Exploring the Potential and Prospects of Underutilized Vegetables- A Review

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Abstract
Vegetables are wholesome and inseparable part of the human diet. They are the major providers of minerals, vitamins and trace elements which are essential for the normal sustenance of humans. There are some underutilized vegetables which are not included into the normal foods. These are either neglected or not popular as other conventional vegetables but have tremendous potential and can have much significance in human life. These are abundant sources of antioxidants and phytochemicals and can act as nutraceutical. Therefore, these could be included into the daily diet regime of individuals without any hesitation. In cases of issues related to nutrition like allergies, deficiencies, these should be taken into the utmost consideration. They also remove monotony from the regular or traditional fruits and vegetables. Hence, this present paper displays the significance and potentials of some underutilized vegetables and strategies that can be implied to utilise these and include them into our daily life.

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Conventional vegetables; Human diet; Potentia; Strategies; underutilized Vegetables.

Introduction
Vegetables being major origin of important nutrients with antioxidants are principle component of proportionate diet of humans and are chief operators in attaining national nutritional security by catering nutrients. There are various varieties of edible vegetables and fruits accessible that have the properties to fight against any disease and that are easily accessible, low at price but are undiscovered therefore, underutilized such as Spine gourd, Sword bean, Bitter cucumber, Wild cowpea, Water spinach and others. These species have potency to give elated levels of micronutrient like vitamins, minerals and various bioactive components.

Vegetables and Fruits have abundant crucial fibers, minerals, vitamins along with ailment controlling phytonutrients that humans requires to conserve optimal health. Certain veggies can be eaten fresh but many are cooked prior consumption. Basically, preparing vegetables in home are rooted towards flavour choices and satisfaction rather than holding onto the nutrient and health-promoting components. Thus, vegetables that are neither grown for trade nor merchandised broadly are known as underutilized. Underutilized vegetables enclosed of good nutritional and medical potency with attribute of standing against unfavourable weather situations. Despite, these vegetables are
still unheeded because of shortness of awareness and absolute knowledge. Diverse names are used to elaborate range of underutilized crops. Some of the titles are underdeveloped, lost, abandoned, minor, underused, alternative, traditional, local, forgotten, niche, neglected, promising and Orphan. These vegetables have local or territorial significance and ideally used for its fruit, oil, fodder, fibre etc. but remains deficit in public acceptation with amplification. Underutilized vegetables have vital role in rural humans. They have capability to boost financial status by occupational possibilities and revenue generation and also by enhanced effectiveness and profitability gains of labour in agrarian and urbanised states. Usage of underutilized crops is the mean to lower the probability of over-dependency on small number of main vegetable crops. Alongside, they attribute to sustainable livelihood by domestic food security owing to additional edible vegetable crop choices. Still, numerous vegetable crops conventionally eaten by localised people are considered underutilized. The nutritional profile of these vegetables is high as compared to usually refined veggies which have medical potency. A broad scope of crops flourishing around Himalayas and sub Himalayas areas in India connecting to species Brassicaceae, Cucurbitaceae, Solanaceae along with different varieties of roots, beans, spices, tubers with some leafy crops contributes to wide range of underutilized vegetables.

Because of lack of sustainability of planting matter, deficit on awareness in nutritional and medicinal significance, lack of information on absolute practises for improvement of these crops, usage of these crop usages is pitiable. Underutilized vegetables enhances hunger, directly leading in enhancing production of food in provocative conditions, through nutritional enrichment in diet consisting conventional crops, and giving poor people the buying capacity for food which is available. These plants serve as indispensable constituent of human diet supplying body with minerals, vitamins and certain hormone precursors, in addition to protein and energy. According to FAO (Food and Agricultural Organisation) report, more than one billion people are using these plants as their diet.

