THE MICROGREENS WEEKLY

THE POWER OF MICROGREENS

NATURE'S CANCER FIGHTERS

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CREATIVE RECIPES: Buckwheat Broccoli Microgreen Fritters
GREEN GOLD RUSH: Canada's Microgreens Market
COMPOST INNOVATIONS: Fueling Microgreens Growth at Farmers Markets

Volume 2024 Monday, May 06, 2024 Edition 16

"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.

Brassica Microgreens: The Green Elixir or Snake Oil for Cancer Prevention?

This Week: Monday, April 29, 2024

Sprout New Beginnings: Unleashing Potential with Microgreens!

At McGill University, researchers highlight the rapid growth and easy cultivation of microgreens, making them ideal for urban dwellers with limited space.

These tiny plants, richer in nutrients like pro-vitamin A and vitamin C than their unsprouted seeds, can be grown in various substrates without soil, needing only moisture and light.

Microgreens are a sustainable choice for fresh, home-grown nutrition, fetching high market prices, which underline their economic potential.

The simplicity of their cultivation, coupled with their nutritional and economic benefits, makes microgreens an attractive venture for beginners.

Source: Dept. of Plant Science, FAES, McGill University 05-02-2024

Harmony and Health: Yoga and Microgreens as Allies Against Cancer

Sonya Hanlin combines yoga therapy and microgreens cultivation to promote well-being, which is especially beneficial for those undergoing chemotherapy due to

microgreens' cancer-fighting properties.

Hanlin, who has a background in yoga therapy, owns Be Well Greens Company with her partner.

They focus on growing and selling various microgreens, including pea and sunflower shoots, celebrated for their rich nutrient content.

This unique blend of yoga and nutrition not only supports physical health but also emotional and mental recovery, showcasing a holistic approach to combating illness.

Source: Jacksonville FL, Community News 05-02-2024

Buckwheat Broccoli Microgreens Fritters

Broccoli microgreens are not only a delightful addition to various dishes but also a **powerhouse** of nutrition, particularly noted for their high levels of **sulforaphane**.

This compound is renowned for its potential **cancer-fighting** properties.

It makes **broccoli microgreens** an excellent choice for those looking to enhance their diet with **health-promoting** ingredients.

This recipe for Buckwheat Broccoli Microgreen Fritters combines the **nutritional benefits** of these microgreens with the wholesome goodness of buckwheat, creating a dish that's as healthful as it is **delicious**.

Ingredients:

- 1 cup buckwheat flour
- 1 cup finely chopped broccoli microgreens
- 1/2 teaspoon baking powder
- 1/2 teaspoon salt
- 1/4 teaspoon pepper
- 1 garlic clove, minced
- 2 eggs
- 1/2 cup milk
- Olive oil for frying

Yogurt Sauce:

- 1/2 cup plain yogurt
- 1 tablespoon lemon juice
- 1 tablespoon finely chopped fresh herbs (such as dill or parsley)
- Salt and pepper, to taste

Instructions:

1. **Prepare the Batter**: In a bowl, mix buckwheat flour, baking powder, salt, and pepper. Add garlic, eggs, and milk, whisking until smooth. Fold in the chopped broccoli microgreens.

2. **Cook the Fritters**: Heat olive oil in a skillet over medium heat. Drop spoonfuls of batter into the skillet, flattening slightly. Fry for 2-3 minutes on each side until golden brown and cooked through.

3. **Make Yogurt Sauce**: Combine yogurt, lemon juice, herbs, salt, and pepper in a small bowl. Stir until well mixed.

4. Serve the fritters hot with a drizzle of yogurt sauce on top.

Enjoy your Buckwheat Broccoli Microgreens Fritters!

Tiny Titans of Nutrition: Microgreens Making a Big Impact at Mt. Pleasant

Lindsey Foster, debuting at the Mt. Pleasant Farmers Market with Jozzalynn's Microgreens, showcased nearly **30 varieties**, including red cabbage, kale, and arugula, known for their dense nutrients and health benefits.

