

Processing and Value Addition of Millets

Developed under Centre of Excellence on Millet



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PREFACE

Millets often called “Nutri-cereals,” “Shree Anna,” or “Smart Foods” being it as an agriculture-smart, climate-smart, and nutrition-smart, are among the oldest cultivated grains. These small-seeded cereals are predominantly grown in arid and semi-arid regions of Asia and Africa. Celebrated for its resilience to drought, minimal water needs, and superior nutritional profile, millets have re-emerged as key crops for ensuring global food and nutritional security. The United Nations' declaration of 2023 as the International Year of Millets (IYoM), following India's proposal, further strengthened global efforts to promote their production, processing, and consumption.

Nutritionally, millets are rich in protein, dietary fiber, essential amino acids, vitamins (especially B-complex), and minerals. Its gluten-free nature and low glycemic index make it suitable for diabetic and gluten-intolerant individuals. Additionally, its antioxidant and phytochemical content contributes to disease prevention and wellness, making millets vital for combating malnutrition and lifestyle diseases. India, the world's largest millet producer, contributes about 38% of global output, with major production from Rajasthan, Karnataka, Maharashtra, Uttar Pradesh, Haryana, and Gujarat.

Despite its potential, millet processing remains challenging due to small grain size and tight binding of hull to kernel that complicate its dehulling and polishing operations. Addressing these challenges, research institutions such as the Central Institute of Agricultural Engineering (CIAE), Indian Institute of Millets Research (IIMR), CFTRI, Mysuru have developed different millet processing machineries and products. Commercial manufacturers like Perfura Technologies, AVM Engineering, Nabhitha Engineering Pvt. Ltd., and ShriViratra Engineering have also made technologies accessible to small and medium enterprises, fostering millet-based entrepreneurship.

Traditional processing practices like hand pounding, soaking, fermentation, and roasting continue to enrich rural livelihoods but are being replaced by modern mechanized systems that improve quality and scalability. This has led to the development of a diverse range of value-added products such as millet flours, noodles, snacks, beverages, and breakfast cereals, meeting modern consumer preferences.

Government initiatives including NFSM–Nutri Cereals, PLISMBP, RKVY, and the establishment of IIMR as the Global Centre of Excellence for Millets have played a pivotal role in accelerating millet commercialization. The IYoM 2023 celebrations and the launch of MAHARISHI (Millets and Other Ancient Grains International Research Initiative) further emphasized collaborative research and innovation in millet technology. Government of India is also promoting the millet cultivation through MSP of millets. MSP has been started for major millets (2500-3300 Rs./qtl.). However it is high time to offer MSP for minor millets as well for its wide cultivation and promotion.



Processing and Value Addition of Millets

With more than 130 start-ups such as Slurrp Farm, Millet Amma, and Troo Good leading product innovation, millets are transitioning from traditional subsistence crops to modern, health-oriented foods. The sustainable growth of the millet sector depends on integrating agricultural innovation, advanced processing, and value chain development through collaboration among farmers, researchers, industries, and policymakers.

This comprehensive report presents engineering interventions, processing technologies, value addition, and emerging opportunities in the millet processing sector aimed at supporting India's vision of making millets the foundation of climate-resilient and nutrition-secure food systems.

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Processing and Value Addition of Millets

1. Introduction

Millet refers to a group of annual grasses, small sized seeds of which are highly nutritious. Millets have been cultivated for thousands of years, particularly in regions with semi-arid climates. Many archeological excavations studies have proven the cultivation of millets in prehistoric period. Different types of millets (Sorghum, Pearl millet, Finger millet, Foxtail millet, Proso millet, Little millet, Kodo millet, Barnyard millet etc.) are grown primarily in Asian, African countries and to some extent in other countries. The major producers of millet are India, Niger, China, Nigeria, Mali, Sudan, Ethiopia, Senegal and Burkina Faso. India is the world's largest producer of millets with total production (15.4 Mt), area (12.2 Mha) and productivity of 1.2 t/ha contributing to 38.4% of world's production (FAO, 2023; APEDA, 2024). Thus India dominates global millet production, contributing over a one third of the total output. Many other countries also produced millets to some extent. Niger is the second-largest producer, with significant contributions from other African nations like Nigeria, Mali, and Sudan. China also plays a crucial role in millet cultivation, though at a smaller scale compared to India and African countries. The remaining countries, including Ethiopia, Burkina Faso, Chad, and Senegal, collectively account for a smaller portion of global production.

In India, the major millets producing states are Rajasthan, Karnataka, Maharashtra, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Tamil Nadu, Andhra Pradesh and Uttarakhand. Currently, together these ten states account for around 98 per cent in Millet's production in India during the period 2023-24 (www.apeda.gov.in). Rajasthan contributes highest per cent (31.3%) of the total millet production in India.