Importance of Underutilized Vegetables
A broader usage of unattended and underused veggies, either with subsequent major staples or as single crops, would give various choices to make temporary and spatial diversity in the regular yielding, progressing to more sustainable catering of various nourished food crops. Many conventional or endemic vegetables are known for its high nourishment value analysed with other vegetables like cabbage, tomato. As the generator of important protein, micronutrients, vitamins and other phytochemicals, indigenous vegetables or undervalued crops consists of the potency in achieving nutritional security. Besides necessary vitamins, many of these vegetables indulged in backyard are to be generally nutritional proficiency. Also, their commercialised, traditional and cultural valued, therapeutical veggies are advised crucial for organic farming as they lower the effect in manufacture apparatus of the environment. Much of these food crops are robust, altered to circumstantial peripheral soil with atmospheric phenomenon, matured in negotiable extraneous inputs. Underutilized vegetables comprise important natural assets in agricultural insufficient areas with addition in enhancing the benefits of many tribal people. Concentrating on undervalued vegetables is a competent manner in assisting different and nutritious diet with accomplishing micronutrient insufficiency.

Characteristics of underutilized Vegetables
1. Vegetable crop should have any scientific evidence of intellectual nourishment.
2. They should be nurtured formerly or only grown and used in particular geographical areas.
3. Vegetable crops should have restricted or improper seed distribution route.
4. Vegetable crops are presently cultivated fewer as compared to other traditional crops.
5. Vegetable crops have attained fewer acknowledgements of customers, farmers, scientists and influential rule makers.
6. Vegetable crops should have excellent nutritional profile with therapeutical/medicinal properties along with multiple usages.
Table 1: Recommended dietary allowance (RDA) & Estimated Average Requirements (EAR) for Indian Males and Females (ICMR- NIN, 2020)

<table>
<thead>
<tr>
<th>Nutrients (Minerals/Trace Elements)</th>
<th>RDA (Males)</th>
<th>RDA (Females)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Calcium</td>
<td>1000 mg/day</td>
<td>1000 mg/day</td>
</tr>
<tr>
<td>2. Magnesium</td>
<td>440 mg/day</td>
<td>370 mg/day</td>
</tr>
<tr>
<td>3. Iron</td>
<td>19 mg/day</td>
<td>29 mg/day</td>
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<tr>
<td>4. Zinc</td>
<td>17 mg/day</td>
<td>13 mg/day</td>
</tr>
<tr>
<td>5. Iodine</td>
<td>150 μg/day</td>
<td>150 μg/day</td>
</tr>
<tr>
<td>6. Phosphorous</td>
<td>1000 mg/day</td>
<td>1000 mg/day</td>
</tr>
<tr>
<td>7. Sodium</td>
<td>2000 mg/day</td>
<td>2000 mg/day</td>
</tr>
<tr>
<td>8. Potassium</td>
<td>3500 mg/day</td>
<td>3500 mg/day</td>
</tr>
<tr>
<td>9. Copper</td>
<td>2 mg/day</td>
<td>2 mg/day</td>
</tr>
<tr>
<td>10. Manganese</td>
<td>4 mg/day</td>
<td>4 mg/day</td>
</tr>
<tr>
<td>11. Selenium</td>
<td>40 μg/day</td>
<td>40 μg/day</td>
</tr>
<tr>
<td>12. Chromium</td>
<td>50 μg/day</td>
<td>50 μg/day</td>
</tr>
<tr>
<td><strong>Vitamins</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Thiamine</td>
<td>1.8 mg/day</td>
<td>1.7 mg/day</td>
</tr>
<tr>
<td>14. Riboflavin</td>
<td>2.5 mg/day</td>
<td>2.4 mg/day</td>
</tr>
<tr>
<td>15. Niacin</td>
<td>18 mg/day</td>
<td>14 mg/day</td>
</tr>
<tr>
<td>16. Vitamin B6</td>
<td>2.4 mg/day</td>
<td>1.9 mg/day</td>
</tr>
<tr>
<td>17. Folate</td>
<td>300 μg/day</td>
<td>220 μg/day</td>
</tr>
<tr>
<td>18. Vitamin B12</td>
<td>2.2 μg/day</td>
<td>2.2 μg/day</td>
</tr>
<tr>
<td>19. Vitamin C</td>
<td>80 mg/day</td>
<td>65 mg/day</td>
</tr>
<tr>
<td>20. Vitamin A</td>
<td>1000 μg/day</td>
<td>840 μg/day</td>
</tr>
<tr>
<td>21. Vitamin D</td>
<td>600 IU</td>
<td>600 IU</td>
</tr>
</tbody>
</table>

