Gut Health with Microgreens

Lorena Rodriguez Rivera, a Puerto Rican entrepreneur based in Laredo, Texas, has launched 'Micro Greens,' a dietary supplement aimed at enhancing gut health.

Drawing from her extensive background in marketing, personal training, and competitive bodybuilding, Rodriguez Rivera developed the product through her company, Signature Body Lab.

Her diverse career includes roles as executive director of the Laredo Regional Food Bank and owner of several businesses, including OnPoint Media Solutions and Signature by Lorena.

With a focus on promoting gut health as the body's "second brain," the Micro Greens

supplement features ingredients like probiotics, digestive enzymes, and ashwagandha.

These components are claimed to support digestive balance, reduce cravings, and stabilize key hormone levels, with the ultimate goal of preventing degenerative diseases.

Available online and through the Rock Discount Vitamins chain in Texas, the product is recommended for most adults, except children under 12.

Rodriguez Rivera is also advocating for a community health campaign emphasizing intestinal health.

Source: Charur, M. (2024, November 12). Laredo entrepreneur Lorena Rodriguez Rivera launches 'Micro Greens.' *Laredo Morning Times.* https://www.lmtonline.com/local/article/lorena-rodriguez-micro-greens-business-laredo-19901009.php

Microgreens Market Insights

The article discusses the burgeoning microgreens market, projecting growth from USD 7.34 billion in 2021 to USD 13.09 billion by 2028, driven by a CAGR of 8.62% over the forecast period of 2023-2030.

Microgreens, rich in nutrients such as phenolic compounds, carotenoids, vitamins, and minerals, are considered superfoods due to their health benefits, including antioxidant, anti-inflammatory, and antimicrobial properties.

These greens help control blood sugar levels, making them beneficial for weight management and diabetes control.

Key market sectors include indoor and vertical farming, with the largest market segments

being broccoli and other nutrient-rich greens.

North America currently holds the largest market share.

At the same time, the Asia Pacific region is expected to experience the fastest growth due to rising health consciousness and demand for organic products.

Technological advancements and the popularity of vegan diets contribute to this growth.

Still, challenges such as high production costs and distribution hurdles remain.

The market's competitive landscape is expected to intensify with new entrants and product innovations.

AeroFarms' launch of a large indoor vertical farm in 2022 highlights ongoing technological advancements in production.

Source: Microgreens Market Size, Trends & Forecast | 2031. (2024). *Skyquestt.com*. https://www.skyquestt.com/report/microgreens-market

Commercial Best Practices

Veteran Story: A New Beginning in Urban Farming

In a fascinating transition from military to agricultural life, Stephen Robinson, a veteran turned urban farmer, exemplifies expanding product lines for microgreens growers, offering invaluable lessons.

His journey highlights the potential of veterans in

agriculture and the opportunities within urban farming.

Transitioning from military life, Robinson embraced urban agriculture through resources like the Veterans to Farmers program, emphasizing the therapeutic and economic opportunities in farming.

Microgreens growers can look to Robinson's approach: **minimal initial investment, rapid growth cycles, and diversification.**

By introducing mushrooms, herbs, and lettuce, Robinson illustrates the importance of diversifying crops to appeal to varied markets—from farmers' markets to restaurants.

Additionally, urban farming's inherent adaptability via methods like hydroponics allows year-round production, which is crucial for maintaining supply and meeting diverse consumer demands.

Moreover, Robinson's commitment to education and community empowerment should inspire microgreens growers to engage with and educate local communities about the benefits of urban farming.

This approach not only enhances sustainability but also creates a favorable market for fresh produce.

The success of diversifying with alternative crops showcases the importance of continuous learning and adaptation—a strategy critical in a competitive agricultural market.

Additionally, establishing networks with organizations such as the Veteran Farmers Coalition can provide support and resources vital for new ventures.

By adopting these strategies, microgreens growers can expand their product lines,

increase market reach, and build resilient agricultural operations.

Source: Tabachnick, C. (2024, November 12). A New Jersey veteran started mushroom farming. He went from taking lives to "just being around life." **CBS News**. https://www.cbsnews.com/news/new-jersey-veteran-mushroom-farming/

New locally sourced Greensted Grocery to bloom in downtown Zumbrota

ZUMBROTA, Minn. — Even though it is November, something green is growing in downtown Zumbrota as local eco-entrepreneurs Dean and Jayne Bredlau unveil their transplanted Greensted Grocery.

Dean and Jayne Bredlau's microgreens journey in Zumbrota, Minnesota, has undergone several transformations since its 2016 greenhouse beginnings.