Millets are small-seeded annual cereal crops that are cultivated for food and fodder in tropical areas with typically lower rainfall. Due to high nutritional content, the Indian government designated millets in the category of "NutriCereals" for commercial production, processing and consumption (Notification number F.No. 4-4/2017-NFSM (E) issued April 10, 2018). Three major millets i.e. pearl millet (*Pennisetum glaucum* L.), sorghum (*Sorghum bicolor* L. Moench), and finger millet (*Eleusine coracana* L.); five minor millets—foxtail millet (*Setaria italica* L.), proso millet (*Panicum miliaceum* L.), kodo millet (*Paspalum scrobiculatum* L.), barnyard millet (*Echinochloa frumentacea* L.), and little millet (*Panicum sumatrense* L.) and two pseudo millets, i.e. buckwheat (*Fagopyrum esculentum* Moench) and *Amaranthus* species have been categorized as per the notifications as mentioned elsewhere (Yadav et al., 2024).

Millets contain significant amounts of calcium, magnesium, potassium, and iron, as well as B vitamins like niacin, thiamine, and riboflavin (Dixit and Ravichandran, 2023). Millets are also good source of plant-based protein and it contains many essential amino acids,



including lysine and methionine, which are sometimes lacking in other grains. Thus, millet offers several health benefits due to its rich nutritional profile. Benefits of millet consumption also linked to heart health. Incorporating millet into your diet can be a great way to enhance nutrition and support various aspects of health.

Millets are rich in physiologically active substances and offer large health benefits. They contain essential vitamins such as niacin (B3), thiamine, riboflavin, and folic acid (Izadi et al., 2012). The majority of millet polysaccharides comprise amylopectin and amylose (70–80%). Additionally, millets are abundant in polyphenols (0.2– 0.5%), tannins, and phytates, which contribute significantly to their antioxidant activity and play a key role in regulating the ageing process (Tripathy et al., 2023). The unique nutritional composition of millet grains sets them apart from other basic grains like corn, wheat, and rice.

Millet has a lower glycemic index and higher quantities of dietary fiber and protein than rice, which reduces the risk of blood sugar increases. Millet has excellent antioxidant qualities that help protect against long-term illnesses. The benefit of millet over wheat is that grain is gluten-free, making it a good option for anyone with celiac disease or gluten intolerance. Compared to corn, millet has higher levels of protein, dietary fiber, and essential amino acids, all of which are critical for the tissue growth and repair of human body.

Millets are increasingly recognized for nutritional and environmental benefits. It provides essential minerals such as calcium, iron, potassium, magnesium, and zinc, along with vitamins, amino acids, and fatty acids (Dayakar Rao et al., 2017). These crops exhibit remarkable resilience to environmental stress, including water scarcity and high temperatures, due to their unique physiological, molecular, and biochemical traits (de Vries et al., 2020; Yadav et al., 2012).

This is important to note in the present time when there is strong need of food security in view of risk of climate change, millet are the crops which has potential to accept this challenge. Considering the importance of millets, India promoted millets in recent years, leading to important developments in the global food landscape. In 2018, the Government of India declared millets as "Nutri cereals". This highlights the nutritional benefits of millets, which are rich in fiber, protein, vitamins, and minerals. Further, to create domestic and global demand and to provide nutritional food to the people, Government of India had proposed to the United Nations for declaring 2023 as International Year of Millets (IYoM-2023). The proposal of India was supported by 72 countries and United Nation's General Assembly (UNGA) declared 2023 as International Year of Millets on 5th March, 2021. The goals of International Year of Millets include raising awareness, encouraging production, processing and consumption and supporting farmers.

As millets are highly nutritious, it is obvious that consumers will show keen interest to



towards this miracle grains. The outer hull of millets contains some anti-nutritional factors which need to be removed for better utilization and consumption of millets. Major difficulty facing in processing of millets is its small size. By following appropriate processing technologies, millets can be utilized efficiently in various traditional and convenience health foods. Processed millet grains can be then converted into several value-added products. Various processed products from millets are popped millet, puffed millet, extruded products, fermented and malted products, weaning foods etc. With the growing popularity of millets development of new machines for processing of different millets is challenging tasks for engineers.