Table 2: List of underutilized vegetables with their scientific names (Chacha et al., 2020; Kumar et al., 2018; Shukla et al., 2019; Jena et al., 2018)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Local Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sunga</td>
<td>Bitter lettuce</td>
</tr>
<tr>
<td>2. Kikundembala</td>
<td>Wild cowpea</td>
</tr>
<tr>
<td>3. Mokiki</td>
<td>Bitter cucumber</td>
</tr>
<tr>
<td>4. Inyiri</td>
<td>Malabar spinach</td>
</tr>
<tr>
<td>5. Lasia Spinosa</td>
<td>Gantha</td>
</tr>
<tr>
<td>6. Ipomoea Aquatica</td>
<td>Water spinach</td>
</tr>
<tr>
<td>7. Momordica Dioca</td>
<td>Spine gourd</td>
</tr>
<tr>
<td>8. Oroxyylum Indicum</td>
<td>Sonapatha</td>
</tr>
<tr>
<td>9. Homalomena Aromatic</td>
<td>Sugandhmantri</td>
</tr>
<tr>
<td>10. Canavalia Gladiata</td>
<td>Sword bean</td>
</tr>
<tr>
<td>11. Enhydra Fluctuans</td>
<td>Helencha</td>
</tr>
<tr>
<td>12. Solanum Torvum</td>
<td>Wild brinjal</td>
</tr>
<tr>
<td>13. Amaranthus spinosus L</td>
<td>Spiny Amaranthus</td>
</tr>
<tr>
<td>14. Amorphophallus Companulatus</td>
<td>Elephant foot yam</td>
</tr>
<tr>
<td>15. Ocimium Americanum</td>
<td>American Basil</td>
</tr>
</tbody>
</table>
Profile of Some underutilized Vegetable Crops

Sunga (Bitter Lettuce)

Sunga crop is an undomesticated, blossom in white or yellow hues. L. cornuta is usually called as bitter lettuce which is wild vegetable that belongs to family group of Asteraceae/ Compositae. It is mainly found in Sudan, Zimbabwe, Kenya, Somalia, Ethiopia, Tanzania, Nigeria and Uganda. This vegetable is rich in vitamins {especially Vit. A [β-Carotene](3.8 mg/100g), B1 (25.2 mg/100g), B2 (0.24 mg/100g), B3 (0.1 mg/100g), C (120.8 mg/100g)} and minerals {especially iron (6.04 mg/100g), zinc (6.05 mg/100g), magnesium (301.5 mg/100g) and calcium (60.2 mg/100g)}. It is used in treating sore throats, typhoid, malaria, measles, ear aches, diabetes, coughs, gonorrhoea, joint pains, chicken pox, nasopharyngeal infections, hernia, syphilis.

Kikundembala (Wild Cowpea)

Vigna is genus of essential legume group Phaseoleae. Normally it is known as “wild cowpea”. It’s the inbred of Asia, Central America and Africa. It pertains from group Fabaceae. This vegetable can be preserved for a year if all conditions are in favor. This crop is abundant in micronutrients such as zinc and iron. This vegetable is enriched with vitamins {especially Vit. A [β-Carotene] (2.5 mg/100g), B1 (18.9 mg/100g), B2 (0.18 mg/100g), B3 (0.09 mg/100g), C (136.7 mg/100g)} and minerals {especially iron (4.2 mg/100g), zinc (4.28 mg/100g), magnesium (191.1 mg/100g) and calcium (85.2 mg/100g)}. It is useful in curing ailments related to eyes, hernia, provides relief in menstrual pain.

