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A Consumer Behaviour Towards Millets Products

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ABSTRACT

In addition to being nutrient-dense, millets also serve as a hedge against a number of uncertainties (food, fodder, fiber, health, etc.). However, due to its nutritional advantages and the fact that its production has decreased recently, millets must be resurrected. To combat malnutrition, customers should be urged to incorporate millets into their daily diet. Therefore, in order to attain healthy food intake and combat a number of health issues facing this generation, it is essential to comprehend consumer acceptability of millet-based products as well as the characteristics influencing consumer purchasing behavior toward millet products. In light of this, the current study was conducted to determine the variables impacting sample customers' purchasing decisions of millet goods and to gauge consumer approval. Consumers' purchase intention and preferences are influenced by price, quality, health-related benefits, and awareness about the product. This paper aims to know and understand the consumer perception of millets and to recognize the factors that influence their purchase.. The factors that were found were categorized as important nutrients, perceived value, and leading a healthy lifestyle. According to the Friedman test, maize was the most popular cereal in Tamilnadu, and there was a significant difference between the mean values of the most nutrient-dense cereals. The report suggests specific tactics based on the results, such as food manufacturing companies introducing a range of millet-based snacks.

Keywords: Nutrient-dense, Healthy lifestyle, Consumer behaviour, Millet-based snacks.

Millets:

Millets are a diverse collection of small-seeded grasses that are farmed all over the world as grains or cereal crops for human use and fodder.

Introduction

High-energy meals known as millets or nutri-cereals were first domesticated and grown as early as 10,000 years ago and are now a significant crop in Indian agriculture and cooking. India is the world's largest producer of millet, with an annual production of about 17 million tonnes. Millets are currently experiencing a renaissance in India as a result of increased awareness of their nutritional worth and health benefits. Millets are now being used by many businesses to create products including breakfast cereals, snacks made of millet, and baked millet foods. Millets are beneficial to the environment, the farmer, and you. Millet's nutritional and physiological benefits are the primary reasons it is regarded as beneficial to health. Excellent nutrition, including protein, fibre, vitamins, and minerals, may be found in millets. Among the health advantages of millet consumption include weight loss and a decreased risk of developing diabetes. Farmers benefit from millets since they require little to no water for growing and harvesting. These millets are regarded as crops that can withstand drought. Millets are beneficial to the environment since they use less water and produce grains that are high in health and nutritional value, which helps to protect the environment as well as people's health and well-being. Ancient Indian culture had millets as a staple food. The popularity of millets unfortunately declined as they evolved. Once more, because of its amazing advantages, millet is gradually making a comeback in people's lives.

Review of literature:

Indian millets produce multiple securities such as securities in food, nutrition, fodder, fibre, health, livelihood and ecology (Bommy and Maheswari, 2016).

National Nutrition Monitoring Bureau has reported that the consumption of millets was higher in the states of Gujarat (pearl millet, maize), Karnataka (finger millet), Maharastra (sorghum) but negligible in the states of Kerala, Orissa, West Bengal and Tamil Nadu where rice is the most consumed cereal (NNMB, 2006).

Cereals are being consumed as main staple by Indians that constitute 70-80% of the total energy intake (Gopalan et al., 2009).

Recent study by NNMB on dietary profile of urban Indians [from the Chennai Urban Rural Epidemiology Study (CURES)] revealed that only 2% of the total calories (6.7 g/d) were contributed by the millets (Radhika et al., 2011) .

Millet by products

Millets such as jowar, finger millet, proso millet, kodo millet, foxtail millet, small millet, and brown top millet, as well as their processed products were chosen specifically for the study. Cakes, biscuits, instant roti, muruku, papads, ladoos, flours, multigrain flour mixes, millet bars, idly mix, dosa mix, upma mix, and pizza base of millet-based items of various brands were among the processed goods.

Consumers Awareness about millets

Despite the numerous health advantages of this nutrient-dense grain, millets are often not well-known to consumers. This results from a lack of knowledge on the health advantages of millet and how to cook it.

Vitamin benefits and price list of various millets

S.No	Millets	Vitamin Benefits	Price of millets
1	Foxtail millet	Vitamin A, Vitamin B1,B2,B3	₹100 per kg
2	Brown top	Vitamin B	₹180 per kg
3	Sorghum	Vitamin B6	₹140 per kg
4	Kodo	Niacin vitamin B3	₹120 per kg
5	Barnyar	Folic acid	₹110 per kg
6	Pearl (bajra)	Vitamin A, Vitamin E	₹105 per kg