2. History of millet cultivation and use

Millet cultivation has a long and diverse history that spans thousands of years and various regions across the globe. The history and origin of millets trace back to ancient times with evidence of its cultivation found in ancient civilizations such as in China, India, Africa, and the Middle East. Millets are believed to have originated in Africa and Asia where it was domesticated around 10,000 years ago, particularly in regions with semi-arid climates where other cereal crops like wheat and rice did not thrive. The earliest evidence of millet cultivation dates back to around 7000-5000 Before Current Era (BCE) in China. From its origins, millets gradually spread to other parts of the world through trade, migration, and cultural exchange. Millets became an essential staple food in many ancient civilizations due to its ability to grow in diverse environmental conditions and its resilience to drought and other adverse weather conditions. Millets played a crucial role in the diets of ancient civilizations such as the Harappan civilization in the Indus Valley, ancient China, and various African societies (Pokharia et al., 2014).

Millets have a rich history of cultivation dating back thousands of years across various regions. Evidence suggests that species like pearl millet were domesticated in Africa around 3000–2000 BCE, becoming a staple in many African diets and continuing to be widely cultivated in regions like the Sahel. In East Asia, foxtail millet and proso millet were domesticated between 2000–1000 BCE. In India, finger millet has been cultivated for over 4,000 years, remaining a crucial food source in many parts of the country. Archaeological excavations have provided evidence of millet cultivation and use in various regions, underscoring its long-standing significance in human diets (Amadou et al., 2010, Hunt et al., 2008, Pokharia et al., 2013).

Some researchers presented studies about occurrence of millets in sites of archaeological importance. For example; study held by Fuller (2006) shows that foxtail millet (*Setaria italica*) and small millets like browntop millet were among the crops grown by Harappan communities, alongside wheat and barley. In another study, Nesbitt et al (1988) reported records of millet from the Ancient near East and Greece. By the Middle Iron Age (around the 7th to 6th centuries B.C.), broomcorn millet had become a



common crop across much of the Near East, though there is still no archaeobotanical evidence from the Levant.

Wang et al. (2019) presented a study on new archaeobotanical evidence for agricultural production in the middle Yellow River region during the Yangshao culture period (China). Excavations in sites like the 'Yangshao culture' (around 5000-3000 BCE) revealed leftovers of foxtail millet (*Setaria italica*). Archaeobotanical studies at sites such as 'Chandraketugarh' and 'Paharpur' have unearthed grains of finger millet (*Eleusine coracana*) and other millets, dating back to around 2000 BCE (Pokharia et al, 2014). Excavations in the 'Sahel region', particularly in sites like 'Kintampo', have yielded evidence of pearl millet (*Pennisetum glaucum*) dating back to around 2500 BCE. Archaeological sites in regions like the 'Danube River basin' have shown evidence of proso millet (*Panicum miliaceum*) dating back to the Bronze Age. In Middle East, evidence from sites in the 'Levant' suggests that millets were used in ancient diets, with findings dating back to the Neolithic period. These studies collectively illustrate the widespread historical significance of millets across different cultures and regions, underscoring their role in ancient diets and agriculture (Fuller et al., 2021).

The adoption of modern agricultural practices and high-yielding cereal crops like wheat and rice led to a decline in millet cultivation during the 20th century. However, recent years have seen a resurgence of interest in millets due to its nutritional advantages, climate resilience, and suitability for sustainable agriculture. Millet grains are rich in dietary fiber, essential minerals, and vitamins, offering several health benefits comparable to other major grains (Saleh et al., 2013).

3. Types of millets commonly grown in India

There are several types of millets cultivated and consumed around the world, each with its unique characteristics and culinary uses.

India is home to a variety of millets, each with its unique characteristics and uses. The most common types millets are Sorghum (*Sorghum bicolor*), Pearl millet (*Pennisetum glaucum*), Finger millet (*Eleusine coracana*), Foxtail millet (*Setaria italica*), Proso millet (*Panicum miliaceum*), Little millet (*Panicum sumatrense*), Kodo millet (*Paspalum scrobiculatum*), Barnyard millet (*Echinochloa esculenta*) etc.

Millets are generally categorized into two types. Major millet and minor millets. Sorghum, Pearl millet and Finger millet are known as major millets whereas other millets come under minor millets. Globally, sorghum and pearl millet are among the most widely produced and consumed, especially in Africa and parts of Asia. Finger millet also has significant production in certain regions, while the other millets are often region-specific in their cultivation and use.

