Readers Shelf

VOLUME No. :22	ISSUE NO: 05	February 2026
No. of Pages in this issue		24 pages
Date of Posting: 10-11 at RMS, Jodhpur		

Editorial Office

J.V. Publishing House, 15, Gajendra Nagar, Near Old FCI Godown, Shobhawaton Ki Dhani, Pal Road, Jodhpur-5

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Printed by: Manish Kumar, ManakOffset, Jodhpur

Published by

Smt. Neeta Vyas

For J.V. Publishing House, Jodhpur

RNI No.: RAJENG/04/14700

ISSN No.:2321-7405

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1. AGRICULTURE

Greens for Gains: Unlocking the Nutritional and Health Power of Vegetable Crops

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Abstract

Vegetable crops are a cornerstone of human nutrition, offering a rich source of vitamins, minerals, antioxidants, and dietary fiber essential for maintaining optimal health. Beyond their basic nutritional value, vegetables possess bioactive compounds that contribute to disease prevention, immune system support, and overall well-being (Amogha et al., 2025). This article explores the diverse nutritional profiles of commonly consumed vegetable crops, highlighting their role in reducing the risk of chronic diseases such as cardiovascular disorders, diabetes, and certain cancers. Emphasis is placed on emerging research that links specific phytochemicals to health benefits, as well as the importance of integrating vegetables into daily diets for sustainable health outcomes. By synthesizing current scientific findings, the article underscores the transformative potential of vegetable consumption in promoting both individual health and public nutrition (Chaudhari et al., 2024).

The science behind vegetable nutrition

Vegetables are nature's powerhouse, providing a rich array of essential nutrients, including vitamins, minerals, fiber, and bioactive compounds. Vitamins such as A, C, K, and folate play critical roles in vision, immunity, blood clotting, and cellular metabolism, while minerals like potassium, magnesium, and iron support cardiovascular health, nerve function, and oxygen transport. Beyond these, vegetables contain phytochemicals natural compounds like flavonoids, carotenoids, and polyphenols that act as antioxidants, protecting cells from oxidative stress and reducing the risk of chronic diseases (Ahmed *et al.,* 2023). The nutritional composition of vegetables is influenced by factors such as soil quality, cultivation methods, and post-harvest handling. For instance, organically grown vegetables often have higher levels of certain antioxidants compared to conventionally grown ones. Understanding these nutritional principles is key to harnessing the full health benefits of vegetables and designing diets that optimize wellness (Dwivedi and kole, 2025).

Nutritional composition of vegetable crops

key macronutrients in vegetables

Nutrient type	*Examples*	*Key functions*
Dietary fiber	Carrots, spinach, broccoli	Gut health, blood sugar regulation, satiety
Proteins & amino acids	Peas, spinach, broccoli	Tissue repair, enzyme synthesis, metabolism
Carbohydrates	Sweet potato, corn, carrot	Energy source, glycemic regulation

key micronutrients in vegetables

Vitamin / mineral	Examples	Key functions
Vitamin A	Carrots, sweet potato	Vision, immunity, antioxidant defense
Vitamin C	Bell pepper, broccoli	Collagen synthesis, immune support
Vitamin K	Kale, spinach	Blood clotting, bone metabolism
Iron	Spinach, amaranth	Hemoglobin formation, oxygen transport
Calcium	Bok choy, kale	Bone health, neuromuscular function
Potassium	Tomato,	Electrolyte balance,

	beetroot	blood pressure control

Key bioactive compounds in vegetables

Compound	Examples	Potential health benefits
Flavonoids	Onion, broccoli, spinach	Anti-inflammatory, cardiovascular protection
Carotenoids	Carrot, red pepper, spinach	Antioxidant, eye health, immune support
Glucosinolates	Broccoli, cauliflower	Detoxification, anticancer properties
Anthocyanins	Purple cabbage, eggplant	Antioxidant, anti-inflammatory
Phenolic acids	Tomato, eggplant	Cardioprotective, neuroprotective

Functional fibers and prebiotics in vegetables

Fiber type	Examples of vegetables	Function
Inulin	Onion, garlic	Prebiotic, gut microbiome support
Pectin	Carrot, beetroot	Cholesterol reduction, digestion
Resistant starch	Green peas, corn	Glycemic control, gut health

Nutrient-rich varieties of vegetable crops

Vitamin a (β-carotene) rich varieties

Crop	Variety	Nutritional importance
Carrot	Pusa kesar, Pusa yamdagni	High β-carotene (vitamin A)
Sweet potato	Sree nandini, Pusa sunheri	Rich in β-carotene and energy
Pumpkin	Pusa vishal, Arka chandan	Vitamin A, antioxidants

Iron and mineral-rich varieties

Crop	Variety	Nutritional importance
Spinach	Pusa harit, All green	High iron and calcium
Fenugreek	Pusa kasuri, Co-1	Iron, dietary fiber
Beetroot	Crimson globe,	Iron, folate
	Detroit dark red	

Vitamin C rich varieties

Crop	Variety	Nutritional importance
Tomato	Pusa ruby, Arka rakshak	Vitamin C, lycopene
Capsicum	California wonder, Arka mohini	Very high vitamin C
Cauliflower	Pusa snowball-16	Vitamin C, fiber

Protein-rich vegetable varieties

Crop	Variety	Nutritional importance
Garden pea	Arkel, Pusa pragati	High protein
French bean	Contender, Arka anoop	Protein, dietary fiber
Vegetable soybean	Arka vijay	High-quality protein

Antioxidant and phytochemical-rich varieties

Crop	Variety	Key phytochemicals
Tomato	Arka rakshak, Arka samrat	Lycopene
Broccoli	Green magic, Pusa broccoli-1	Glucosinolates
Red cabbage	Red acre	Anthocyanins

Biofortified vegetable varieties

Crop	Variety	Enhanced nutrient
Potato	Kufri neelkanth	High antioxidants
Sweet potato	Beta sweet	High vitamin A
Tomato	Pusa vivek	High lycopene

Conclusion

The cultivation and consumption of nutrient-rich vegetable varieties is a sustainable and cost-effective strategy to improve dietary quality and public health. These varieties not only provide essential nutrients but also act as functional foods, helping to reduce micronutrient deficiencies such as vitamin a deficiency, iron-deficiency anemia, and oxidative stress-related disorders. Promoting such varieties can significantly contribute to nutritional security and sustainable agriculture.

