IMPACT FACTOR 5.473(SJIF)
UPA NATIONAL E-JOURNAL
Interdisciplinary Peer-Reviewed Indexed Journal
Special Issue : Volume -9 : Issue - 2 (October-2023)
ISSN 2455-4375

ROLE OF MILLETS IN SUSTAINABLE DEVELOPMENT

Dr. Vishakha Kayande
Govindrao Warjukar Arts & Commerce College,Nagbhid 441205
Email -vishakhakayande@gmail.com
Mob.No. - 9422948124

Abstract:

Improving food and nutrient security is critical for feeding the world's ever-growing population. Millets give energy and nutrition to millions of poor people in low- and middle-income Asian and African countries. Millets, unlike traditional grains, require less fertiliser and pesticide to cultivate. Millets are high in nutrients and have remarkable climatic adaptability. As a result, promoting millets may aid in the achievement of the United Nations' (UN) Sustainable Development Goals (SDGs).

Keywords: *Millets, Sustainable, Green Revolution, Food Security, Water Footprint, Drought Resistant.*

Introduction:

Millets are a diverse genus of small-seeded grasses that are commonly farmed as cereal crops or grains for fodder and human sustenance all over the world. The majority of millets are members of the Paniceae tribe, however certain millets are also members of other taxa.

Millets are major crops in Asia and Africa's semi-arid tropics (particularly in India, Mali, Nigeria, and Niger), accounting for 97% of millet output. This crop is popular because of its great yield and short growth season in hot, dry circumstances.

Millets are native to many different places on the planet. When the International Year was announced at the UN Food Systems Summit, where IUFoST was one of the invited and leading organisations that provided scientific input, the necessity of consuming various millets in the composite diet for a Sustainable Food System was underlined. Food science and technology professionals from the IUFoST focused on the role of food science and technology in establishing sustainable and nutritious diets across nations. Millets are an excellent source of antioxidants and help enhance the capability of probiotics with potential health benefits. They play a role in the body's immune system, a solution to tackle childhood undernutrition and iron deficiency anaemia. Evidence indicates higher nutritive value of millets as compared to other cereal crops.

Role of Millets in Sustainable Development:

Millets have been consumed by humans for approximately 7,000 years and may have had a "key role in the rise of multi-crop agriculture and settled farming societies."Despite their numerous benefits, millets have largely been overlooked on the global food security agenda. Prior to the Green Revolution, millets accounted for over 40% of all grown grains, accounting

for more than wheat and rice combined. The world population is expected to reach 8.5 billion in 2030, 9.7 billion by 2050, and 10.4 billion by 2100, creating a requirement for increasing food production. Changes in temperature and rainfall patterns, in addition to food demand, are putting enormous strain on the environmental balance essential for agriculture. This is visible in occurrences such as increased intensity and frequency of droughts and floods, as well as irregular rainfall.

Millets, unlike popularly known cereals, may flourish in drought and non-irrigated situations because they have a minimal water footprint. Millets, for example, require less than 500 mm of water during the growing season, whereas sugarcane requires 2,100 mm and rice requires 1,250 mm. Finger millet and pearl millet require 350 mm of water to grow, whereas sorghum requires 400 mm.

Apart from the direct benefits to nutrition and food security, as well as their minimal water footprint, millets have some indirect benefits. They aid small farmers in crop rotation by maturing in 60-90 days as opposed to 100-140 days for other cereals. Millets absorb available nutrients efficiently and adapt well to better agro-land conditions, reducing reliance on synthetic fertilisers and pesticides and boosting output by up to thrice. Crop residues have a high carbon content, which helps to maintain and enhance soil carbon while also providing feed for cattle. This can help farmers protect their earnings, and the value-added goods create employment opportunities along the millet value chain. It may also result in less rural-urban migration.

With over 13 million tonnes produced annually, India accounts for roughly 80% of Asia's and 20% of global production. By encouraging the cultivation and consumption of millets, the Indian government hopes to give farmers with more sustainable and profitable incomes.

Millets are important for sustainable development because they contribute to the following Sustainable Development Goals (SDGs):

Millets are a low-cost and economical source of nutrition, making them accessible to even the poorest people.

• SDG : No Hunger: Millets are a nutrient-dense food that can aid in the reduction of malnutrition and hunger.