Table 1: Different millets grown in India and its nutritional importance

S N	Name	Photo	Local names	Information	Use
1.	Sorghum (<i>Sorghum bicolor</i>)		Jowar, cholam	Primarily composed of carbohydrates, mainly in the form of starch. It is rich in dietary fiber, which aids in digestion. Sorghum contains various vitamins, including B vitamins such as niacin (vitamin B3), thiamine (vitamin B1), and riboflavin (vitamin B2). These vitamins play essential roles in metabolism and overall health. It is also a good source of minerals such as iron, magnesium, phosphorus, and potassium. These minerals are important for maintaining healthy bones, muscles, and overall bodily functions. Gluten free.	Widely consumed and used for food (in the form of roti (Bhakri), fodder, and brewing. It is most popular in the daily diet in Maharashtra.
2.	Pearl Millet (<i>Pennisetum glaucum</i>)		Bajra	Pearl millet is one of the oldest cultivated millets and is widely grown in the Indian subcontinent. It has high drought tolerance and can grow well in arid and semi-arid regions. Pearl millet grains are smaller than sorghum but larger compared to other millet varieties and are commonly used to make flatbreads, porridge, and fermented beverages.	Flatbread, Baking, Soup, Porridge, snack products. It is also consumed in daily diet as a roti/bhakri in Maharashtra.
3.	Finger Millet (<i>Eleusine coracana</i>)		Ragi, Nachni, Nagli, Mandua	Finger millet, also called ragi, is native to Africa but is also cultivated in India and other parts of Asia. It is rich in calcium, iron, and dietary fiber, making it a nutritious grain. It is commonly used to make porridge, flatbreads, and various traditional dishes in many states of the country.	Weaning food, brewing, Breakfast cereals, Snack food, Baked goods, Porridge
4.	Foxtail Millet (<i>Setaria italica</i>)		Kangani	Foxtail millet is native to China but is also grown in other parts of Asia. It is known for its high protein content. Foxtail millet grains are small and round and can be cooked similarly to rice or used in porridge, soups, and baked goods.	High fiber content, regulate blood sugar level, Used in various traditional foods

S N	Name	Photo	Local names	Information	Use
5.	Proso Millet (<i>Panicum miliaceum</i>)		Common millet, broomcorn millet	Proso millet has a short growing season and is tolerant to drought and other adverse conditions. Proso millet grains are small and round and are commonly used in porridge.	Traditional dishes, Porridges, Salads and Side dishes, Baked foods, Soups and Stews etc.
6.	Little Millet (<i>Panicum sumatrense</i>)		Kutki, Samai, samalu, haliv	Little millet is native to India and is also grown in other parts of Asia and Africa. It is a rich source of B vitamins and minerals such as iron and magnesium. Little millet grains are small and can be cooked similar to rice or used in porridge, upma, and other traditional dishes.	Popped and puffed products, snack food, porridge
7.	Kodo Millet (<i>Paspalum scrobiculatum</i>)		Kodra	Kodo millet is native to India and is also cultivated in other parts of Asia and Africa. It is known for its high nutritional value and is gluten-free. Kodo millet grains are small and round and are commonly used in porridge, dosa, and other dishes.	Traditional dishes, Flatbread, Porridge, popped millets, cake etc.
8	Barnyard millet (<i>Echinochloa esculenta</i>)		Sanwa, Jhangora, Bhagar, Oodalu	Barnyard millet is rich source of protein, carbohydrates, fiber, and, most notably, micronutrients like iron (Fe) and zinc (Zn). The high ratio of carbohydrate to crude fiber ensures the slower release of sugars in the blood. The resistant starch in barnyard millet has shown to lower blood glucose, serum cholesterol, and triglycerides in rats (Kumari and Thayumanavan, 1998)	Culinary use, Baked good, Breakfast dishes, Used in fasting foods



4. Health benefits of millets

Though benefits of millets are covered elsewhere in the document, this part is specially focused in relation between millet consumption and health and wellbeing of human. Millets are gaining global recognition due to its rich nutrient profile, which supports human health and wellbeing.

Millet grains are beneficial in the human diet because of its composition, which includes significant amounts of dietary fiber, proteins, essential amino acids, vitamins, minerals, essential fatty acids, antioxidants, and other phytochemicals. Millet has been associated with better human health due to its hypoglycemic, anti-proliferative, anti-atherosclerogenic, antioxidant, anti-hypertensive, anti-inflammatory, and antibacterial properties (Jacob et al., 2024). Benefits of millets in the diet include improved nutrition, particularly in the form of vitamins and minerals, which maintains human health and prevent numerous diseases. Most significantly, via scavenging, the presence of bioactive chemicals decreases and slows the progression of lifestyle disorders and illnesses. Millets can be used to alleviate nutrient deficiencies, such as those in iron and zinc.