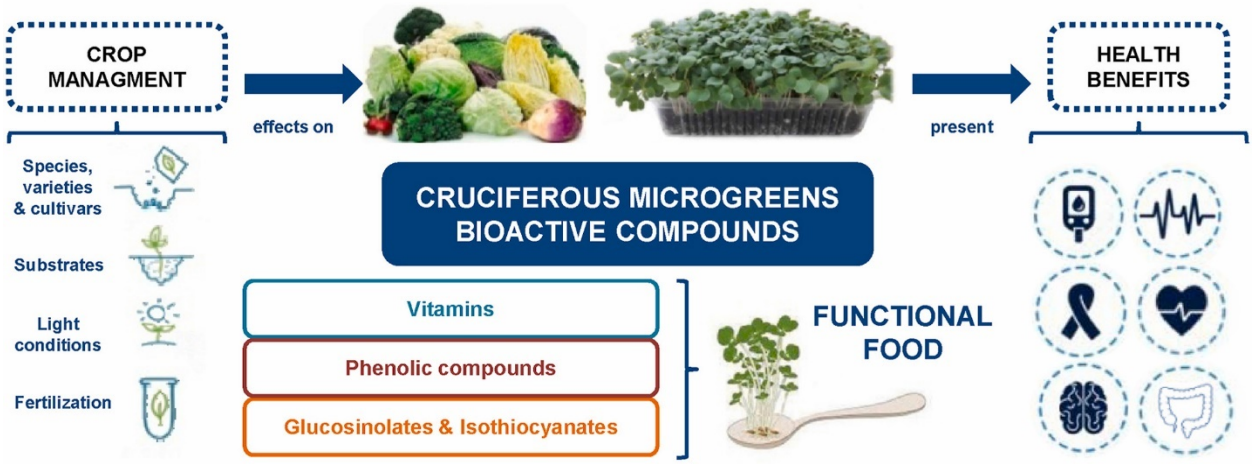
Highlighting microgreens as up to **40 times more nutritious** than mature vegetables, she emphasized their ease of integration into **daily diets** through various dishes.

Her offerings not only cater to different nutritional needs but also promote **sustainable** and **health-focused eating**, underscoring the simplicity and versatility of microgreen cultivation for **urban farming** and **small-scale gardening**.

Source: Mt. Pleasant Michigan Morning Sun, 05-02-2024

The Featured Article

Brassica Microgreens: The Green Elixir or Snake Oil for Cancer Prevention?



In the realm of functional foods, **brassica** microgreens like broccoli, kale, mustard, and radish have gained notoriety for their supposed **cancer-fighting properties**.

These microgreens are celebrated for their high concentrations of **sulforaphane**, a compound lauded for its potential to prevent various types of cancer by **influencing enzymatic processes** and **reducing oxidative stress**.

Broccoli Microgreens

Broccoli microgreens are particularly rich in **sulforaphane**, which studies suggest can modulate gene expressions that help detoxify carcinogens and inhibit tumor growth.

Research indicates that broccoli microgreens contain sulforaphane levels that can be up to **100 times greater** than those found in

mature broccoli, making them a potent preventive against cancer (*Fahey, Zhang, and Talalay*).

Kale Microgreens

Like broccoli, kale microgreens are rich in **glucosinolates**, which are precursors to isothiocyanates, including sulforaphane.

These compounds have been shown to **activate detoxifying enzymes** in the liver, which can combat carcinogenic substances before they cause cellular damage.

Mustard Microgreens

Mustard microgreens contain high levels of glucosinolates and other **antioxidants**.

The spicy flavors of mustard greens are not just for taste but are indicative of their high **isothiocyanate** content, which research has linked to cancer prevention.

Radish Microgreens

Radish microgreens are another group rich in glucosinolates.

They have been studied for their role in boosting enzymatic activity that helps detoxify cancer-promoting agents.

Their sharp flavor profiles suggest a high phytochemical content, consistent with their potential health benefits.

Cultivation and Impact

The cultivation of Brassica microgreens is a precise science that significantly influences their **phytochemical** profiles, including sulforaphane content.

Factors such as **soil quality**, **pH**, and **nutrient availability** play crucial roles.

For instance, a study demonstrated that the type of growing media, particularly cocopeat enriched with young coconut water, significantly enhanced the sulforaphane levels in Brassica microgreens by providing a rich blend of minerals and natural growth regulators which support robust plant development (*Septirosya et al.*).

Light exposure is another critical factor; specific wavelengths can stimulate the production of glucosinolates, the precursors to sulforaphane.