Reference

Amogha, K., Jaiswal, A., Kanaka, S., Meher, R., and Santhosh, K. (2025). Green Leaf Proteins: Sustainable Solutions for Plant-Based Protein Sources. *Journal of Plant Biota*, *2*(2), 19-24.

Dwivedi, S. L., Ortiz, R., and Kole, C. (2025). *Next Generation Food Crops for Human Health*. CRC Press.

Chaudhari, V. M., Singh, O. B., Gouthami, N. S., Thakur, N., Singh, R., Singh, S., and Nagar, B. L. (2024). Unlocking the nutritional power of vegetables: A guide to vibrant health. *Eur. J. Nutr. Food Saf*, *16*, 247-261.

Ahmed, N., Zhang, B., Bozdar, B., Chachar, S., Rai, M., Li, J, and Tu, P. (2023). The power of magnesium: unlocking the potential for increased yield, quality, and stress tolerance of horticultural crops. *Frontiers in Plant Science*, *14*, 1285512.

2. AGRICULTURE

Global Hunger and Malnutrition

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Abstract

One of the most significant and enduring development issues of the twenty-first century is global hunger and malnutrition. Due to a mix of violence, climate change, economic shocks, and unequal access to resources, hundreds of millions of people continue to lack adequate food and nutrition despite decades of progress, according to recent international reports. Malnutrition includes both undernutrition (such as stunting and wasting) and overnutrition (such as obesity), whereas hunger is defined as not having enough food for an active, healthy existence. Higher child mortality, lower economic output, and long-term developmental costs are some of the repercussions. Coordinated international action in the areas of agriculture, social protection, health, and climate policy is necessary to address these interconnected issues.

Keywords: Global hunger, Malnutrition, Food insecurity, Undernutrition, Micronutrient deficiencies, Climate change, Poverty.

Introduction

Malnutrition and hunger are serious humanitarian and public health problems that impact large populations all over the world. The physical discomfort brought on by a lack of food is known as hunger, and it is frequently a sign of more widespread food insecurity, in which people do not regularly have access to wholesome food. Malnutrition encompasses both undernourishment and an imbalance in the intake of key nutrients, encompassing both excess and deficiency (Rao and Kumar, 2023).

Current Global Situation

Malnutrition and hunger still plague hundreds of millions of people worldwide. Approximately 733 million people, or one in eleven people globally, suffered from hunger in 2023, with a greater incidence in Africa, according to latest United Nations estimates (UNICEF, 2024). Global food insecurity is further exacerbated by major food crises brought on by conflict and the effects of climate change that have been reported in dozens of nations (World Food Programme, personal communication).

Causes of Hunger (Government of India, 2021)

- Poverty and low purchasing power
- Economic inequality and unequal food distribution
- Armed conflict and political instability
- Climate change and extreme weather events
- Environmental degradation and land degradation
- Low agricultural productivity and limited farm inputs
- Rapid population growth and unplanned urbanization

- Food price volatility and economic shocks
- Weak governance and ineffective food policies
- Inadequate social protection systems
- Gender inequality and social exclusion
- Poor infrastructure and market access

Malnutrition and Its Forms

Nutrient intake imbalances, excesses, or deficiencies can result in malnutrition. It encompasses overnutrition, which results in overweight, obesity, and diet-related non-communicable illnesses, and undernutrition, which shows up as stunting, wasting, underweight, and micronutrient deficiencies. Undernutrition and overnutrition coexist in many nations, creating a significant public health concern (Chatterjee *et al.,* 2023).

Health and Developmental Impacts (Ojha *et al.*, 2022)

- Increased child morbidity and mortality
- Weakened immune function and higher disease risk
- Impaired physical growth (stunting and wasting)
- Delayed cognitive development and reduced learning ability
- Poor educational performance and school attainment
- Increased risk of low birth weight and maternal complications
- Intergenerational cycle of malnutrition
- Reduced adult productivity and earning potential
- Higher healthcare costs and economic losses
- Negative impact on human capital and national development

Economic and Social Consequences (Thakur *et al.*, 2023)

- Reduced labor productivity and work capacity
- Loss of national economic output and GDP growth
- Increased healthcare expenditure and public health burden
- Lower educational attainment and skill development
- Intergenerational transmission of poverty and malnutrition
- Increased social inequality and marginalization
- Reduced resilience of households to economic shocks
- Strain on social protection and welfare systems
- Slower human capital formation
- Obstacle to sustainable development and poverty reduction.

Strategies for Addressing Hunger and Malnutrition (Singh *et al.*, 2021)

- Strengthening food security and nutrition policies
- Promoting sustainable and climate-resilient agriculture
- Improving access to affordable, nutritious diets
- Expanding social protection and safety-net programs
- Enhancing maternal, infant, and child nutrition interventions
- Addressing micronutrient deficiencies through fortification and supplementation
- Empowering women and improving gender equality
- Improving water, sanitation, and hygiene (WASH) services
- Strengthening health systems and nutrition surveillance
- Encouraging multi-sectoral and international collaboration

Conclusion

Health, human growth, and economic advancement are still seriously threatened by hunger and malnutrition. In order to achieve sustainable development and food security, addressing these issues calls for integrated, multi-sectoral strategies that bolster food systems, enhance nutrition and health services, and advance social fairness.

References

Chatterjee, S., Gupta, S., and Bose, R. (2023). Understanding hunger and malnutrition across districts of India: A spatial analysis. *Food Security, 15*(4), 987–1003.

Government of India. (2021). National Family Health Survey (NFHS-5): India fact sheet. Ministry of Health and Family Welfare, New Delhi.

Ojha, M., Dhamija, G., and Roychowdhury, P. (2022). Hunger and health: Impact of household food insecurity on child malnutrition in India. *Journal of Public Health Nutrition, 25*(6), 1452–1461.

Rao, C. S., and Kumar, P. A. (2023). Food security and malnutrition in India: Status, problems and measures. *Journal of Research Administration, 5*(2), 1209–1226.

