MILLETS:

ANCIENT GRAINS FOR MODERN SOLUTIONS IN NUTRITION AND FOOD SECURITY

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INTRODUCTION

The term "Millet" is derived from the Latin word "Milum," which signifies grain. Millets are a category of small-seeded grasses that are a member of the Poaceae botanical family. They are cultivated worldwide as cereal crops or grains for human consumption and as sustenance for millions of resource-poor farmers. Additionally, millets are essential for the ecological and economic security of India. The term "coarse cereals" or "cereals of the poor" is also used to describe these millets. Millets have been recommended as a means of addressing food insecurity in regions that are susceptible to fluctuating temperature and rainfall patterns, such as India and sub-Saharan Africa, due to their resilience. Millet grains are abundant in carbohydrates, with a protein content that ranges from 6 to 11 percent and a fat content that ranges from 1.5 to 5 percent.

WHY MILLETS CAME INTO EXISTENCE AGAIN?

Millet production has experienced a resurgence in recent years, as a result of increasing awareness of the advantages of millets for human health and the environment. Millets are highly nutritious, gluten-free, and have a low glycemic index, making them an ideal food for individuals with diabetes and other health conditions. Additionally, they are highly adaptable to a variety of climatic conditions, making them an ideal crop for small farmers in developing countries. Millets require less water and fertilisers than other crops, which makes them a sustainable option for agriculture medicine in India, where they are believed to have cooling and soothing properties. Millets have immense potential in our efforts to combat climate change and poverty, as well as to provide food, nutrition, fodder, and livelihood security.

TYPES OF MILLETS:

Finger Millet :

Finger millet, also known as Ragi, is a primary dietary component in numerous African and South Asian nations. It is thought to have been cultivated approximately 4,000 years ago. Furthermore, it is regarded as a beneficial crop during times of famine due to its convenient storage capabilities for periods of scarcity. The grain is easily digested, extremely nutritious, and adaptable. It can be prepared similarly to rice, ground into porridge or flour, or utilised in cake recipes. In addition to its culinary uses, finger millet is also employed in the production of alcoholic beverages such as spirits and beer. Finger millet is a rich reservoir of protein, fibre, and other vital minerals like calcium, iron, and potassium. Additionally, it is free from gluten and possesses a low glycemic index, rendering it a favourable option for individuals with celiac disease or diabetes.

Sorghum:

Sorghum is a warm-season crop that is relatively resistant to severe pests and diseases, despite its insensitivity to low temperatures. Most of the sorghum produced in North and Central America, South America, and Oceania is utilised as animal feed. Sorghum is a primary crop in India and Africa and is one of the oldest cereal grains. It is regarded as a secure alternative to food grains for individuals with celiac disease and gluten intolerance. It is also highly favoured by individuals who are unable to tolerate wheat-based products due to its gluten-free nature. Additionally, it is abundant in fibre, protein, and iron.

Foxtail millet:

Foxtail millet or Italian millet are likely to have originated in China. It is one of the ancient cereals that have been cultivated in Europe and Asia, with China accounting for over 45.00 percent of the global production. Foxtail millet is an excellent source of protein, fibre, and several critical micronutrients, including magnesium, phosphorus and iron.

Pearl millet:

Bajra, or pearl millet, is believed to have originated in Africa as early as 5000 years ago and was introduced to the Indian subcontinent approximately 3000 years ago. Pearl millet is a drought-resistant and resilient crop that can thrive in substandard soil. It is an excellent source of protein, fibre, and several critical micronutrients, including zinc and iron. Pearl millet is rich in magnesium, which is beneficial for asthma patients and alleviates the symptoms of migraines. Pearl millet's fibre content contributes to the prevention of gallstone formation. The insoluble fibre found in pearl millet aids in the reduction of excessive bile in the body, which can result in gallstones.