Millet consumption aids in promoting gut health and preventing constipation as it is rich in dietary fiber. The fiber content helps in managing blood sugar levels, making millets suitable for individuals with diabetes also. The study conducted by Devi et al. (2014) shows that millet dietary fiber reduces glycemic reactions through changed lipid metabolism and altered bile acid metabolism, resulting in improved glucose level. Additionally, its low glycemic index (GI) aids in sustained energy release, reducing the risk of blood sugar spikes. A study was conducted by Hegde and Chandra (2005) in rat and mice which shows that feeding diabetic rats with kodo and finger millet-based diets reduced blood glucose levels. In another study, foxtail millet prolamin supplementation improved glucose intolerance and insulin resistance in diabetic mice and also improved liver function (Zhang et al., 2021).

Millets are also abundant in essential nutrients like magnesium, phosphorus, and potassium, which are critical for cardiovascular health. Magnesium improves heart function and reduces the risk of hypertension. Studies by Narayanan et al. (2016) and Kumar and Kotwal (2023) shows that millets mitigate atherosclerotic cardiovascular disease risk by lowering insulin resistance, better glycemic control, lowering non-high-density lipoprotein (HDL) cholesterol and lowering blood pressure. Among the millets, finger millet, in particular, is an excellent source of calcium, promoting bone health and reducing the risk of osteoporosis. The antioxidants in millets, such as phenolic compounds, help to combat oxidative stress, which is linked to chronic diseases like cancer and aging. These bioactive compounds also boost the immune system, enhancing the ability to fight infections. For persons who aims to manage weight, millets serve as



an excellent choice due to their high satiety index. The satiety index is a measurement of how full and satisfied a food makes you feel after eating it. Protein content ranges from 6 to 13% with proso millet and foxtail millet being the richest sources. Millet proteins have a relatively high content of essential amino acids such as lysine, methionine, and cysteine, which are limited in other cereal grains like rice and wheat (Gowda et al., 2022).

Millets are gluten-free, making it ideal for those with celiac disease or gluten sensitivity. Mudau et al. (2022) carried out research on fermented gluten free finger millet biscuits and observed that spontaneous fermentation of finger millet grains has shown improved nutritional and functional properties of its flour. Authors determined the effect of spontaneous fermentation on the nutritional quality, microstructural, and sensory characteristics of gluten-free biscuits prepared from finger millet flours. Results showed that spontaneous fermentation decreased ash, crude fat and total phenolic and flavonoids contents whereas protein content, carbohydrates content, antioxidant activity (DPPH and FRAP), and mineral content of biscuits reported to be increased.

A detailed review on millets health benefits was presented by Sabuz et al. (2023). Millets help through multiple biological activities, including antioxidant, anti-hyperglycemic, anti-cholesterol, anti-hypertensive and regulation of gut microbiota composition. As these bioactive compounds, nutrients, and functions can be affected by processing techniques such as decortication, soaking, malting, milling, fermentation, etc. Presence of B vitamins supports brain health, energy metabolism, and overall physiological functions. The health benefits of millets emphasize its potential as a key component of modern diets. Its inclusion in food systems can bridge the gap between nutrition and wellbeing, fostering healthier lifestyles.

Proteins, dietary fiber, vitamins (including the B-complex), and minerals (iron, calcium, magnesium, phosphorus, and zinc) are all abundant in millets. It is also gluten-free, so anyone with celiac disease or gluten intolerance can incorporate it in the diet. Antioxidants including phenolic compounds, flavonoids, and tannins, which are abundant in these small-seeded grains, help fight oxidative stress and lower the risk of chronic illnesses like diabetes, cancer, and cardiovascular disease. Millets aid in digestion and support gut health because of their high dietary fiber content. Additionally, the fiber content aids in controlling cholesterol and blood sugar levels. Due to their low glycemic index (GI), millets digest and absorb slowly, causing blood sugar levels to rise gradually.

Millets are rich in essential nutrients such as proteins, dietary fiber, vitamins (B-complex vitamins), and minerals (iron, calcium, magnesium, phosphorus, zinc). It is also gluten-free, making it suitable for individuals with gluten intolerance or celiac disease. These small seeded grains are rich in antioxidants such as phenolic compounds, flavonoids, and



tannins, which help in combating oxidative stress and reducing the risk of chronic diseases like cancer, cardiovascular diseases, and diabetes. With good amount of dietary fiber, millets assist in digestion and promote gut health. The fiber content also helps in managing blood sugar levels and cholesterol levels. Millets have also low glycemic index (GI), which means it is digested and absorbed slowly, leading to gradual rises in blood sugar levels. This property makes them beneficial for individuals with diabetes or those aiming to manage their weight.

