

Unleashing the Potential of Underutilized Herbs and Vegetables for A Nutritious World

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In a world plagued by food insecurity and a lack of nutritional diversity, the potential of underutilized spice and vegetable crops to combat hunger is often underestimated. These unsung heroes of the plant kingdom possess immense nutritional value and bring a burst of flavor to our plates. By incorporating these crops into our diets, we can not only achieve zero hunger but also introduce a new dimension of taste and diversity to our meals. In this blog post, we will explore the untapped potential of these underutilized crops and understand how they can transform the way we eat.

What are underutilized spice and vegetable crops?

Underutilized crops are those that have been overlooked or neglected in terms of research, cultivation, and consumption. These hardy plants often possess unique characteristics that make them resilient and adaptable to various climates. Yet, due to limited awareness and market demand, their potential remains untapped. Examples of underutilized spice and vegetable crops include moringa, amaranth, sorrel, and jicama, among many others.

Nutritional diversity of underutilized crops

One of the key reasons why underutilized crops are gaining recognition is their exceptional nutritional content. These plants are often rich in essential vitamins, minerals, and antioxidants, providing a wide range of health benefits. For instance, moringa leaves are packed with vitamin C, iron, and protein, while amaranth is a great source of vitamins A and C, calcium, and dietary fiber. By incorporating these crops into our diets, we can combat micronutrient deficiencies and promote overall well-being.

Why underutilized crops are crucial for achieving zero hunger

The world is currently facing a dual challenge of hunger and malnutrition. By diversifying our food sources and promoting the cultivation and consumption of underutilized crops, we can address these issues. These crops are often more resilient to climate change and require fewer resources to grow, making them suitable for marginalized communities and regions facing food insecurity. Additionally, their potential for high yields and income generation can empower farmers, creating sustainable agricultural practices.

Incorporating underutilized crops into our diets

To introduce the nutritional diversity of underutilized crops into our daily meals, we can start by exploring new recipes and experimenting with different flavors. For instance, adding moringa leaves to soups and salads or using amaranth as a substitute for rice or wheat flour can significantly enhance the nutritional value of our meals. By supporting local farmers and markets that promote these crops, we can contribute to a more sustainable and nutritious food system.

Uses of Underutilized medicinal plants and spices

1. **Chives (*Allium schoenoprasum*)**, part of the liliaceae family, are easily grown in kitchen gardens and can be used to flavor dishes like regular onion and garlic. Dried chives are commonly available and have a delicate flavor similar to scallions. They are used in baked potatoes, potato salads, and other



vegetable salads, and in dips, dressings, soups, and sauces when fresh chives are unavailable.

2. **Cilantro (*Coriandrum sativum*)**, also known as Spanish or Chinese parsley, is a pungent herb used in Mexican, Indian, and Asian cuisines to add flavor to dishes like pinto beans, Spanish-style tomato sauces, tacos, curried vegetables, and corn-stuffed peppers. Fresh cilantro is becoming more accessible.

3. **Marjoram (*Origanum majorana*)**, closely related to oregano, is a slightly sweeter and sharper herb. It is used sparingly in vegetable dishes, Italian-style tomato sauces, bean stews, pizza sauces, soups, grain dishes, and vinaigrette salad dressings, and should be used sparingly.



4. **Rosemary (*Salvia rosmarinus*)**, a small evergreen shrub with slender leaves, is a folklore-recognized herb of remembrance. Its strong piney flavor makes it versatile in vegetarian cuisine, particularly in vegetable stews, herb breads, tomato soups, and with beans and potatoes.



5. **Cress (*Lepidium sativum*)** Garden cress, also known as pepper cress or water cress, is a plant genetically related to watercress and mustard, with a peppery, tangy flavor. It belongs to the crucifer family and is used in dishes like soups, sandwiches, and salads. Seed pods can be used as pepper seasoning. In India, it is mainly grown for seeds with galactagogue properties.

6. **Bitter leaf (*Vernonia amygdalina*)** The plant is a small tree with petiolate leaves, elliptic in shape, and a bitter



taste. It is used for human consumption as a vegetable after washing, stimulating the digestive system, reducing fever, and treating leech. It is also used in Nigerian beer production due to its antinutritional factors, including alkaloids, saponin, tannins, and glycosides.

7. **Scent leaf (*Ocimum gratissimum*)** This perennial herb is woody at base, with a stem ranging from 1 to 3 meters long. Leaves are broadly to narrow ovate, 5-13 cm long, 3-9 cm wide, and puberulent on veins. The plant is a weed in roadsides and wasteland but vital in pastures. It prefers moist, fertile soils during growth but can tolerate drought at flowering. Petiole is 1- 6 cm long.



8. **Garlic (*Allium sativum*)**, a lily plant, is a medicinal herb with various uses including digestive stimulants, diuretics, and antispasmodics. It is known to prevent cancer and kill pathogenic bacteria, rotavirus infections, protozoa, and Helicobacter pylori. The presence of allicin in garlic disrupts cell membrane biosynthesis, inhibiting DNA polymerases and RNA synthesis, thus disrupting the enzyme system responsible for cell replication. It also destroys SH groups in proteins. Currently, no resistant pathogens have developed to allicin found in garlic.