Singh, P., Kurpad, A. V., Verma, D., Nigam, A. K., Sachdev, H. S., Pandey, A., Hemalatha, R., Deb, S., and Toteja, G. (2021). Global Hunger Index does not really measure hunger: An Indian perspective. *Indian Journal of Medical Research, 154*(3), 455–460.

Thakur, S., Singh, A., Insa, B., and Sharma, S. (2023). Food fortification as a strategy to combat micronutrient malnutrition in India. *Sustainable Food Technology, 1*, 681–695.

UNICEF. (2024). Hunger numbers stubbornly high for three consecutive years as global crises deepen.

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3. AGRICULTURE

Opportunities for Organic Dairy Farming in India

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Introduction

India has a huge potential of organic milk production. Dairy production practices in India are not very intensive as in other developed countries (Wolde and Tamir, 2016). Some agro-climatic regions of the country are best suited for organic milk production which includes the rain-fed areas of Rajasthan, Gujarat, Madhya Pradesh, hilly areas of Himachal Pradesh, Uttaranchal, Jammu and Kashmir, Tamil Nadu and whole of North-Eastern region. Many of these areas follow natural production practices due to which the milk currently being produced is almost organic. There are some areas in the country (especially mountain areas) and communities (certain tribes) where the green revolution technologies have so far not reached and did not adopt the use of agro-chemicals. These areas are classified as 'organic zones'. North Eastern region of India provides considerable scope and opportunity for organic farming due to least utilization of chemical inputs where it is estimated that 18 million hectares of such land is available which can be exploited for systematic organic production. The small farmers of these areas producing a few liters of milk daily are not in a position to market it as organic milk due to ignorance and unavailability of local market for organic produce. The Trans-Gangetic plains region of Western Uttar Pradesh, Haryana, Punjab and some parts of Rajasthan have witnessed escalation in crop production by way of intensive crop rotations and heavy use of inorganic fertilizers and agro-chemicals. However, even in this region, dairy farming has not received much intensification and amenable to conversion to organic with little effort. Organic dairy farming has a good scope in the country as it is the small holder's low input, crop residue fodder-based production system contributing 70% of total milk production of the country (Kumar *et al*., 2005). They recommended that in order to tap the organic milk produced in interior rural areas; the cooperative organization should come forward for certifying, procurement, processing and marketing of organic milk. These systems are expected to offer a more profitable and sustainable production system based on low input (Hermansen, 2003). But the predominance of small holder and landless dairy farmer in this sector is also a source of potential challenge for organic dairy farming especially due to certification difficulties, traceability problem. On the other hand, due to less demand of organic products in domestic market, farmers need to depend on export market for getting premium price for their products. But animal products are still a small share of the organic market, compared to fruits, cereals and herbs, and, in terms of exports, are almost negligible in developing countries (Willer and Kilcher, 2011).

Opportunities for Organic Dairy Farming in India

1. **Consumer awareness and demand for healthy food**: Over the last decade, there has been an inclination for organic products associated with lifestyle choices (Nardone *et al*., 2004). The consumer's interest in organic farming seems mainly to be related to health, animal welfare and the impact on environment (Hermansen, 2003). With increasing per capita income and change in food habits and lifestyle, the demand for organic dairy products is increasing in domestic market. Literacy is on the rise and the media are making consumers more conscious about animal welfare issues and healthy foods. This may well boost the domestic consumption of organic foods.
2. **Grass or crop residue-based feeding**: Most of the livestock in India is kept by small and marginal farmers that do not have enough resources. Therefore, the animals are fed with usually grasses and agricultural by-products mostly straw. In rural India, there is scarcity of fodder production and the animal usually consume naturally grown shrubs and grasses which are low in terms of protein and available energy, thus they are greatly dependent on seasonal variations resulting in fluctuation in fodder supply round the year ultimately affecting milk supply (Meena and Singh, 2014). It is estimated that crop residues contribute on an average 40–60% of the total dry matter intake per livestock unit in rural India (Singh *et al*., 2014). Availability of home-produced protein rich concentrates such as beans, peas contributes to reduce the necessity of commercial concentrates. The available grasslands can be improved by introducing highly nutritive grass species and careful grazing management. This can be done by involving well-developed and empowered local Panchayat system in India (Maji *et al*., 2017).
3. **Protecting and enhancing biodiversity and positive social impact**: Organic farming is environmentally friendly. Chemicals have destroyed many beneficial insect species and have caused environmental degradation. Organic dairy producers are mandated to manage manure so that it does not contribute to the contamination of crops, soil or water and optimizes the recycling of nutrients (Chander, 2014). Organic dairy production also has significant social impact on rural communities. Good product prices, low unemployment, dropped rural emigration and reduced health risks (from chemicals) are the results of farming organic (Wolde and Tamir, 2016).
4. **Availability of quality indigenous breeds**: Breed requirement under organic dairy farming system is highly location specific. In India, unlike foreign country a number of good quality local breeds are available for each specific region. Breed like Sahiwal, Gir, Red Sindhi, Rathi, Tharparker of cattle, Murrah, Surti, Nili Ravi, Jaffrabadi, Mehsana of buffalo are best local milk producing breed (Maji *et al*., 2017).
5. **Natural and integrated farming system**: Integrated crop livestock farming system predominant in India with well diversified livestock population is ideal for organic livestock farming. Most of the Indian farmers still practicing a close to natural farming with limited external input and has maximum reliance on farm that brings them further close to organic farming. This integration of various forms of crops and animals ensure input availability for both crop and dairy enterprise along with efficient recycling of byproducts. It also offers synergistic interactions with a greater total contribution than the sum of individual effects (Butterworth *et al*., 2003).
6. **Resistance to diseases**: Indian dairy

animal breeds are less susceptible to disease and need less allopathic medicine/antibiotics which make them ideal for raising under organic management. The rich biodiversity and indigenous knowledge base among farmers of India can ensure the efficient treatment and recovery of animals in case of health problem. Along with this increasing research effort also ensured that there is sufficient knowledge and technologies available concerning disease prevention and feeding management in organic dairy production system (Nardone *et al*., 2004).