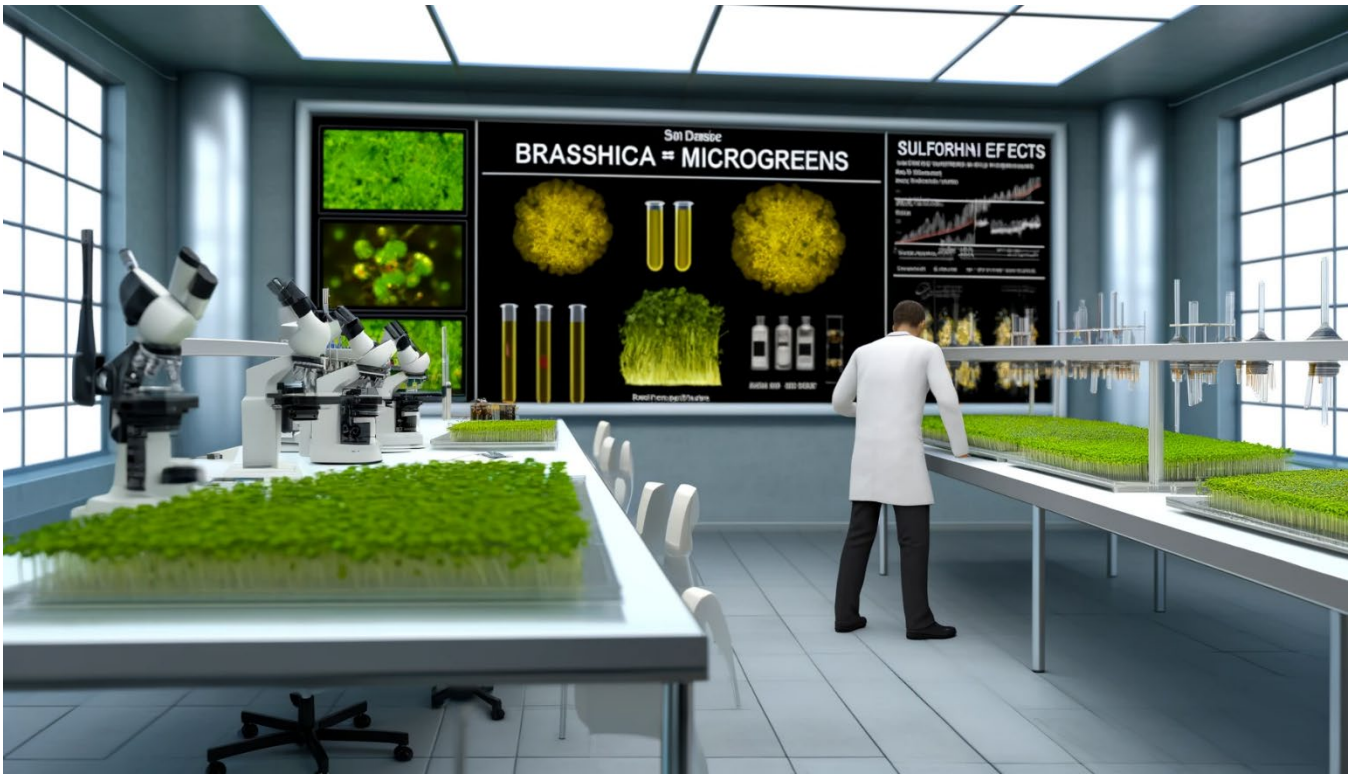
Research has found that varying the **light spectrum** can modify the nutritional makeup of microgreens, potentially optimizing their anti-cancer properties (*Jambor et al.)*.

Additionally, **water quality** and irrigation methods affect the accumulation of secondary metabolites that are responsible for health benefits.

These cultivation variables not only affect the concentration of bioactive compounds but also impact the sustainability of microgreen farming.

Using optimized growth conditions that reduce water usage and enhance nutrient uptake can lead to more sustainable production practices that are both environmentally friendly and economically viable.

Scientific and Clinical Perspectives



While the potential **health benefits** of Brassica microgreens are supported by numerous laboratory studies, the translation of these findings into clinical outcomes remains in its infancy.

Current research, primarily conducted **in vitro** or in **animal models**, has shown promising results regarding the cancer-preventive effects of **sulforaphane**.

However, human studies are relatively sparse and often show mixed results due to the complexity of human metabolism and the varied **bioavailability** of phytochemicals (*Alwani et al.*).

Clinical trials are necessary to confirm these findings in human populations.