5. Initiatives of Government of India to boost millet cultivation, processing and value addition

- National Year for Millets 2018 -notified as Nutri cereals
- Launched "Sub Mission on Millets" in 2018 under National Food Security Mission.
- State Missions launched in Karnataka, Odisha, Tamil Nadu and Chhattisgarh.
- Millets included under POSHAN MISSION Abhiyan.
- Over 500 Start-ups in millet value chain
- Indian Institute on Millet Research (IIMR), under RKVY- AFTAAR, has incubated 250 start-ups
- INR 6.2 crores disbursed to over 66 startups with additional of 20-25 startups approved for further funding
- Startups spread across the entire value chain of millets- Primary Processing, RTE, RTC like Breakfast Cereals, Millet Coffee, Pizza Flours, Porridge, Flakes, Puff etc.

To create awareness, boost the cultivation and increase the national and international demand for millets, Government of India had proposed to the United Nations for declaring year 2023 as International Year of Millets (IYM). 72 countries have supported this proposal and subsequently United Nations General Assembly (UNGA) declared 2023 as International Year of Millets during March, 2021.

Objectives of IYM

- ✓ Elevate awareness of the contribution of millets to food security and nutrition.
- ✓ Inspire stakeholders on improving sustainable production and quality of millets.
- ✓ Draw focus on enhanced investment in research and development and extension services to achieve the other two aims.

To accomplish the goals of IYM 2023 and take Indian millets worldwide, the Indian government has adopted a proactive multi-stakeholder engagement strategy, involving different central government Ministries/Departments, States/UTs, farmers, start-ups, exporters, retail establishments, hotels, Indian Embassies, etc. Enhancing the



production, productivity, consumption, export, fortification of the value chain, branding, raising awareness of health advantages, and other areas were the main goals of IYM-2023.

In order to promote Indian millets, recipes, and value-added products internationally, the Indian government has arranged a number of events. Millets were promoted during the G20 presidency in India, the ASEAN India Millet Festival in Indonesia and Delhi, the Millet Culinary Carnival, International Trade Events, the Chef's Conference, the Farmers Producer Organizations (FPO) exhibition, road shows, kisan melas, and chef training for paramilitary forces, among other events. The Global Millets (Shree Anna) Conference, which was held from March 18–19, 2023, at IARI, Pusa Campus, New Delhi, was a major event planned in conjunction with the International Year of Millets.

The Indian Institute of Millets Research (IIMR), Hyderabad, has been designated as the Global Center of Excellence for exchanging best practices, research, and innovations at the national and international levels in an effort to establish India as a global center for "Shree Anna". In addition, IIMR in Hyderabad offers training to farmers, women farmers, housewives, students, and young business owners on how to create millet food products with added value, daily recipes, etc., and helps them start their own businesses. Additionally, the institute has created value-added technologies such as "Ready to Eat" and "Ready to Cook" millet food labels, conducted awareness campaigns, agribusiness incubators, technology business incubators, and more. IIMR, Hyderabad has been a lead centre while working in collaborations of around 14 different institutions across the country for development and promotion of technologies for millets.

On September 27, 2023, the new Bajra Regional Research Center has been established in Gudamalani, near to Barmer, Rajasthan. During the G20 Presidency, a new program called the "Millets and Other Ancient Grains International Research Initiative (MAHARISHI)" was adopted with the goal of enhancing scientific collaboration and raising public awareness of millets worldwide.

The Production Linked Incentive Scheme for Food Processing Industry for Millet-based Products (PLISMBP) has been approved by the Ministry of Food Processing Industries (MoFPI) to be implemented from 2022–2023 to 2026–2027 with an expenditure of Rs. 800 crores. The Ministry of Women and Child Development's Poshan Abhiyan also covers millets. Additionally, in order to expand the procurement of millets under the Mid-Day Meal, Integrated Child Development Services (ICDS), and Targeted Public Distribution System (TPDS), the Ministry of Food and Public Distribution has updated its standards.

To accelerate the growth, marketing, and promotion of India's millets exports, an Export Promotion Forum devoted to the foreign market has been also established. The Food Safety and Standards Authority of India (FSSAI) is raising awareness to encourage the use



of millets as part of a varied and healthful diet through the Eat Right campaign. All government offices have been urged to serve Shree Anna-based food items in departmental canteens and incorporate Shree Anna snacks into departmental trainings and meetings in order to promote the consumption of Shree Anna among government personnel.

To increase the production and productivity of millets, under the National Food Security Mission (NFSM), the Department of Agriculture and Farmers Welfare (DA&FW) is implementing a Sub-Mission on Nutri-Cereals (Millets) in all districts of 28 States and 2 Union Territories, namely Jammu & Kashmir and Ladakh, with the goal of increasing the production and productivity of millets. The NFSM program covers nutri-cereals (millets) like sorghum (Jowar), pearl millet (Bajra), finger millet (Ragi/Mandua), minor millets like foxtail millet (Kangani/Kakun), proso millet (Cheena), kodo millet (Kodo), barnyard millet (Sawa/Sanwa/Jhangora), little millet (Kutki), and two pseudo-millets: buckwheat (Kuttu) and amaranthus (Chaulai).