7. **Animal welfare**: Dairy farming in India is largely extensive/semi-extensive in nature where animals are not seen as business vehicle like the type of animal production common in developed nation (Chander, 2014).
8. **Indigenous technical knowledge**: India is the mainstay of diverse traditional knowledge useful for every aspect of farming. Thus, auyurvedic and other local herb-based health care system are widely used by the farmers for animal health care. The use of allopathic medicine is very less which not only cut cost but also giving India an upper hand over the developed countries (Maji *et al*., 2017).
9. **Better performance of dairy animals**: Generally, the yields drop by about 10% when converting to organic production but it is possible to maintain a high yield level in organic cows (Kamboj *et al*., 2013). A well-managed nutrient supply in the form of organic feed can ensure comparable milk production of organic cattle in long term.

References

Butterworth J., Adolph B. and Reddy B.S. (2003). How Farmers Manage Soil Fertility? A Guide to Support Innovation and Livelihoods. Andhra Pradesh Rural Livelihoods Programme, Hyderabad.

Chander M. (2014). Organic Livestock Production in India: Why, How and Road Ahead. In. Organic Farming and Sustainability, by Shetty PK, Alvares C, Yadav AK, National Institute of Advanced Studies, Bangalore, India, pp: 51-67.

Hermansen J. E. (2003). Organic livestock production systems and appropriate development in relation to public expectations. Livestock Production Science, 90: 27–39.

Kamboj M.L., Rai S., Prasad S., Datt C., Harika A.S., Kumar N. and Kumar N. (2013). A Technical Bulletin on Organic dairy farming. LPM Section, NDRI, Karnal, India, 36p.

Kumar N., Sawant S., Malik R.K., Patil G. (2005). Development of analytical process for detection of antibiotic residues in milk using bacterial spores as biosensors (Patent Reg # IPR/4.9.1.41 05074114791 deI /2006).

Maji S., Meena B.S., Paul P. and Rudroju V. (2017). Prospect of organic dairy farming in India: A review. Asian J. Dairy & Food Res, 36(1): 1-8.

Meena M.S. and Singh K.M. (2014). Fodder Production Scenario and Strategies for Revitalizing Fodder Production Technologies. MPRA Paper No. 56367, ZPD, Jodhpur, India. 14p.

Nardone A, Zervasb G and Ronchia B (2004). Sustainability of small ruminant organic systems of production. Livestock Production Science, 80: 3–15.

Singh SP, Ghosh S, Lakhani GP, Jain A, Roy B and Tiwari DK (2014). Organic Dairy Farming: A Novel Approach in Dairy Sector. International Journal of Livestock Research, 4: 10-19.

Willer H. and Kilcher L. (2011). The world of organic agriculture: statistics and emerging trends 2011. Int. Fed. Organic Agri. Movements, Bonn & Res. Inst. of Organic Agri., Frick, Switzerland.

Wolde D.T. and Tamir B. (2016). Organic Livestock Farming and the Scenario in the Developing Countries: Opportunities and Challenges. Global Veterinaria, 16: 399-412.

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4. AGRICULTURAL SCIENCE

Nutritional and Therapeutic Uses of Green Gram [*vigna radiata* (L.): A Potential Interventional Dietary Component

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Introduction

In recent years, there is a sharp rise in the incidence of a variety of lifestyle disorders. Certain conditions such as cardio vascular diseases, diabetes mellitus etc. are threatening lives and have turned out to be major causes of death. Prevention of occurrence of such diseases has been a major global concern. Green gram, a principle pulse used as a daily food article, exhibits a potential to act against this. In this regard, Ayurveda recommends its use in daily diet and modern research also directs towards the same recommendation.

Green gram - An Ayurvedic Perspective

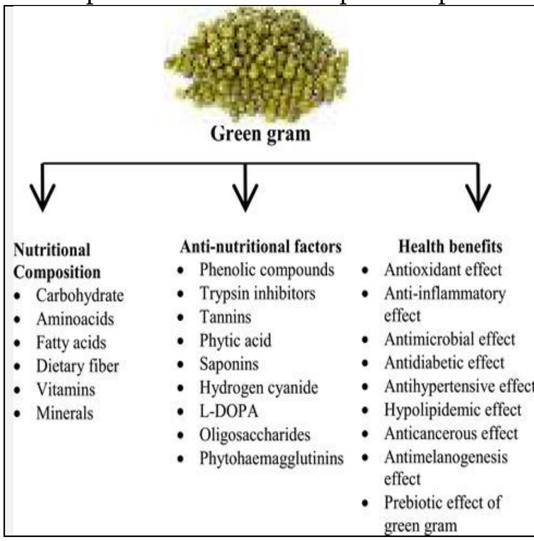
The word Green gram (Mung bean) in Sanskrit means "that which brings joy, delight and gladness". All the pulses are known to produce flatulence with an exception of Mung bean. This property makes Mung bean complementary to health. There are evidences to show that Mung bean was used as a measurement parameter in Ayurvedic practice. It has been used to explain the size of a mass of haemorrhoids. It has been also referred to, in determining the outlet lumen of an enema nozzle for children. (Used in basti or enema therapy) or a horn used in bloodletting therapy. Further Mung bean has been used as a reference to describe the shapes of lesions of certain skin diseases for e.g., Ajagallika. (Diaper dermatitis), Upadamsha. (Chancroid) and Masurika (Measles)]. These evidences show the familiarity of Mung bean to people at large.

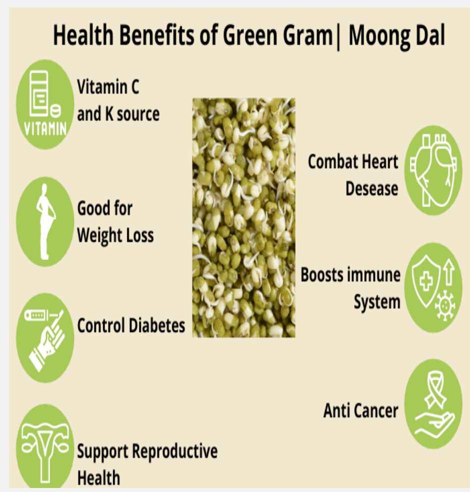
In Ayurveda, the pharmacokinetics and pharmacodynamics of a drug are explained in terms of certain attributes viz., Rasa (Taste of the drug), Guna (Properties and effect it has on the body following consumption), Veerya (Potency of the drug, whether it has a catabolic or anabolic effect on the body), Vipaka (Post digestive effect on metabolism). Based on the above, the probable action of the drug can be understood in terms of its effect on the Doshas (Bioforces governing the body whose balance and imbalance determines health and ill health). The pharmacodynamics of mung in Ayurveda has been explained to be that as Madhura (Sweet) and Kashaya (astringent) in taste, Laghu (light for digestion), ruksha (Dry), sheetaveerya (cold in potency), katu vipaka8 (post digestive transformation into pungency) and it exhibits Kaphapittahara Vatakaratva (pacifies kapha and pitta whereas aggrevates Vata). It is known to be drushtiprasadaka (improves quality of vision).