Mokiki (Bitter Cucumber)

Commonly called as seed-bearing leafy crop, M. foetida is a delicate, wide and spoon-shaped leafs. M. foetida a medicative crop belonging to the family of Cucurbitaceae. It is a monoecious, long mounting herbaceous plant. Generally called as bitter cucumber or bitter melon, vegetable of Mormodica genus, Cucurbitaceae family is distinguished by the sharp flavour due to the existence of phytochemicals cucurbitacins and alkaloids. This vegetable is majorly grown in India, China, Bangladesh, Japan and Sri Lanka. It is helpful in treating diabetes, fever, small pox, blood pressure and malaria. This vegetable is enriched with vitamins {especially Vit. A [β-Carotene] (5.5 mg/100g), B1 (58.3 mg/100g), B2 (0.76 mg/100g), B3 (0.12 mg/100g), C (46.5 mg/100g)} and minerals {especially iron (21.05 mg/100g), zinc (21.1 mg/100g), magnesium (1151.9 mg/100g) and calcium (421.03 mg/100g)}.

Inyiri (Malabar Spinach)

B. Alba a quick- spreading persisting creeping crop belonging to Basellaceaeg family. It’s generally called as Malabar spinach or vine spinach. It contains ample vitamins like riboflavin, thiamine, niacin, ascorbic acid, vitamin A, K, E and B and minerals such as zinc, iron, magnesium and calcium. This vegetable is enriched with vitamins {especially Vit. A [β-Carotene] (6.6 mg/100g), B1 (182.9 mg/100g), B2 (0.54 mg/100g), B3 (0.4 mg/100g), C (198.08 mg/100g)} and minerals {especially iron (13.4 mg/100g), zinc (13 mg/100g), magnesium (524.5 mg/100g) and calcium (134.1 mg/100g)}. It also has phytochemicals like phenolic compounds and steroids. For medical grounds, leafs, roots, stems of this vegetable is boiled and acquired fluid is taken for curing anaemia, burns, scalds, constipation, dysentery, headaches, skin diseases, ulcers and haemorrhages.

Lasia spinosa (Gantha)

Lasia spinosa is an enduring, blooming eternal crop belonging to family Araceae expanding 1 - 2 metres in height with the help of elongated, climbing stem. Natively it is called as Gantha, kanta or Pachok Kwiwi in Tripura. Leaves and roots are used in ailing piles. This crop has vital pharmacological potential including anti-oxidant, anti-tumor, anti-diabetic, anti-bacterial, anti-hyperlipidemic, anti-helminthic with several other ailments inhibitory elements. This vegetable is utilised in treatment of swellings, sprains, inflammation, scars and wounds in humans as well as cattle’s (goats and cows). Nutritional analysis of Lasia spinosa showed that Protein 17.6 kcal/100g, fats 1.16 kcal/100g, carbohydrate 35.7 kcal/100g and were present. Micronutrients like Zinc 7.44 ppm, Magnesium 6.22 ppm, Copper 0.31 ppm, Iron 17.06 ppm and Manganese 1.33 ppm were present.
Ipomoea aquatica (Water Spinach)

I. aquatica is an amphibious, quick growing tropical crop grown as vegetable for its soft leaves and shoots. It belongs to Convolvulaceae family. The crop is called as river spinach, water spinach, water morning glory, water convolvulus. It's easily grown and available in hot and humid areas all over the world. It develops naturally into water and needs less attention. This crop is abundant in fibres, minerals, vitamins, carotene, proteins with flavonoids along with numerous health advantages. This vegetable parts like leafs, stems are utilised in various forms such as juices, raw or cooked forms for curing cases of skin related disorders, snake bites and acts like medicine. The leaves of I. aquatica contain: carbohydrate 4.3%, protein 3%, fat 0.4%, fiber 0.9%, mineral matter 2%, Vitamins nicotinic acid (0.6 mg/100g), riboflavin (120 mg/100g), C (137 mg/100g) and E (11 mg/100g).