Besides the above efforts of Government of India, incentives for crop production and protection technologies, cropping system-based demonstrations, production and distribution of certified seeds of recently released varieties or hybrids, Integrated Nutrient and Pest Management techniques, improved farm implements, tools, and resource conservation machinery, water-saving devices, capacity building of farmers through trainings during cropping season, event and workshop organization, seed minikit distribution, publicity through print and electronic media, etc. are also offered to farmers under NFSM-Nutri Cereals through the States and UTs.

Additionally, under the Rashtriya Krishi Vikas Yojana (RKVY), the Indian government gives the states flexibility to address their own needs and objectives. Millets may be promoted by the states under RKVY. To further promote millets, several Indian states have started millet missions, including Assam, Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Odisha and Rajasthan.

Minimum support price (MSP) for millets

For promotion of cultivation and increasing the production of millets, Government of India has stated to provide Minimum Support Price (MSP) of millets. Millets such as Pearl Millet (bajra), Sorghum (jowar) and Finger Millet (ragi) have been part of the MSP regime and MSP for these crops has been rising in recent years (2023-24). The MSP for sorghum and pearl millet increased by about 25% and that for finger millet by about 22% in the year 2023-24.

However, minor millets (for example, little millet, kodo millet, foxtail millet, barnyard millet) have not yet been uniformly included under the central MSP procurement regime



(although some states like Haryana have taken initiatives).

In recent years the government has taken further steps to boost millet cultivation and procurement. In 2024-25 the MSPs for these major millets were raised notably (favouring finger millet most, with an increase of about 11.5%). Also, many states are now actively procuring millets at MSP under state-level initiatives. Yet the actual procurement of millets by government agencies remains small compared to rice/wheat, meaning that even with MSPs in place, many millet farmers do not actually realise the full benefit of guaranteed procurement.

In the broader policy context, inclusion of all millets (major and minor) under the MSP regime, and strengthening of value chains, storage, processing and market linkages, is seen as key for promoting millet cultivation which has benefits of drought-resilience, suitability for marginal lands, nutritional richness, and supporting tribal and small holder farmers. In short, MSP for millets is a critical lever in the government's strategy for promoting millets both as food crops and as crops of livelihood value.

MSPs of Major Millets (India), (Values in per quintal; for Kharif Marketing Season 2024-25).

Table 2 : Minimum support price (MSP) of Millets.

Millet variety	MSP for 2024-25
Sorghum (Jowar) – Hybrid	₹ 3,371
Sorghum (Jowar) – Maldandi	₹ 3,421
Pearl Millet (Bajra)	₹ 2,625
Finger Millet (Ragi)	₹ 4,290

Source: PIB, 2024

6. Barriers in adoption of millets

The major challenge in millet processing is its tiny size and tight adherence of hull to kernel especially in minor millets. In addition to this, millet processing can be laborious if done by manual labours for several reasons. In millet growing regions, there may be limited access to processing facilities or equipment, forcing farmers to rely on manual labour for processing. Millet de-husking if did manually requires physical effort and time, especially when done on a small scale. Small size and hardness of some millets is another hurdle in millet processing. Traditional Methods also rely heavily on manual labour. These methods may have been passed down for generations and are ingrained in local culture and practices.

Variability in millet types is one another issue and different millets may require slightly different processing techniques. This variability adds complexity to the processing task specially when there is task to develop specific machine for millet processing. In such



situation, different tools or methods may need to explore to develop such machines.

Many researchers focussed on these issues earlier. According to Srivastava & Reddy (2023), processing of millets is a challenging task due to its small seed size and thick seed coat. Poor shelf-life of processed grain and flour is another challenge after size reduction operation (AIM, 2023; Sruthi & Rao, 2021). Presence of anti-nutrients such as tannins, phytate, and phenols (Budhwar et al., 2020); and effect of processing techniques on nutritional quality (Gowda et al., 2022) should also be studied in this context. On the side of machine development, the efficiency of dehulling machinery is noted as 70%–80% only, the remaining being the un-hulled and broken grains (Rao et al., 2021), which is additional challenge in separating un-hulled grains and dehulled grains. Single dehulling machine is not suitable for all the millets, due to variations in size, shape of millets (APEDA, 2022).