Botanical Illustration of Mung Bean

The mung bean (Vigna radiata) is a member of the legume family Fabaceae and commonly called as green gram (Figure 1). Mungbean originated in the plains of Peninsular India with its botanical origin, area of maximum genetic diversity and location of domestication being South India. Mung bean is an annual, deep rooted herb, 25-100 cm tall with trifoliate leaves and short fine brownish hairs on the stem branches. Planted in early June, the crop begins to flower in 50 to 60 days which continues for few weeks and is ready to be harvested in early to mid-September. The matured pods are glabrous and consist of 8-20 globose seeds per pod. Green gram is cultivated in several countries of Asia, Africa and the America. It grows best at an altitude of 0-

1600 m above sea level and under warm climatic conditions (28-30^{o}C). They are well adapted to red sandy loam soils and are drought tolerant giving reasonable yields with as little as 650 mm of yearly rainfall. Heavy rainfall results in increased vegetative growth with reduced pod setting and development. The most important part of mungbean is the seed used in several food products, both as whole seed and in processed form. Like most legumes they are relatively high in proteins, around 25 % of the seed weight. The principal domestic use of mungbean is the production of bean sprouts which is seen commonly in Asian cooking and is used for dhals and soups.





Nutritional Facts of Mung bean

Green gram is known for its high nutritional value. 100 g of it produces 334 Kcal of energy. It is rich in carbohydrates (56.7 g/100 g) and is a very good source for minerals like Potassium (843 mg/100 g), Magnesium (127 mg/100 g), Calcium (124 mg/100 g), Phosphorus (326 mg/100 g) and Iron (4.4 mg/100 g). Vitamins like Carotene, Thiamine, Niacin, Riboflavin, Ascorbic acid and Folic acid are also present in Mung. It is considered one of the best sources for proteins and constitutes a number of essential amino acids such as Arginine, Histidine, Lysine, Tryptophan, Phenylalanine, Leucine, Isoleucine, Tyrosine, Valine, Threonine, Cystine and Methionine. Mung hence is considered to be a substantive source of dietary proteins and carbohydrates. Mung bean provides significant amounts of dietary iron to plant based diets in developing countries where Mung bean is consumed. Certain chemical components such as flavanoids (Flavones, isoflavones and isoflavonoids), phenolic acids (Gallic acid, Vanillic acid, Caffeic acid, Cinnamic acid, protocatechuic acid, Shikimic acid, p-hydroxybenzoic acid etc), and organic acids isolated from Mung in recent years, supports its health promoting action as mentioned in the classics.

Mode of Action of Mung bean as per Ayurveda (Pharmacological Effects)

This property makes it a highly beneficial candidate for daily diet in the present scenario where in numerous lifestyle disorders are affecting people worldwide. Cardio vascular diseases and allied conditions (causal and risk factors) like Diabetes mellitus, Obesity, Dyslipidemia are leading threats to mankind globally. Dietary supplementation both preventive and supportive can help in combating these and usage of Green gram as staple will account for a valuable step. Mungbeans have been tested for several pharmacological activities worldwide. The Mung bean extracts were also found to have a potent scavenging activity against pro-oxidant species, including reactive oxygen species and reactive nitrogen species as well as an inhibitory effect on low-density lipoprotein oxidation. Regular consumption of Mung beans can regulate flora of entero bacteria, decrease absorption of toxic substances, reduce risk of hypercholestraemia and coronary heart disease, and prevent cancer.

Mung bean protein isolates improved the plasma lipid profile by normalizing insulin sensitivity and significantly reduced plasma triglyceride level. Mung bean (*Vigna radiata*) has been traditionally used in China both as nutritional food and herbal medicine against a number of inflammatory conditions since the 1050s. This when experimentally tested showed that Mung bean extract is protective against lethal sepsis by stimulating autophagic HMGB1 degradation. In the ant glycation assays, vitexin and isovitexin showed significant inhibitory activities against the formation of Advanced Glycation end products induced by glucose or methylglyoxal with efficacies of over 85 %. . It was found that the Mung extracts lowered blood glucose, plasma C-peptide, glucagon, total cholesterol, triglyceride, and BUN levels and at the same time markedly improved glucose tolerance and increased insulin immunoreactive levels suggesting a potent antidiabetic effect. 28 The above mentioned researches establish the potential of Mung bean in preventing the occurrence of certain chronic and life threatening disease conditions on daily consumption and also as a therapy in several diseased conditions.

Conclusion

Mung bean or *V. radiata,* one of the most commonly used components of Indian cuisine, is mentioned as the best among Shimbidhanyas (legumes) in Ayurveda. It is mentioned in both treatment and dietary aspects of life threatening conditions like cardiovascular diseases. Some of the researches of recent years have provided evidence on the validity and authenticity of the classical viewpoints about Mung bean. Hence Mung bean can be considered a potential interventional diet in lifestyle disorders. Further research is necessary for better understanding about Mung bean so as to throw more light on its pharmacological efficacy.

References

Nair RM et. al. Biofortification of mungbean (Vigna radiata) as a whole food to enhance human health. J Sci Food Agric 2013; 93(8): 1805-13. http://dx.doi.org/10.1002/jsfa.6110.

Tang et.al. A review of phytochemistry, metabolite changes and medicinal uses of the common food Mungbean and its sprouts. Chemistry Central Journal 2014; 8: 4. http://dx.doi.org/10.1186/ 1752-153X-8-4.

Cao D, Li H, Yi J, Zhang J, Che H, et al. Antioxidant Properties of the Mungbean Flavonoids on Alleviating Heat Stress. PLoS One 2011; 6(6): 21071. http://dx.doi.org/10.1371/journal.pone.0021071.