Such studies need to address the effective dosage, long-term safety, and potential interactions of microgreens with other dietary components and medications.

Moreover, individual differences in gut microbiota, which play a significant role in the metabolism of glucosinolates into sulforaphane, can influence the efficacy of these microgreens in cancer prevention.

Understanding these factors is crucial for developing targeted dietary recommendations that can be personalized to enhance individual health outcomes.

As more robust clinical data becomes available, the role of Brassica microgreens in disease prevention and health promotion can be more accurately defined, moving beyond speculative benefits to evidence-based dietary strategies.

Conclusion

Brassica microgreens continue to be a focal point in nutritional research due to their potential health benefits. Whether they are indeed green elixir or merely snake oil remains a topic of scientific investigation. However, their high nutrient density and potential health benefits make them a worthwhile addition to a balanced diet.

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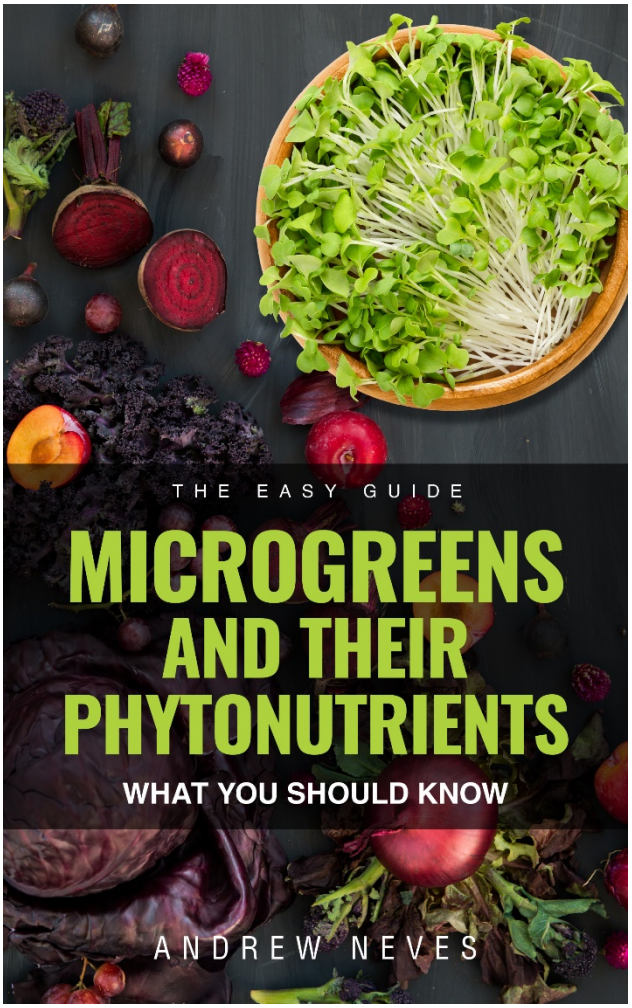


Coming in July 2024!

Green Gold Rush: Canada's Microgreens Market on a Healthy Climb to $168.6 Million by 2028

Canada's microgreens market is expected to grow to $168.6 million by 2028, driven by heightened health and wellness awareness and a population surge.

The industry benefits from trends towards nutritious and sustainable food choices, supported by technological advancements in indoor vertical farming and efficient distribution systems.

Key segments like arugula are forecasted to see significant growth due to their health benefits and unique flavors.

This growth offers **substantial opportunities for Canadian commercial growers** to innovate and expand their market presence.

Source: [Allied Research, 04-29-2024]

Robust Growth in Microgreens Market: Strategic Insights for Commercial Growers

The microgreens market is poised for robust growth, with projections suggesting a consistent annual growth rate of 9.70%, escalating the market value to USD 4.29 billion by 2032.

The surge is driven by increasing urbanization and the popularity of urban farming, where microgreens are valued for their ease of cultivation in confined spaces and rapid growth cycles.

This trend is significantly supported by the rising demand for fresh, sustainable, and nutritious food among urban dwellers.

Commercial growers can find lucrative opportunities in the indoor vertical farming segment, which dominates the market due to its year-round production capabilities and controlled growing conditions.

This method optimizes plant growth, ensuring high-quality, nutrient-rich microgreens.