Crucial millets

Pearl Millet Originating in Central Tropical Africa, pearl millet (Pennisetum glaucum (L.) is found across the drier tropics and India. In the 1850s, it was brough to the West, and in the states around the Southeast and Gulf Coast, it established itself as a minor forage. It is likely that the plant was domesticated as a food crop between 4000 and 5000 years ago around the southern edge Of the Sahara's central highlands. Since then, it has spread rapidly over Asia's and Africa's semiarid tropics. In many developing nations, pearl millet has long been a significant grain, forage, and stover crop, mostly in dry and subtropical areas. As the production of pearl millet spreads into previously uncultivated regions in developed and temperate nations,

Kodo Millet

Throughout the world's tropics and subtropics, kodo millet (Paspalum scrobiculatum is extensively found in mois t environments . India's native cereal is currently farmed in Kerala and Uttar Pradesh in the north and the southern state of Tamilnadu. Other names for this cerea l are varagu, haraka, and arakalu. It serve s as the corner stone of the nutritional requirements for diet. It contains a very high fiber content (14.3%), low fat level (4.2%), and a high protein content (11%). Kodo millet has a high lecithin content, is very easy to digest, and is great for bolstering the

neurological system. Kodo millets are high in minerals like calcium, iron, and B vitamins, particularly niacin, B6, and folic acid.

Sorghum:

A warm-season crop, sorghum is not tolerant of low temperatures but is reasonably resistant to harmful pests and illnesses. It goes by several names, including guine a corn and giant mille t in portions of the Middle East, Asia, and West Africa. The majority of sorghum is grown in Oceania, South America, and North and Central America. (FAO, 1995) is utilized for animal feed. The pericarp, endosperm, and germ make up the bare caryopsis that makes up the grain. Despite their enormous physical variation.

sorghum are divided into four categories:

(1) Sudan sorghums and broomcorn (1993);

(2) Grain sorghum;

(3) Grass sorghum; or

(4) Forage sorghum glum

Barnyard Millet

A multipurpose crop grown for food and fodder is barnyard millet . It also goes by a number of other names, including sawan, ooda, oodalu, Japanese barnyard millet, sanwa, and sanwank. Additionally, it is a fantastic source of highly digested protein and a great supply of dietary protein. Fiber that contains both insoluble and soluble components in good amounts. Because of its low and slowly digesting carbohydrate content, barnyard millet is a natural gift for modern humans who lead sedentary lives. The primary fatty acid in barnyard millet is linoleic acid, which is followed by palmitic and oleic acids. Additionally, a significant level of amylase retro gradation is seen, which helps.

Little millet

India was the country that domesticated the little millet (Panicum sumatrense) . It is not very significant outside of India, however it grows to a limited extent up to 2100 meters. Little millet seeds are smaller than normal millet seeds. With the exception of its lower size, this grain species shares habits with proso millet. This herbaceous annual plant can grow up to 30 cm to 1 m tall, either erect or with its blades folded. Occasionally, the leaves have membranous hairy ligules and a hairy lamina. With an awn that is 2 to 3.5 mm long, the panicles range in length from 4 to 15 cm. The grain measures 1.8 to 1.9 mm in length and is smooth and spherical. It can tolerate both droughts.

Foxtail millets

The high fiber content of foxtail millet. Both soluble and insoluble fiber found in foxtail millet can aid in blood sugar regulation, satiety promotion, and better digestion. Additionally, foxtail millet's soluble fiber can help lower cholesterol and lower the risk of heart disease. Furthermore, foxtail millet's high fiber content may assist enhance gut health and avoid constipation. In India is available in this millets supermarket, health food store, organic market, or grocery store to locate and purchase foxtail millets.

BENEFITS OF MILLETS:

Millets are minimal cereal grains that are rich in vitamins, minerals, fiber, and protein. They have numerous health advantages and are gluten-free, including:

Controlling weight

Millets' high fiber and complex carbohydrate content can aid in weight loss.

Heartwell-being

Millets have the potential to safeguard cardiovascular health.Diabetes Due to their low glycemic index and lack of blood sugar rises, millet can help avoid type 2 diabetes.

Digestive health

Millet can lower the risk of gastrointestinal disorders and assist control intestinal inflammation.

Bone health

For healthy bones, millets like foxtail millet are a wonderful source of calcium, iron, and phosphorus.

Health of the brain

Children's brain health may benefit from the high protein and amino acid content of millets like finger millet.

Health of the nervous system

The neurological system can be strengthened by the B vitamins and minerals like calcium, iron, and magnesium found in millets like kodo millet

Blood pressure

Millets have the potential to lower blood pressure. The health advantages of different varieties of millets vary:

Health Benefits of Millets

Epidemiological studies have demonstrated that eating millets may have health benefits, including

- lowering the risk of heart disease,
- preventing diabetes
- Improving the digestive system,
- lowering the risk of cancer,
- detoxifying the body,

- boosting immunity in respiratory health,
- boosting energy levels,
- improving the muscular and neural systems

Millets contain essential nutrients such lipids, resistant starch, oligosaccharides, and antioxidants like phenolic acids, avenanthramides, flavonoids, lignans, and phytosterols, which are thought to have numerous health advantages.