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5. HORTICULTURE

Urban and Peri Urban Vegetable Production: Feeding Growing Cities

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Abstract

Urban and peri-urban vegetable production (UPVP) has become an essential part of contemporary food systems due to rapid urbanization, decreasing agricultural land, and growing demand for fresh vegetables. Vegetable production in and around cities minimizes the carbon footprint of food supply chains, cuts transportation costs and post-harvest losses, and ensures year-round access to fresh, nutrient-dense food. The concept, important production methods, advantages, difficulties, and prospects for urban and peri-urban vegetable farming are all highlighted in this article (FAO. 2011).

Concept of Urban and Peri-Urban Vegetable Production

- Urban vegetable production includes cultivating vegetables on roofs, balconies, home gardens, empty lots, and public areas inside city borders.
- The term "peri-urban vegetable production" describes intense vegetable farming in the vicinity of cities, frequently supplying urban markets on a commercial basis.

Key Techniques in Urban Vegetable Farming

Rooftop and Terrace Gardening (FAO. 2012)

Key features:

- Efficient use of unused urban space
- Can be practiced using pots, raised beds, grow bags, or hydroponic units
- Suitable for leafy vegetables, tomatoes, chillies, cucurbits, and herbs

Advantages:

- Provides fresh vegetables at household level
- Reduces indoor temperature and improves air quality
- Enhances household nutrition and food security

Limitations:

- Load-bearing capacity of the roof must be assessed
- Requires proper drainage and waterproofing

Container and Grow-Bag Cultivation (Sanye mengual et al., 2015)

Key features:

- Highly flexible and space-efficient
- Allows cultivation on balconies, verandas, and small open spaces
- Growing media may include soil, compost, cocopeat, and vermicompost

Advantages:

- Easy to manage and low initial investment
- Suitable for root, leafy, and fruit vegetables
- Better control over soil-borne diseases

Limitations:

- Frequent watering and nutrient supplementation required
- Limited root volume may restrict crop growth

Vertical Farming Systems (Despommier, 2010)

Key features:

- Uses shelves, racks, towers, or wall-mounted systems
- Often combined with drip irrigation or hydroponics
- Ideal for leafy greens, herbs, and microgreens

Advantages:

- Maximizes space utilization in dense urban areas
- Higher productivity per square meter
- Reduced weed and pest incidence

Limitations:

- Higher initial setup cost
- Requires technical knowledge and maintenance

Hydroponics and Aquaponics (Resh, 2013)

Hydroponics:

- Plants receive nutrients directly through water solutions
- Common systems include NFT, DWC, and drip hydroponics

Aquaponics:

- Combines hydroponics with fish farming
- Fish waste provides nutrients for plants, while plants purify water

Advantages:

- Efficient use of water and nutrients
- Faster plant growth and higher yields
- Suitable for year-round production

Limitations:

- Requires technical skills and monitoring
- Initial investment is relatively high

5. Community and Institutional Gardens (Poulsen et al., 2015)

Key features:

- Shared land and resources
- Collective planning, cultivation, and harvesting
- Often supported by local governments or NGOs

Advantages:

- Improves access to fresh vegetables at community level
- Promotes social interaction and awareness about nutrition
- Encourages sustainable and inclusive urban agriculture

Limitations:

- Requires coordination and long-term participation
- Land availability and ownership issues may arise

Suitable Vegetable Crops for Urban and Peri-Urban Areas

- Leafy vegetables: spinach, lettuce, fenugreek
- Fruit vegetables: tomato, chilli, brinjal
- Cucurbits: cucumber, bottle gourd, ridge gourd
- Herbs and microgreens

Conclusion

Vegetable cultivation in urban and peri-urban areas is becoming a crucial tactic for sustainably feeding expanding cities. It may greatly improve food and nutritional security while making cities more resilient and green with the right technology, knowledge, and governmental support.

Reference

Poulsen, M. N., McNab, P. R., Clayton, M. L., and Neff, R. A. (2015). A systematic review of urban agriculture and food security impacts in low-income countries. *Food Policy, 55*, 131–146.

Sanye-Mengual, E., Oliver-Sola, J., Montero, J. I., and Rieradevall, J. (2015). An environmental and economic life cycle assessment of rooftop greenhouse production in urban areas. *Journal of Cleaner Production, 90*, 20–29.

Resh, H. M. (2013). *Hydroponic food production: A definitive guidebook for the advanced home gardener and the commercial hydroponic grower* (7th ed.). CRC Press.

FAO. (2012). *Growing greener cities in Asia*. Food and Agriculture Organization of the United Nations.

FAO. (2011). *Guide for promoting urban and peri-urban agriculture*. Food and Agriculture Organization of the United Nations.

Despommier, D. (2010). *The vertical farm: Feeding the world in the 21st century*. Thomas Dunne Books.

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6. AGRICULTURE

Artificial Intelligence; Driven Decision Support Systems in Vegetable Farming

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Abstract

Decision Support Systems (DSS) powered by artificial intelligence (AI) are revolutionizing vegetable farming by allowing data-driven, accurate, and context-specific decisions that boost sustainability, decrease resource waste, and increase production. To assist with irrigation, fertilizer management, pest and disease detection, yield forecasting, and general farm management, these systems combine machine learning, deep learning, IoT sensors, and predictive analytics. According to recent research, AI models can greatly optimize important factors like crop health monitoring, water use, and nutrient dosing in both controlled and field settings, increasing the sustainability and efficiency of vegetable production systems. However, there are still significant obstacles that must be overcome for widespread use, including high implementation costs, problems with data quality, and the requirement for technical skills.

Keywords: *Artificial Intelligence, Decision Support System, Vegetable Farming, Machine Learning, Precision Agriculture*

Introduction

Due to the significant unpredictability of crop water and fertilizer requirements, vulnerability to pests and diseases, and quick quality deterioration, vegetable farming is intrinsically difficult. Conventional agricultural practices can result in inefficient resource utilization as they frequently rely on farmers' expertise and heuristic-based judgments. AI-Driven DSS uses cutting-edge algorithms and real-time data to improve decision accuracy and optimize agricultural inputs, resulting in increased yields and sustainability (Ajeet Kumar *et al.,* 2024).