• SDG : Good Health and Well-being: Millets are high in important vitamins, minerals, and antioxidants, all of which benefit overall health and well-being.

• SDG : Clean Water and Sanitation: Millets require less water to grow than other crops, making them a viable option in water-stressed areas.

• SDG : Climate Action: Millets are drought-tolerant and adaptable, making them a climate-resilient crop.

• SDG : Life on Land: Millet farming can aid in the improvement of soil health and biodiversity.

Sustainable diets conserve biodiversity and ecosystems while having a low environmental impact, contributing to food and nutrition security. Diversifying crop output by including coarse grains like millets can increase food supply, reduce GHG emissions, and improve climate resilience without sacrificing nutritional value. Millets were identified as a feasible choice for food security and environmental resilience in a quantitative study of changing monsoon cereal production in India.

Millets have also played an essential role in soil fertility and texture improvement, enhancing yield and thereby farmer returns. Millets may withstand long periods of drought once their root system is formed. When it starts raining, the plants come back to life and produce something by the end of the season. Millets are thus fairly successful at nutrient aggregation, and if we are mindful of closing the nutrient loop locally, we can see a significant improvement in soil health.

Millets are a valuable crop for sustainable development, but they are still underutilised in many parts of the world. There is sufficient evidence that millets are a rich source of calories, carbs, lipids, protein, soluble and insoluble fibre, antioxidants, iron, zinc, and vitamins and can assist India and other developing countries reduce micronutrient deficit. It lowers cholesterol because it is high in polyunsaturated fatty acids and omega-3 fatty acids. A white paper on 'Mainstreaming Millets for Nutrition Security' in India, released in 2021, gives a detailed framework for strengthening the whole value chain by addressing gaps and argues for replicating scalable strategies across states for millet promotion throughout the country. It is time to unleash the power of millets by raising consumer awareness of their nutritious benefits and encouraging a shift in consumer preferences.

Conclusion:

In conclusion, millets play an important part in sustainable development. They are a healthy and sustainable food supply that can assist to improve food security and nutrition, reduce poverty, and mitigate climate change.

Millets are drought-tolerant and can thrive in a variety of climates, making them an important crop for farmers in marginal locations. They are also low-input crops, requiring less water and fertiliser than other grains. As a result, they are a more sustainable solution for both the environment and farmers.

Millets are also very healthy, with a nice balance of protein, carbs, fibre, and vitamins and minerals. They are particularly high in iron, zinc, and calcium.

As a result, they are a valuable food source for those living in developing nations, where hunger is a big issue.

References :

- Millets and the environment. The Millet Foundation. Published September 9, 2016. Accessed October 3, 2023. https://themillet.org/millets-and-the-environment/#:~:text=Millets%20being%20rain%20fed%20crops,and%20yield%20a%20good%20harvest.
- Scientific Roundtable Discussion - Millets for Enhancing Agri-economy, Nutrition, Environmental and Sustainable Development Goals. International Year Of Millets. Published March 30, 2023. Accessed October 3, 2023. https://www.fao.org/millets-2023/events/detail/scientific-roundtable-discussion---millets-for-enhancing-agri-economy-nutrition-environmental-and-sustainable-development-goals4/en
- Wikipedia Contributors. Millet. Wikipedia. Published September 16, 2023. Accessed October 3, 2023. https://en.wikipedia.org/wiki/Millet
- Chand A. Millets as a Key to Improving Food and Nutrition Security and Promoting Sustainable Consumption. ORF. Published July 29, 2023. Accessed October 3, 2023. https://www.orfonline.org/research/millets-as-a-key-to-improving-food-and-nutrition-security/#:~:text=Apart%20from%20the%20direct%20benefits,grains%20take%20100%E2%80%93140%20days.
- Balakrishnan G, Goodrich-Schneider RM. The Role of Amaranth, Quinoa, and Millets for the Development of Healthy, Sustainable Food Products—A Concise Review. *Foods*. 2022;11(16):2442-2442. doi:https://doi.org/10.3390/foods11162442
- United nations. Millets - good for people, the environment, and farmers. United Nations Western Europe. Published January 13, 2023. Accessed October 4, 2023. https://unric.org/en/millets-good-for-people-the-environment-and-farmers/