Momordica dioica (Spine Gourd)

M. dioica is called as spine gourd or kakrol belonging to Cucurbitaceae family. It is of high nutritional potential with medical and remunerative value. The unripe soft green fruits are eaten as a vegetable. Little flowers, leafs and seeds are also eaten. It is basically found in tropical areas of Asia, Africa and South America. This vegetable consists of various nutrients like vitamins, antioxidants, phytochemicals like alkaloids, carotenoids, steroids, triterpenoids, glycosides, saponins and polyphenols which comprises to the pharmacological properties. This vegetable has properties like antibacterial, antiviral, antifungal, antimalarial, antiallergic, also it is utilised in curing diseases like cancer, piles, diabetes, asthma, neurodegenerative diseases, jaundice and urinary issues. The nutritional profile of the vegetable is: ash (14 g/100gm), crude protein (52.06 g/100gm), crude fiber (15.3 g/100gm), crude fat (4 g/100gm) and carbohydrate (14.5 g/100gm). Levels of vitamins (g/100g [Dry Weight] DW) were A (2.5), B1 (1.8), B2 (3.5), B6 (4.3) and K (15). The values of minerals (mg/100g DW) were potassium (370), sodium (58), calcium (26000), zinc (8.5), copper (1.7) and magnesium (14000).

Oroxylum indicum (Sonapatha)

O. indicum is also called as Shyonaka or Sonapatha. It is vegetable species belonging to Bignoniaceae family. The height of this tree can be upto 12 meters. It is basically grown in various parts of Sri Lanka, Malaysia, China, India, Thailand, Indonesia and Philippines. In Tripura, fruits that are 1 to 3 foot in length, 2 to 4 inch wide are consumed as vegetable owing to the medical potency. In several families of India, seeds and bark of crop are used in treating respiratory problems, infections, pneumonia, fever and vomiting, diarrhoea, dysentery. It has various medicinal properties like antimicrobial, anticancer, anti-inflammatory, anti-ulcer, antibacterial, hepatoprotective and anti-dysenteric. The nutritional profile of leaves of this vegetable is: copper (19.16 ppm), sodium (840.8 ppm), calcium (9311.7 ppm), manganese (26.26 ppm), iron (293.3 ppm), zinc (28 ppm).

Homalomena Aromatic (Sugandhmantri)

H. aromatica Schott is natively known as Gandriw that belongs to Araceae family. It’s a fragrant rootstock perennial crop and found majorly in north-eastern areas and dispersed in Arunachal Pradesh, Assam, Tripura and Nagaland. This vegetable is heliophobic in nature alongside small, plumpy and strong stem, with standard length of 0.40- 0.80 m and heart-shaped dark green leafs with elongated petals. Its underground stem contains various medical factors like anti-inflammatory, antidepressant, sedative, pain relieving, antiseptic activities and ails pain in joints. It has crucial oils that are in huge demand in cosmetics and perfumery industries. Those medical and aromatic characteristics of the crop owe to the presence of particular antioxidants and phytochemicals. The nutritional profile of leaves of this vegetable is: ash (24.9%), crude fat (1.14%), crude fiber (2.36%), protein (0.75%). Mineral estimation found: sodium (0.55 mg/g), potassium (3.16 mg/g), calcium (7.5 mg/g), copper (0.03 mg/g), zinc (0.77 mg/g), manganese (0.29 mg/g), iron (0.09 mg/g), magnesium (0.8 mg/g.)

Canavalia Gladiata (Sword Bean)

C. gladiata generally known as sword bean or Baikang is a crop species belonging to family of legumes Fabaceae. It is majorly found in parts of South Asia and Africa. The plant is strong, deep-rooted with continual mounting. The stems height can be 10 metres, distributing all-over ground or coinciding to nearby plant reinforcement. The seed has much lipid and protein, various minerals such as...
Iron, Magnesium, Potassium, Sodium, Phosphorous and Calcium. It contains various ethnomedical characteristics and urease, functional component of urea blood estimation. The raw seeds of this vegetable contained considerable amount of protein (28.39%), lipid (7.84%), fiber (8.23%), ash (5.63%) and carbohydrates (49.91%).

**Enhydra Fluctuans (Helencha)**
Enhydra fluctuans is a sticky plant, natively called as Alencha, belonging to Asteraceae family with excellent therapeutical potency. This is a comestible amphibious vegetable with irregular leaves. The leaves and stems are consumed as vegetable. The crop has nutritional value including cholesterol, saponins, glucoside and β-carotene. Leaves of this crop have little bitter and is helpful in ailing bronchitis, inflammation, laxative, nervous infections, skin diseases and small pox. Alongside, it supports Antidiarrheal, Antioxidant, CNS Depressant, Hepatoprotective, Pain relieving activity. It is helpful in treating chicken pox, rabies and dermatitis. The protein content in this vegetable was 25.9 g/100gm, crude fiber was 24 g/100gm.