Concept and Components of AI-Driven DSS

Definition and Overview

AI-Driven Decision Support Systems, which go beyond traditional advisory tools by employing predictive and adaptive learning from historical and real-time data streams, integrate hardware (sensors, IoT devices) and software (ML algorithms, predictive models) to interpret complex agricultural data and suggest the best course of action.

Core Components

- Sensors and Data Acquisition: Soil moisture, weather, and plant health sensors collect continuous field data.
- Machine Learning Models: Algorithms (e.g., neural networks, random forests) process data to predict outcomes.
- User Interface: Mobile or web platforms help farmers visualize insights and make decisions.

AI Techniques in Decision Support Systems

- **Machine Learning and Predictive Analytics:** AI models that predict yields, suggest fertilizer levels, and simulate irrigation requirements include Deep Neural Networks (DNNs), Random Forest, and Support Vector Machines (SVMs). DNNs predicted crop growth in hydroponic systems with great accuracy, whereas Random Forest models optimized water utilization (Ajeet Kumar *et al.*, 2024).
- **Deep Learning for Image-Based Assessment:** Using picture data, Convolutional Neural Networks (CNNs) are frequently employed to

identify nutritional deficits and plant diseases. AI programs like Plantix use photos of leaves to diagnose diseases and provide treatments, facilitating early intervention (Rehman *et al.*, 2024).

Applications of AI-Driven DSS in Vegetable Farming:

Irrigation and Water Management:

AI algorithms use meteorological and soil moisture data to precisely schedule irrigation, saving water and guaranteeing ideal moisture levels.

Nutrient Management:

In order to reduce input waste and enhance plant health, predictive algorithms suggest fertilizer dosages depending on crop stage and soil nutrient condition.

Pest and Disease Management:

AI models provide site-specific treatments prior to epidemics by identifying early indicators of illnesses or pest infestations.

Yield Prediction and Harvest Planning:

Accurate vegetable production forecasting is made possible by predictive analytics, which facilitates improved harvest and market supply planning.

Benefits of AI-Driven DSS

AI-Driven DSS offers several advantages:

- Higher accuracy in resource allocation
- Reduced inputs such as water, fertilizers, and pesticides
- Timely detection of stress and disease conditions
- Enhanced yield quality and quantity These contribute to sustainable farming and improved livelihoods for growers (Mdpi, 2025).

Challenges and Limitations

Despite benefits, AI DSS adoption faces challenges:

- High cost of technology and infrastructure
- Need for reliable and high-quality data
- Lack of technical expertise among smallholder farmers These issues must be addressed through training, low-cost solutions, and supportive policies.

Future Directions

Future developments include low-cost sensor networks for wider usage, blockchain for data transparency, and the integration of AI with robotics for autonomous agricultural operations.

Conclusion

By allowing accurate, sustainable, and data-driven judgments, AI-Driven Decision Support Systems have the potential to completely transform vegetable farming. Technology will be essential in tackling issues related to global food security as it develops and becomes more accessible.

Reference

Ajeet Kumar, R., Rajput, R., Bihari, C., Kumari, S., Rahman, A., Kanaujia, S. P., Jamir, S., Kumar, R., Shankar, R., & Singh, R. K. (2024). Role of Artificial Intelligence in Vegetable Production: A Review. Journal of Scientific Research and Reports, 30(9), 950-963.

Mdpi. (2025). Optimization of Vegetable Production in Hydroculture Environments Using Artificial Intelligence: A Literature Review. Sustainability, 17(7), 3103.

Rehman, M. Z., Raghuvanshi, D., & Kumar, N. (2024). KisanQRS: A Deep Learning-based Automated Query-Response System for Agricultural Decision-Making.

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7. AGRICULTURE

Challenges for Organic Dairy Farming in India

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Introduction

Dairy farming systems is currently expected to fulfil variety of objectives viz. milk supply, reduce environmental harm and boost animal welfare. Given rich indigenous information of livestock farming, rich biodiversity, accessibility of low-cost labour, lower cost of production of organic dairy farming and with still undiscovered large domestic market conversion to organic production seems like a profitable choice for Indian dairy farmers. However, given its stringent standard requirement it's hard to be adopted on a mass scale in short time. Indian farmers need to use the strengths and opportunities to overcome the challenges and potential threats. If supported by successive capability and information and establishment of certifying organizations and promotion of organic dairy products to enhance consumers awareness of organic products, its nature of being environment friendly and capacity to maintain quality of natural resources, it will help farmers to engage in organic production and will contribute to the wellbeing of the environment, the livestock species, the human being in general. It requires strong policy initiatives by government for organic farming by coming out from past dilemma and heart and soul implementation of those policies by all stakeholders (Ghosh, 2006; Wolde and Tamir, 2016).

Challenges For Organic Dairy Farming In India

1. **Small and Marginal farmer**: In India, dairy farming is dominated by small and marginal farmers, handling about 70% of total milk produced in country resulting in making the traceability a difficult option. But the increasing local demand of organic products and considering the promotion of co-operative dairy farming can overcome this inherent problem of small and marginal farmer dominance. Other innovative value chain model like *Ksheerasamruddhi* model in Kerala, which is based on forming Self Help Group to produce, package and supply quality milk at consumer doorstep could also be explored for organic milk production and marketing (Sreeram and Gupta, 2016).
2. **Incidence of disease**: Prevalence of diseases like foot & mouth and mastitis in various regions of India is a limiting factor for export of quality dairy products. India needs to overcome the prevailing unhygienic and messy condition at production sites and processing units, so as to be eligible for organic milk producing country (Barbuddhe and Swain, 2008). In organic dairy system, parasite infection is the biggest challenge in terms of animal health and product quality for the consumer (Hermansen, 2003; Kouba, 2003). So, controlling these diseases is a priority factor to increase the acceptability of dairy products. Though these problems can't be completely eradicated at once but can be controlled slowly by rational grazing management (like moving stock to uninfected areas), use of plant extracts, homeopathic treatment, special forage crops and improved pasture species, development of vaccines against parasites, animal nutrition (improving resilience and resistance), genetic resistance to nematode infections etc. (Hermansen, 2003; Ronchi and Nardone, 2003).
3. **Production drop and cost concern**: Productivity of cattle in organic dairy ranges from 10 to 18% i.e. higher milk yield as compared to conventional production system (Kamboj *et al*., 2013). Health of organic cows gets impaired due to poorer nutrition as affected by restrictions on feeds used in organic dairy production (Hermansen, 2003). The milk yield decreases during initial years of conversion from conventional to organic dairy farming, but in Indian condition, the lower productivity of indigenous animals and predominance of small dairy holders possibly demotivates the conversion. Another concern is that the organic dairy farming involves a more intensive use of labour. The labour needed to manage an organic farm is at least ten to twenty percent higher than conventional farms

(Wolde and Tamir, 2016). The costs of organic inputs are also often higher. Thus, though total costs for operating most organic farming systems are lower than those for comparable conventional farms this does not necessarily translate into higher net market income per unit of labour (Maji *et al.*, 2017).