9. **Ginger (*Zingiber officinale*)**, a perennial herb with thick lobes, contains "gingerols" and "shogaols" when exposed to air and heat. It contains protein, lipids, carbohydrates, minerals, vitamins, trace nutrients, capsaicin, curcumin, limonene, and proteolytic enzymes. Ginger is a carrier herb that aids in digestive absorption by up to 200%. The study aimed to evaluate the potential of medicinal plants and spices for treating diseases in ruminant animals.

Nutritional and medicinal values of underutilized vegetables

1. ***Amaranthus* spp., Amaranthus**, a perennial plant found in warm, humid regions, contains 17.5-18.3% protein and is rich in vitamins, including pro-vitamin A, vitamin C, K, and folate. It also contains high levels of carotene, micronutrients, and

phytochemicals with antioxidant properties, helping prevent diseases like cancer, arteriosclerosis, and aging.



Quercetin, among other offlavonoids, is a strong antioxidant. Amaranthus is recommended as a fiber source for patients with constipation.

2. **Pointed Gourd (*Trichosanthes dioica*)** Pointed gourd, a significant crop in India, is known as the "King of gourds" due to its high nutrient content and medicinal

value. Its leaves are used as tonics, febrifuges, and in Ayurveda for various health



benefits. *T. dioica* contains various chemical constituents, including vitamins A, C, tannins, saponins, alkaloids, and triterpenes.

3. **Gherkin (*Cucumis sativus* var. *anguria*)** Gherkin is a cucumber with a high content of essential nutrients, including beta carotene, vitamin K, and vitamin K. It helps maintain weight, reduces the risk of heart disease and cancer, and supports intake of essential vitamins like folate, iron, sodium calcium, and vitamin A. A medium size gherkin provides 12 miligrams of vitamin K, while a large sweet gherkin provides 16.5 micrograms.

4. **IVY Gourd (*Coccinia grandis*)**, also known as kundru, contains fruits rich in lycopene, β -carotene, protein, vitamin A, antioxidant properties, and is used in Ayurveda for skin eruption, tongue sores, and earache.

5. **Sweet Gourd (*Momordica cochinchinensis*)** Sweet gourd, a member of the Cucurbitaceae family, has edible fruits and leaves rich in protein, vitamin C, and A, and medicinal properties for ulceration, lumbago, and bone fracture, and seeds for wound and ulcer treatment.

6. **Karchikai (*M. cymbalaria*)**, a perennial climbing plant found in South Indian states, is a rich source of Vitamin C, fiber, beta carotene, iron, and calcium.

Initially considered a weed, its tubers have medicinal properties, making it a valuable vegetable. The crop is not commercially cultivated due to poor planting material quality. Its medicinal



properties include antidiarrhoeal, hepatoprotective, antidiabetic, nephroprotective, antiallergic, and antimicrobial properties. The plant's calcium content is three times higher than bitter gourd, and its ascorbic acid content is two times higher than bitter gourd. The tubers and leaves contain flavonoids, steroids, tri-terpenes, and saponins, making it a valuable tool against malnutrition and hunger.

7. **Basella (*Basella Alba*, *Basella rubra*)** vine spinach, is a popular tropical leafy green vegetable grown in backyards. It belongs to the basellaceae family and has two chief cultivars: *Basella Alba* and *Basella rubra*. *Basella alba* has medicinal value due to its high content of vitamins, minerals, and antioxidants. It contains essential amino acids, vitamins, minerals, and a low percentage of soluble oxalates. Major biological activities of *Basella alba* are androgenic.

8. **Elephant foot yam (*Amorphophallus campanulatus*)** *Amorphophallus campanulatus*, also known as "Jimikand" or Elephant Foot Yam, is a tuberous, stout indigenous herb used in the Ayurvedic medicine system for treating various human ailments. Its dry, pungent corms increase appetite and taste, and are used in treating

conditions like vata and kapha, inflammations, and rheumatism. The corms contain betulinic acid, β -sitosterol, stigmasterol, triacotane, lupeol, and β -sitosterol palmitate. They also possess antibacterial, antifungal, and cytotoxic activities due to their presence of diterpenoid salviasperanol and amblyone. The plant's tuberous roots have blood purifier properties and are traditionally used for treating piles, abdominal disorders, tumors, spleen enlargement, asthma, and rheumatism.

9. **Drumstick (*Moringa oleifera*)** is a tropical tree known for its nutritional and medicinal properties. It has been consumed in various culinary ways throughout history and has been used to treat various illnesses. Moringa leaves are a good source of nutrition and exhibit anti-inflammatory, anti-ulcer, anti-atherosclerotic, and anticonvulsant activities. Moringa oil has been used in skin ointments since ancient Egypt. Epidemiological studies indicate that *Moringa oleifera* leaves are a good source of nutrition and have anti-inflammatory, anti-spasmodic, antihypertensive, anti-tumor, anti-oxidant, antipyretic, anti-ulcer, anti-epileptic, diuretic, cholesterol lowering, renal, antidiabetic, and hepatoprotective activities.

Conclusion

Incorporating underutilized spice and vegetable crops into our diets not only helps combat hunger and malnutrition but also adds a dash of excitement and diversity to our meals. By recognizing the potential of these crops and supporting their cultivation and consumption, we can contribute to a more sustainable and nutritious world. So, let's spice up our plates and embark on a culinary adventure that nourishes both our bodies and our taste buds.

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