**Solanum Torvum (Wild brinjal)**
Solanum torvum is a hairy, straight and spiny perpetual crop. It is locally called as Khamka Shikam. It belongs to family Solanaceae. This vegetable has generally 2 or 3 m height but might extend to 5 m. The crop has diuretic and sedative properties and leafs are consumed as sweeteners. Its fruit puree or decoction is helpful in ailing cough, chicken pox, spleen and liver elongation and heals poulticing cracks in foots. This vegetable is known abundant in calcium, iron, copper, zinc and Manganese. Because of excellent source of iron its fruit contains hematinic characteristics. The nutritional profile determined iron (76.8 mg/kg), manganese (19.4 mg/kg), calcium (221.5 mg/kg), copper (2.6 mg/kg) and zinc (21.46 mg/kg). Vitamins A and C contents were found to be 0.078 mg/100g and 2.6 mg/100g respectively.

**Amaranthus Spinosus L. (Spiny Amaranth)**
Amaranthus spinosus, generally called as prickly amaranth, spiny amaranth, thorny amaranth or spiny pigweed is leafy crop belonging to family of Amaranthaceae. This vegetable is tiny, distinguished by existing spines in stems of the plant. Leaflets of the vegetable are exceptional source of protein. Commonly, roots and leafs have antileprotic, laxative, anti-diabetic, diuretic, anti-venom, anti-gonorhoeal, antipyretic characteristics, acts as a medicine in easing eupneic in non- chronic bronchitis. It also constitutes immunomodulatory activity, anti-inflammatory, anthelmintic properties and anti-androgenic activity. Its roots are utilised in curing blood dysentery. It is also utilised in treatment of headaches, night blindness, diabetes, hypertension, anaemia. The nutritional profile of the vegetable is as follows: proteins- 9 gm and carbs 21.29 gm. Amaranthus leaves contribute 2% to 3% of the daily value of phosphorus and zinc, and from 1 to 4 % of iron per serving.

**Amorphophallus companulatus (Elephant foot yam)**
Amorphophallus companulatus is a tropical tuber belonging to Araceae family. It is herbaceous, recurrent crop found plenty in Tripura plantations. It is locally known as Maan – gachh. The underground stems for storage or corms are dehydrated, bitter and strong, enhances flavour and appetite, used in pervert situations haemorrhoid, piles, inflammation, asthma, elephantiasis, haemorrhage, fatigue, abdominal pain, splenopathy, dysentery, amenorrhoea, anaemia, seminal weakness. Along this, corms had antifungal, cytotoxic and antibacterial characteristics owing to existence of diterpenoid. The paste of this vegetable roots is utilised in curing skin ailments. The nutritional profile of the vegetable is as follows: phosphorous (4.53 µg/gm), potassium (38.1 µg/gm), zinc (23.1 µg/gm), iron (340.2 µg/gm), magnesium (119.2 µg/gm) and copper (32.6 µg/gm).

**Ocimum Americanum L. (American Basil)**
Ocimum americanum, called American basil is a yearly crop containing with lavender or white blossoms pertaining from family of Lamiaceae. This crop is straight, vigorous generally 20 – 30 cm in height. The immature leaves with soft shoots are largely consumed as condiment by indigenous group of people in Tripura. It has different heavy smell with many medical properties. The crucial oil obtained from leafs contains anti-inflammatory property. It is helpful in the treatment of ailments like malaria, cough, constipation and depression. The nutritional profile of this vegetable is as follows.
Ascorbic acid (42.8 mg/100gm), B1 (69.5 mg/100 gm), β-carotene (65.5mg/100gm), Lycopene (0.3 mg/100gm), Tocopherol (0.56 mg/100gm).

