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MILLETS PRODUCTION FOR SUSTAINABLE AGRICULTURE AND FOOD SECURITY

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Abstract:

Millet is grain that is mainly consumed in many parts of the world and is a main food in Africa and Asia. According to the World Food Programme, there are an estimated 1.2 billion people who consume millet as part of their diet. The majority of the millet production in the world is in Africa, followed by Asia Millets have been identify by various names, such as "Mota Annaj," "Nutri-cereals," "coarse cereals," and "cereals of the poor". The latest addition to this list of names is "Shree Ann—the mother of all grains," coined by the Finance Minister of India, Mrs. Nirmala Sithraman, during her budget speech on February 1, 2023, and also announced that the Indian Institute of Millets Research (IIMR) at Hyderabad would be converted to the Centre of Excellence.In Indian millets are a group of nutritiously rich and drought-tolerant plants and are mostly found in the arid and semiarid regions of India. They are small seeded grass belonging to the botanical family "Poaceae " and are an important source of food and fodder for millions of resource-poor farmers and play an important role in the economic security of India. In 2018, India declared millets as "Nutri-cereals" and introduced them in "Poshan Abhiyaan" in an effort to alleviate malnutrition and micronutrient deficiency among the poor. This emphasis on millets led to increased production (27% growth) of millets in 2021–2022.

Keywords: *Millets Production in India; Food security; Health benefits; IYOM 2023; Millets; Sustainable agriculture*

Objectives:

1. To study the Millets Production in India
2. To Study Millets as a food security.
3. To Study Health benefits of Millets

Research Methodology:

The present study are mainly based on Secondary data, the data are collected from various resources

Millets Production in India:

India is the largest producer as well as the largest exporter of cereal products in the world .India exports of cereals stood at Rs.90,961.67 Crore during the year 2023-24.Rice occupy the major share in India's total cereals exports with 95.5 % during the Same period .India is the world's largest producer of millets (38.40 % of worlds production)second largest producer of rice (25.27 % of worlds production)and wheat (13.33 % of worlds production)and fifth largest producer of Maize (2.9 %of Worlds Production)(FAO)

Millets as a Subhead consists of Sorghum (Jowar), Pearls millets (bajra),Finger Millets(ragi),Banyard Millets ,Proso Millets ,Kodo Millets ,Buckwheat,Ammarthus and Foxtail .Being excellent source of essential nutrients to the millions of Indians ,they are also called as 'nutritious cereals'.The Indian Millets are nutritionaliy superior to wheat and rice as they are rich in protein ,vitamins and minerals .They are also gluten-free and have a low glycemic index ,making them ideal for people with celiac diseases or diabetics .India is the world's largest producer of Millets with the share of 38.40 % of worlds production.(FAO).

India is one of the largest agricultural product exports

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in the world .In Apr-July 2024 the overall value of export of agricultural products stood at US $15.76 billion. In 2023-24 the agricultural export from india stood at US$ 52.50% billion .In 2021-22, the country recorded US $50.2 billion in total agriculture export with a 20% increase from US $41.3 %billion in 2020-21.India's agriculture sector primarily exports agri & allied Products, marine products, plantation, and textile & allied products.Agri &allied products exports were valued at US$37.3 billion, recording a growth of 17% over 2020-21.

In 2022-23, rice exports from India were valued at US$11.14 billion, as against US$ 9.67 billion in 2021-22, registering a growth of 15.22%. Rice is the largest exported agricultural products from India and contributed to more than 20% of total agriculture exports during the year 2022-23.

Millet Producing States in India:

The Main Millets Producing states in India are Rajasthan, Maharashtra, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Tamil Nadu, Andhra Pradesh, and Uttarakhand, Recently, combined of these ten states account for around 99 per cent in millets production in India during the period 23-24 .In this period, the export of millets and millets related products from the country has been shipped worth of 169049 .11 MT valued Rs.608.12 crore. Millets have been the staple food in India for centuries, but over the years they have been in less demand and they have been losing importance as a source of food due to the increasing demand for rice, wheat, and other processed food. Jowar (sorghum), bajra (pearl millet), and ragi (finger millet) are the three main millet crops that are currently being grown in India. India also produces a wide variety of indigenous, biogenetically diverse "small millets," such as kodo, kutki, chenna, and sanwa. Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat, and Haryana are the major producers of millet in our country.[1] These states have a larger number of millet farmers who grow millets for both domestic and international markets.

Food Security:

Millets are a group of staple food crops in India and play a significant role in food security, especially for the rural and poor populations. Millets are highly nutritious and are capable of providing food security to people in areas where other crops cannot be grown easily due to harsh climatic conditions. They are hardy and drought-resistant and can be grown in marginal soils and regions with low rainfall, making them a reliable source of food even in challenging environmental conditions and ideal for farmers in such regions. Additionally, millets are also capable of being stored for long periods, which is important for food security in times of scarcity. Overall, millets are a crucial component of food security in India and their revival can contribute to the sustainable development of the country's agricultural sector.