4. **Lack of training and knowledge of organic farming**: In India, decades of promotion of chemical based farming method has eroded indigenous technological knowledge base. There is also lack of extensive promotion work concerning negative impact of products from inorganic farming. Low level of education among farmers and lack of knowledge and awareness about critical issues of organic farming is a big challenge for promotion of organic dairy farming. There is also lack proper training especially for organic dairy farming procedures and standards (Kamboj *et al.*, 2013).
5. **Foreign market dependence**: Domestic market for organic products is still at developing stage and the international trade in organic dairy products is considered a risky business due to poor sanitary conditions, existence of diseases, traceability problems as also self-sufficiency in importing countries. The restriction applied on import of agricultural products from developing countries is an important factor for the limited demand and less price premium in domestic market (Maji *et al.*, 2017).
6. **Polluted natural resources**: Intensive use of fertilizers and pesticides during the last few decades have contaminated the soil, water and other natural resources. Problem of pesticide residue is quite high in India despite of the fact that average consumption of pesticide in India is far lower than many other developed countries. Heavy use of pesticides has polluted fodder and animal feed concentrates resulting in contamination of milk and milk products (Prasad and Chhabra, 2001). The residue of pesticide in milk sample collected from intensive chemical farming practicing region of Punjab, Haryana, UP etc. showed a decline trend over the years but they did not cease to exist in milk. Some of the less popular and fat-soluble organophosphorus pesticides like acephate, diazinone, phorate, chlorpyriphos and malathion have been detected in foods with high fat content including dairy products. The mercury, lead, cadmium and arsenic are the common heavy metals detected in milk samples in India (Dwivedi *et al.*, 2001). Thus, for organic farming use of these chemical inputs should be stopped not only by the organic farmer but also in the surrounding fields.
7. **Organic dairy farming standard**: Organic dairy farming must meet stringent regulations and should be checked by well-developed mechanism but it is now lacking in India. Follow-up of these standard of developed nations is unacceptable and unfeasible for Indian dairy farmers (Maji *et al.*, 2017).
8. **Fodder shortage**: It is assessed that India has a demand of 1097 and 609 million tonnes of green and dry fodder against the supply of 400.6 and 466 million tonnes, respectively. Thus, it represents a deficit of 63.50% green fodder and 23.56% dry fodder. Due to rising population and decreasing land availability, it is unlikely that farmers will be able to delineate more land resources for fodder cultivation. On the other hand, available grazing lands also keep on declining over the years. Thus, the situation of shortage of fodder will further aggregate in future (Mishra *et al.*, 2009).
9. **Nutrition management challenge**: Studies in western nations suggested that some organic dairy farms may develop phosphorus deficiencies especially decreasing top soil phosphorus concentrations (Loes and Ogaard, 2001). Thus, milk fever or hypocalcaemia is sometime more in organic farming than conventional farming (Dwivedi *et al.*, 2001). Also, due to the low application of phosphorous by Indian farmers and already deficient nature of Indian soil, this issue can become a potential threat for fertility of soil in organic dairy farms.

References

Barbuddhe S.B. and Swain B.K. (2008). Hygienic production of milk: Technical Bulletin No. 11. Animal Science Section, ICAR, Goa, 17p.

Dwivedi S.K., Dey S., Swarup D., Dey S. and Patra R.C. (2001). Lead poisoning in cattle and buffalo near primary lead–zinc smelter in India. Veterinary and Human Toxicol., 43: 93-94.

Ghosh S.K. (2006). Scope of integrated organic farming in India with special reference to North Eastern States. In. Organic Animal Husbandry, Concept, Standards & Practices, Division of Extension Education, IVRI, Izatnagar, UP, pp. 54-56.

Hermansen J. E. (2003). Organic livestock production systems and appropriate development in relation to public expectations. Livestock Production Science, 90: 27–39.

Kamboj M.L., Rai S., Prasad S., Datt C., Harika A.S., Kumar N. and Kumar N. (2013). A Technical Bulletin on Organic dairy farming. LPM Section, NDRI, Karnal, India, 36p.

Kouba M. (2003). Quality of organic animal products. Livestock Production Science, 80: 33–40.

Loes A.K. and Ogaard A.F. (2001). Long-term changes in extractable soil phosphorus (P) in organic dairy farming systems. Plant and Soil, 23: 321–332.

Maji S., Meena B.S., Paul P. and Rudroju V. (2017). Prospect of organic dairy farming in India: A review. Asian J. Dairy & Food Res, 36(1): 1-8.

Mishra AK, Rama CA, Subrahmanyam KV & Ramakrishna YS (2009). Improving dairy production in India's rain-fed agro ecosystem: constraints & strategies. Outlook on Agri., 38: 284-292.

Prasad K.S.N., Chhabra A. (2001). Organochlorine pesticides in animal feeds and fodders. Indian J. Anim. Sci., 71: 1178 - 80.

Ronchi B. and Nardone A. (2003). Contribution of organic farming to increase sustainability of Mediterranean small ruminants livestock systems. Livestock Production Science, 80: 17–31.

Sreeram V. and Gupta J. (2016). *Kaheerasamruddhi*-An innovative dairy value chain model from Kerala. Indian Dairyman, 68: 62-65.

Wolde D.T. and Tamir B. (2016). Organic Livestock Farming and the Scenario in the Developing Countries: Opportunities and Challenges. Global Veterinaria, 16: 399-412.

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