**Potential Roles and Scope of underutilized Vegetables**

Many plant crops are utilised in different ways for various purposes such as medicinal and industrial. Today, majorly crops like wheat, rice, maize, potatoes are harvested to satisfy the 60% energy demands of humans. Although underutilized crops are excellent source of various nutrients and health-elevating components, also prevents from malnutrition and various chronic illnesses. Therefore, upgrading food chains including these crops into the diet regime can become helpful in improving overall health and nutrition.

**Properties of underutilized Vegetables**

**Medicinal Properties**

Various underutilized crops have therapeutic characteristics which includes Antipyretic, Hypoglycaemic, Analgesic, Cordiostimulant, Hypotensive, Anti-androgenic, CNS depressant, Hypolipidaemic, anti-inflammatory, anticancerous, anti-microbial, hepatoprotective.

**Nutritional Properties**

Underutilized crops comprise of tremendous potential in assisting the budget in crop yielding as they compatible in extreme environmental surroundings. These usually have average calorie count, besides abundant in various other essential nutrients like phyto-chemicals, minerals and vitamins.

**Biochemical Properties**

The underutilized vegetables are abundant source of vitamin C, minerals etc. These crops are helpful in obviating deficiency of many ailments specially in developing nations. Enhanced usage of these crops would lead to more production and also accomplishing micro and macro nutrients deficiencies.

**Pharmacological And Immunological Properties:**

these underutilized crops have potential and acts as a medicines /drugs /tonics that may be essential in healthcare and pharmaceutical industries. Many local and tribal groups use these crops as the eternal part of their conventional medical system as they are utilised in treating non-communicable diseases and enhances immunity power. Presence of dietary fibers like cellulose, hemi-cellulose, pectin, lignin, β- glucans, fructans with some organic acids like tartaric, citric, iso-citric, lactic, malic, oxalic and acetic and omega-3 fatty acids are essential components that contribute in treatment of various ailments, enhances growth and development and improve immunity. These crops are essential in owning pharmacological properties.

**Major Issues and Concerns Related to underutilized Vegetables**

1. These might have special characteristics which are not usual as compared to other crops.
2. These may not be broadly administered or may be localised into a particular region.
3. These might not be grown onto huge scale on comparison with other common crops.
4. These attain very less focus and attention from farmers, researchers and other liable persons.
5. These might have abundant therapeutic, nutritional and medicinal properties.
6. These must aggravate production with diversification in agriculture.

**Limitations of underutilized Vegetables**

1. Lack in information and knowledge about yielding, consuming, utilising these crops makes it more neglected and infamous.
2. Deficit awareness related to the benefits and scope in trade.
3. No advancement in raw materials and other material quality with no technological advancement in breeding and biotechnology.
4. Less interest and focus on underutilized crops by cultivators, researchers, scientists and extension people.
5. Few amenities such as market chains, infrastructure for underutilized crops leads to loss in trade, transports.
6. Appropriate policies with regulations related to investment, marketability and credibility.
7. Few technological resources managing various underutilized vegetables make it more conditional.
Schemes for Promoting Underexploited Vegetables:

1. Concentration on localised practices with native awareness.
2. Supporting stakeholder society collabs and establishing state, territorial and foreign alliances.
3. Development reporting should be connected and widespread.
4. Estimating and enhancing the needs by trade-based approaches.
5. Enabling and amending the ability of agrarian wretched to manage with governmental and non-governmental authorities.
6. Interdisciplinary ways of practise.

Conclusion

Underutilized vegetables enclosed of abundant nutrients with medical potency besides the quality to remain in unfavourable weather. Yet, these crops are still undervalued owing to deficient in absolute knowledge regarding their potential, lack of sowing apparatus, low enlightenment on accommodation into manufacturing systems. These vegetables yield would fulfil the demands and shortage of availability and nutritional problems. It would lead to more generation and employment that would ultimately support the national economy. In cases of nutritional deficiencies and allergies these can be employed and included into the diet which would contribute as a variety into the diet and would promote a healthy and active lifestyle. Thus, it's very important to hold up schemes on genetic resources investigation, supervision, usage and development in underutilized crops to ensure nutritional and food security in the near future.

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Conflict of Interest

The authors declare that they have no competing interests.

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