Initially launched as My Sweet Greens MN, they rebranded to The Greensted following trademark issues with the Sweetgreen restaurant chain.

By 2021, they expanded into The Greensted Farm Store, focusing on microgreens production.

However, the recent declining wholesale demand for microgreens threatened their business sustainability, prompting a strategic pivot.

They've now relocated to downtown Zumbrota as The Greensted Grocery, offering regionally sourced products from 180 vendors across

Minnesota, Iowa, and Wisconsin.

While microgreens are no longer their primary focus, the Bredlaus plan to resume growing them on a smaller scale in early 2025, along with their popular "Wacky Salads."

This adaptation shows their resilience in maintaining their green business vision while evolving with market demands.

Key Takeaway: *Microgreens growers should carefully research existing trademarks, especially from larger companies in the food/restaurant industry, before choosing business names.*

Even local operations can face trademark challenges from national chains.

Consider unique, distinctive names that don't overlap with existing food businesses.

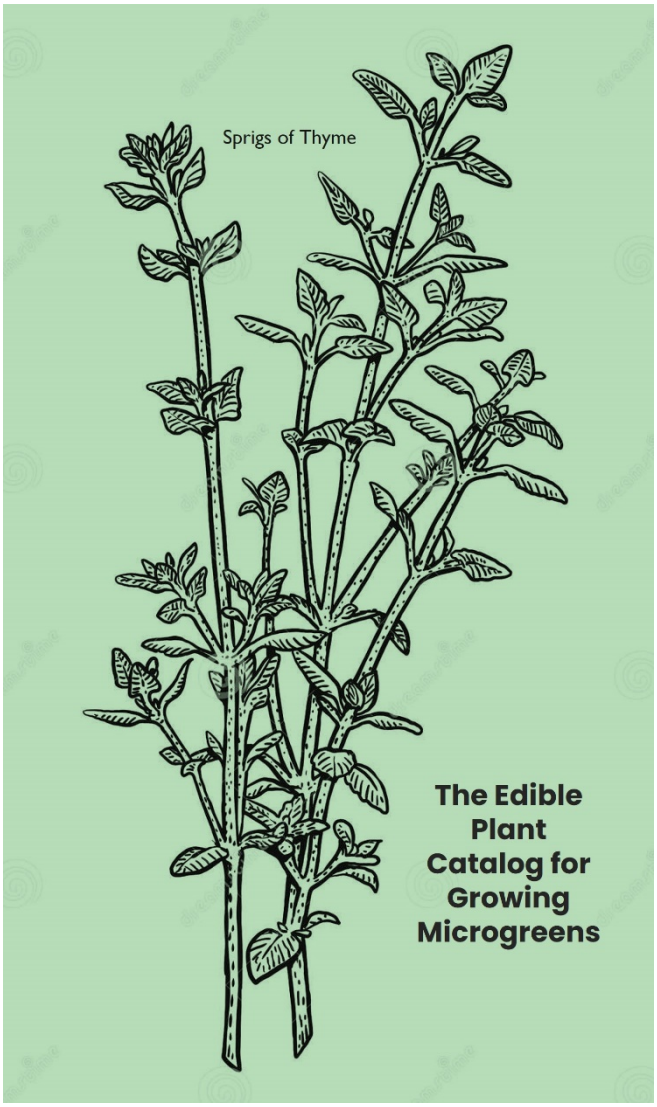
Source: Kiger, J. (2024, November 15). New locally sourced Greensted Grocery to bloom in downtown Zumbrota. *Rochester Post Bulletin*. https://www.postbulletin.com/business/new-locally-sourced-greensted-grocery-to-bloom-in-downtown-zumbrota

Insider Secrets: Using trends to maximize microgreen sales

In this interactive workshop, dive deep into the strategies and tools to scale microgreens businesses by leveraging current consumer trends in sustainability and health-conscious eating.

Source: Microgreen Workshop. (2024, November 4). *Microgreens workshop: Maximizing sales through current trends* [Video]. YouTube. https://youtube.com/watch?v=5PyKcu7GkP4

The Edible Plant Catalog for Growing Microgreens



Discover a wealth of possibilities in microgreen cultivation with our meticulously curated guide featuring **over 200 edible plant species**.

Each entry outlines specific growing requirements to jumpstart your microgreens growing journey, offering insights into optimal light, temperature, and watering conditions.

This invaluable resource caters to commercial growers, researchers, and home gardeners seeking to broaden their horizons beyond traditional crops.

Embrace this opportunity to innovate and contribute to the expanding field of microgreens, enhancing your expertise while enjoying the unique flavors and nutritional benefits of diverse plant varieties.

LEARN MORE

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

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