Little Millet :

Little millet was domesticated in the Eastern Ghats of India as early as 2000 years ago. The cereal is primarily cultivated in peninsular Indian states such as Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala. The crop is capable of thriving in both arid and humid environments, and it can be cultivated in water-logged and drought-prone regions due to its early maturity and ability to withstand adverse conditions. Little millet is an excellent source of protein, fibre, and several critical micronutrients, including phosphorus, calcium, and iron. For example, weaning food, cutlets, vermicelli, instant beverage powder, bread, muffins, cakes, chapati, , kheer, instant idli, extruded products, snack bars, biscuits, and beverages.

Kodo Millet :

The origins of kodo millet are said to be in India, where it has been grown for more than 3,000 years. India is a country where it is widely grown, particularly in the west and south. Iron, calcium, potassium, and protein are just a few of the essential minerals that kodo millet provides. It is also high in fibre. A traditional grain that helps with weight loss, kodo millet is similar to rice. It is readily absorbed and high in antioxidants and phytochemicals that help prevent a variety of ailments linked to an unhealthy lifestyle. Additionally, kodo millet relieves knee and joint pain and helps women's menstruation become regular.

Proso millet:

Broomcorn millet, also known as Proso millet, is believed to have originated in the Manchurian region of China. It is currently grown in northwest China, as well as in southern and central parts of India, Australia, the USA, and Europe. It is the third most significant millet crop grown, following pearl millet. Proso millet has a helpful effect in preventing the ailment known as Pellagra, which is caused by a shortage of niacin, also known as Vitamin B3. It contains a significant amount of Niacin. Traditionally, it is commonly used as a restorative dish, particularly after childbirth or during periods of illness. Proso millet is a nutritious food that provides ample amounts of protein, fibre, as well as essential minerals like iron and magnesium.

THE ROLE OF MILLETS IN THE HUMAN DIET:

They are referred to as 'nutri-cereals'. Incorporating millets into our meals can provide a wide range of nutritional advantages, including addressing both under-nutrition and micronutrient deficiency, as well as regulating over-nutrition. Millets have been a significant component of the human diet for millennia. Millets outperform other cereals in multiple aspects, exhibiting high concentrations of iron, magnesium, and zinc, a low glycaemic index, substantial amounts of protein and fibre, and being devoid of gluten, rendering them a perfect dietary choice for individuals with celiac disease or gluten intolerance. Millets are frequently utilised in the preparation of porridge, flatbreads, and baked foods. In India, traditional meals like chapatti, dosa, and idli are made using millets such as ragi (finger millet), jowar (sorghum), and bajra (pearl millet). Millets in Africa are utilised for the preparation of porridge, bread, and beer.

THE SIGNIFICANCE OF MILLETS IN ENSURING FOOD SECURITY:

Food security is the state in which every individual has consistent and unrestricted access to safe, adequate, and nourishing food that fulfils their dietary requirements and preferences, enabling them to lead an active and healthy lifestyle. The four fundamental components of food security encompass the presence of food, the ability to obtain food, the effective utilisation of food, and the stability of food supply. Millets play a crucial role in ensuring food security, especially in regions where challenges like climate change and other reasons have hindered the cultivation of staple crops like rice and wheat. Millets have a lower water requirement compared to rice and wheat, making them well-suited for regions with limited rainfall. Furthermore, millets are commonly cultivated by small-scale farmers, serving as a means of generating revenue and ensuring food stability for rural communities.

CONCLUSION:

Millets, with their rich nutritional profile and resilience to adverse climatic conditions, represent an invaluable resource for ensuring food security and promoting sustainable agriculture. Their ability to thrive in low-rainfall regions and nutrient-poor soils makes them an ideal crop for small farmers in developing countries. The revival of millet cultivation could significantly enhance food security and provide numerous health benefits, thereby improving the livelihoods of millions worldwide. Embracing millets as a staple in modern diets can play a crucial role in combating nutritional deficiencies and fostering a more sustainable food system.