Reasons for consumption of millet products:

The major reasons for consuming millet products were taste, health benefits, weight loss, and other reasons such as habit since childhood, interest in trying new products etc.

Nutrient Density: A balanced diet and the avoidance of nutritional deficits depend on the abundance of vitamins, minerals, and dietary fiber found in millet.

Resilience to Climate Change: Millets are a dependable crop in regions with low water availability because they can withstand drought conditions and are well adapted to India's varied environment.

Blood Sugar Control: Millets are thought to help control blood sugar levels because of their low glycemic index, which makes them appropriate for diabetics.

Digestive Health: Millets' high fiber content supports gut health and facilitates digestion.

Gluten-Free Option: Since millet is inherently gluten-free, anyone with celiac disease or gluten sensitivity can use it as a substitute.

Protein Source: Millets have a comparatively higher protein content than other grains like rice.

Nutritional Importance of Millets

For millions of people worldwide, sorghum and millet specifically, Pearl millet, Finger millet, Kodo millet, Proso millet, Foxtail millet, Little millet, and Barnyard millet are essential staples. These crops are typically rain-fed and cultivated in regions with little rainfall, making them more crucial for

long-term agriculture and food security. Nearly all of the Most developing nations use millets for human food, while in industrialized nations, their use has mostly been limited to animal feed. Millets are a good source of protein, minerals, and photochemical and have nutritional value comparable to main cereals. The amount and activity of antioxidants are impacted by processing techniques such as soaking, malting, decortications, and cooking (Saleh et al., 2013). Although the majority of millets and sorghum contain roughly 10% protein, 3.5%

Schemes of government of India to promote millets

National Food Security Mission (NFSM): Launched in October 2007 for ensuring holistic development of agriculture and allied sectors The NFSM includes the cultivation of millets as one of its components. It aims to increase the production of millets and other crops to enhance food security and improve the income of farmers.

Rashtriya Krishi Vikas Yojana (RKVY): Launched in 2007 as an umbrella scheme for ensuring holistic development of agriculture and allied sectors. Re-structured as RKVY Cafeteria Scheme from 2022-23 onwards merging some schemes Paramparagat Krishi Vikas Yojana cation Programme etc. RKVY supports the □(PKVY), Crop Diversi nancial assistance to□cultivation of millets and other crops by providing states. It promotes the adoption of improved farming practices, technologies, and infrastructure development for millet cultivation.

National Mission for Sustainable Agriculture (NMSA): National Mission for Sustainable Agriculture (NMSA) has been formulated for enhancing agricultural productivity especially in rainfed areas focusing ciency, soil health management and□on integrated farming, water use of synergizing resource conservation. NMSA focuses on promoting sustainable agricultural practices, including the cultivation of millets. It aims to enhance productivity, conserve natural resources, and support farmers in adapting to climate change.

Paramparagat Krishi Vikas Yojana (PKVY): PKVY encourages organic farming practices, including the cultivation of millets. It provides nancial assistance and technical support to farmers to adopt organic□ cation.□farming methods and obtain organic certification.

Nutri-Cereals Campaign: Sub-Mission on Nutri Cereals under NFSM started with an outlay of Rs.300.00 crores for 2018-19. It aims to develop strategy for addressing issues concerning production, demand, and research with market-oriented approach. Increasing production of Nutri Cereals through area expansion and productivity enhancement in a districts of the country.□Sustainable manner in the identi Strengthening seed supply system of Nutri-Cereals. Enhancing postharvest value addition at farm gate for better price realization to farmers through efficient market linkages.

Millets Development Program: The Indian Council of Agricultural Research (ICAR) has initiated a Millets Development Program to support research, development, and promotion of millets. The program focuses on improving millet varieties, agronomic practices, and post-harvest technologies

Secondary data: refers to data that is collected by someone other than the primary user. Common sources of secondary data for social science include censuses, information collected by government departments, organizational records and data that was originally collected for other research purposes

Conclusion:

Products made from millet should be made available to the general population via the population Distribution System in addition to rice, wheat, Kerosene, frying oil, and pulses. In the past, millets were extremely inexpensive since they were viewed as inferior grains to cereals. The market for millet and millet-based goods has increased in cities, towns, and areas with greater levels of education due to growing consumer awareness of health issues such as obesity, diabetes, calcium deficiency, constipation, gastrointestinal problems, etc. The food processing businesses have taken advantage of this situation by raising the cost of their branded millet products, which are mostly offered for sale through organized retail. Consequently, action should be taken to lower the cost of millet and items made from it.

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