The global community has been faced with numerous challenges and threats to food security in recent times due to the coronavirus disease 2019 (COVID-19) pandemic, recent economic recession, and Ukraine–Russia war. Food security is a serious issue during these times as there are disruptions to the food supply chain, concerns about shortage of essential goods, rising prices, and the impact on vulnerable populations. Millets can become of paramount importance in safeguarding food security during these critical times by diversification of crops that farmers grow and removing dependency on a single crop. This can help increase food security by ensuring that there are alternative sources of food in case one crop fails. Millets being highly nutritious may help address the issue of malnutrition prevalent in many regions of the world. Millets are tough and affordable and can be grown with minimal inputs, which can provide a source of income for small farmers and can help improve their

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economic conditions during times of economic recession. Millets are also drought resistant, making them an excellent choice to withstand the effects of climate change. This guarantees that farmers and locals have enough food even during extreme weather events. Economic recession makes the population vulnerable due to increasing employment, decreasing household incomes, and rising food prices. As millets are locally available and low cost food source, they are very relevant during are very relevant during unprecedented or vulnerable times.

Sustainable Agriculture:

The cultivation of millets requires less water compared with other crops, making them ideal for regions with water scarcity. Millets are highly adaptive to a wide range of ecological conditions, which thrive well in rain-fed, arid climate but can also be grown in mountainous, low-fertility, dry, rain-fed, and tribal areas. It requires less labor-intensive cultivation, has shorter cultivation cycles, and is beneficial to the soil. Millets can be a long-term source of income for farmers due to low investment requirements. Millets are also used as fodder, which makes it more farming efficient. They also require fewer inputs, such as fertilizers and pesticides, making their production more sustainable and environmentally friendly. The promotion of millets can contribute to a reduction in the carbon footprint, making it an environmentally conscious food choice. Millets are the world's answer to a sustainable source of food for combating hunger in the rapidly changing global climate and constructing climate-resistant agri-food systems.

Health benefits of Millets:

Millets are highly adaptive to a wide range of ecological conditions and thrive well in rain-fed, arid climate and they have minimal requirements of water ,fertilizers ,and pesticides .There are several types of millet grown in India, each with its unique nutritional profile. Indian millets are nutritionally superior to wheat and rice as they are gluten free and rich in fiber, minerals (iron, zinc, folate, phosphorous, copper, calcium, etc.), vitamins, and antioxidants, making them ideal for people with celiac disease and gluten intolerance. They have a superior micronutrient profile and are rich in bioactive flavonoids. They are also beneficial for people with type 2 diabetes mellitus as they have a low glycemic index, which helps in controlling blood sugars. Millets are also beneficial for people with heart diseases as they contain magnesium, which helps in reducing hyperlipidemia and thus the risk of heart diseases. They also help in reducing weight and reduction in blood pressure. In India, we usually consume millets with legumes, which create a mutual supplementation of protein, increases amino acid content, and enhance the overall digestibility of proteins. Millet cultivation helps to reduce the carbon footprint.

International Year of Millets (IYOM) 2023:

The IYOM 2023 is a global initiative by the Food and Agricultural Organization of the United Nations (FAO) to raise awareness about the importance of millets as a food crop and to encourage the production and consumption of these crops. India has been the granary of millets with an estimated share of around 41% of the global production, and it was but natural for India to intensify its effort to revive the significance of millets and promote their consumption. Hence, the Indian government had suggested to the United Nation for declaring 2023 as the "International Year of Millets" (IYOM 2023). India got the support of 72 other countries, and on March 5, 2021, the United Nations General Assembly (UNGA) declared 2023 as the IYOM. The aim of IYOM 2023 is to create awareness about the numerous health benefits, improve food security, and support sustainable agriculture. The Indian government has also established the National Millet Mission to support this cause. IYOM 2023 provides an opportunity for India to showcase its

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expertise in millet cultivation and processing and to promote the health and nutritional benefits of these crops to a wider audience. The Indian government and other stakeholders can also use this opportunity to revive the cultivation and consumption of millets and increase global production of millets, which can contribute to the sustainable development of the country's agricultural sector and help to ensure an increased contribution of millets to food security for its population. The Indian government also aims to increase the acceptability of the "value addition of millet" across the country and the world.

Millets and benefits to the Indian Economy:

Millets have several benefits to the economy of India like

1. Job creation: The cultivation, processing, and marketing of millets can create new jobs in rural areas, especially in farming communities, and help to reduce poverty and improve rural livelihoods.
2. Increased agricultural production: The promotion of millet cultivation can increase agricultural production and provide a reliable source of food for the population, especially in regions that are prone to drought and other climatic conditions that affect other crops.
3. Improved food security: Millets are a nutritious and drought-resistant food crop that can help to ensure food security for the population, especially in regions where food shortages are common.
4. Improved trade: The increased production and consumption of millets can lead to increased trade, both within the country and internationally, as demand for these crops grows.
5. Reduced import dependence: The promotion of millet cultivation and consumption can reduce the country's dependence on imported food products and help to promote self-sufficiency in food production.
6. Boost to the rural economy: The cultivation, processing, and marketing of millets can provide a boost to the rural economy and help to improve the standard of living for rural communities.

Overall, the promotion of millets can provide multiple benefits to the economy of India, including increased agricultural production, improved food security, increased trade, reduced import dependence, and boost to the rural economy.

Conclusion:

The promotion of millets is crucial for improving food security, promoting sustainable agriculture, and improving health outcomes. The government and relevant stakeholders need to work together to ensure that millets are widely available, and their consumption is promoted. This will help in increasing the importance of millets in the Indian food system, contributing to the health and well-being of people and the environment.

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