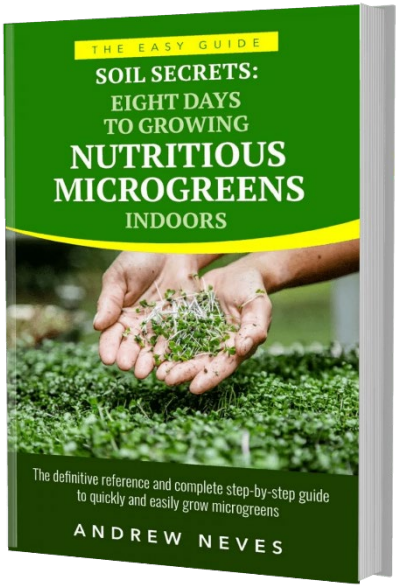
Additionally, the supermarket and hypermarket channels are anticipated to play a pivotal role in accessibility and consumer reach, enhancing the visibility and availability of microgreens on a larger scale.

Region-wise, the Asia Pacific region is expected to witness the highest growth due to increasing health consciousness and dietary shifts towards nutritious foods among its burgeoning urban population.

Meanwhile, North America continues to exhibit strong market performance, propelled by a growing preference for organic and locally sourced food products.

For commercial growers, these trends underline the **importance of aligning with technological advancements in farming** and distribution strategies to tap into this growing market effectively.

Source: Microgreens Market: Should They Be a Part of Your Diet? 04.26.2024



Get The Book That Started the Revolution

From Campus to Commercial: Pioneering Microgreens Integration at Vanderbilt

During Vanderbilt University's Earth Month, the spotlight was on the Rand Farmers Market, which featured a wide array of locally sourced foods.

Among the highlights were the contributions from Hydrohouse Farms and Radical Shoots, which showcased locally-grown vegetables and high-quality microgreens, respectively.

These microgreens, supplied to campus dining facilities, demonstrate effective farm-to-table strategies that can serve as a model for commercial microgreens growers aiming to partner with educational institutions.

This approach not only supports sustainability but also fosters community engagement, showcasing the potential for microgreen growers to expand their market reach while contributing to local economies.

Source: VerticalFarm Daily, 05-03-2024

Compost Innovations: Fueling Microgreens Growth at Farmers Markets

The webinar from Soil Learning Center explores the use of biological fertilizers, explicitly focusing on their application in enhancing soil health for microgreen cultivation.

It emphasizes the environmental and economic benefits of using natural resources like compost and compost teas, which enrich the soil without the need for chemical fertilizers.

Highlighted techniques include proper composting methods that balance carbon, nitrogen, water, and oxygen, as well as the strategic use of organic materials like coffee grounds and stinging nettles.

These practices are especially pertinent for commercial growers aiming to boost microgreen production sustainably, offering a fresh perspective on natural fertilization methods that could be showcased at farmers' markets to educate consumers and promote sustainable agriculture.

Source: Webinar Replay, Soil Learning Center, 05-01-2024

Learn all the essential aspects of managing fertilizers and plant nutrition.

Instructor: M.S. Karla Garcia

- Master in Plant Sciences from The University of Arizona
- Recognition by ISHS in strawberry hydroponic research
- Editor: Book Roadmap to Growing Leafy Greens and Herbs
- **CEO at Microgreens FLN**

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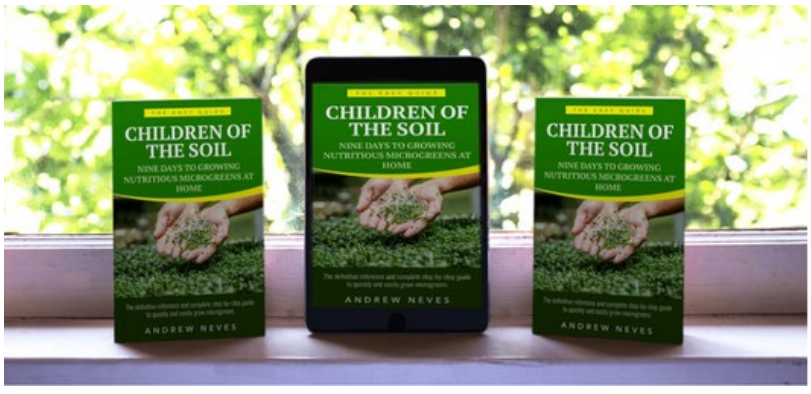

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Your 9-Day Blueprint to Microgreen Mastery

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