Millets' small seed size and thick seed coat make processing them difficult (B. Srivastava & Reddy, 2023); its short shelf life (AIM, 2023; Sruthi & Rao, 2021); the presence of antinutrients like phenols, phytate, and tannins (Budhwar et al., 2020); affects the of processing methods and nutritional quality of millets (Gowda et al., 2022). Separating unhulled grains from dehulled grains is more difficult (B. D. Rao et al., 2021). Due to variations in grain size, shape, and husk content, no single dehulling unit is appropriate for all millets (APEDA, 2022)

Millets, despite its nutritional benefits, face several barriers to widespread consumer adoption. These include sensory and processing challenges. Millets often have a distinctive flavor that may not appeal to all consumers. Whole millet flours, in particular, can impart a coarse texture and astringency due to the presence of tannins in the seed coat. Besides this, the small size and hard outer seed coat of millets make processing more challenging. Dehulling and polishing can reduce nutritional content, and the resulting refined flours may not offer the full health benefits of the whole grain.

One of the main reasons which restrict easy availability of millet in market is difficulty in millet processing. Millet processing is the set of operations performed after harvesting of millet.

When harvested millets are brought to process, some millets show ease in processing while some appeared difficult for processing. Processors main intention is to remove outer hard coat present on some millets. The ease or difficulty of processing millets can depend on several factors, such as grain size, husk adherence, and structural characteristics. Sorghum is medium to large in size and has a simpler structure compared to smaller millets. It is easy to process due to a relatively smooth outer layer. Pearl millet is also larger compared to small millets, which also facilitates mechanical pearling. Finger millet, little millet and kodo millets are however harder to process because of



tight adherence of hull. Finger millet and little millet grains are very small and have a tightly bound seed coat that adheres strongly to the endosperm, making dehulling difficult. Kodo millet also has a hard, tightly attached husk that complicates dehulling and processing.

Small millets have tough outer husks (hull) which is inedible and need to be removed before consumption. Processing operations involve removing these outer layers to access the edible grain inside. Besides mechanical processing which involves separation of outer seed coat, some other processing methods such as soaking, fermentations make millets easier to digest. Soaking, sprouting also remove anti nutritional compounds like phytic acid, tannins etc and improves the bio availability of minerals present in millet grains. Furthermore, size reduction operations such as grinding helps to impart desired texture which improves the appearance of several value-added products made from millet such as flour, cake, snack food, millet pasta etc. Popping/puffing, flaking are also some processing methods used for millets. All these processing methods are discussed in details later in this document.

7. Traditional practices of millet processing

Traditional practices not only contribute to the processing of millet but also hold cultural significance, reflecting the rich culinary heritage of millet-growing communities around the world. Traditional millet processing practices vary across different regions and cultures, with methods passed down through generations. After harvesting, millet stalks are often beaten or threshed to separate the grains from the stalks. After threshing, the mixture of millet grains and chaff is winnowed to separate the heavier grains from the lighter chaff. Traditionally millet grains are pounded using a mortar and pestle to remove the outer husk or to break them into smaller pieces for cooking. This process is labor-intensive but effective in traditional millet processing. Dehulled millets are then ground into flour using traditional grinding stones or mills. This ground millet flour can be used to make various traditional dishes like bread, porridge, and pancakes. Sometimes boiling and steaming practices are followed for cooking millets until they become soft and edible. Some traditional millet processing practices involve fermentation, where millet grains are soaked in water and allowed to ferment for a period of time. Fermentation not only enhances the flavor but also improves the nutritional profile of millet.

8. Commercial level processing of millets

Millet processing refers to the various steps involved in converting raw millet grains into edible form. Processed millet grains can further be used to develop variety of value-added products. The primary objective of millet processing is to remove inedible components and enhance its nutritional, functional as well as sensory qualities. Millet processing generally includes unit operation such as cleaning, grading, destoning, dehulling and

milling etc. Whole dehulled grains can be introduced to other processing methods such as soaking, sprouting, puffing, drying, roasting, and flaking to make specific snack products.



Flow process chart of millet processing

The flow chart illustrates the sequence of operations involved in millet processing from harvest to product development. Initially, harvested millets are dried in farm yards to reduce moisture content, ensuring safe storage and minimizing post-harvest losses. The primary cleaning step removes impurities such as dust, stones, and chaff. After cleaning, the grains are stored in bulk storage units, gunny bags, or traditional bins to maintain quality before further processing. During commercial processing, the stored millets undergo cleaning and grading to achieve uniformity, followed by de-hulling to remove the outer hull, which is separated as a by-product. The de-hulled grains are then subjected to milling to obtain flour, which serves as a base material for various millet-based value-added products such as bakery items, breakfast cereals, and snacks. Additionally, the by-products from de-hulling and milling are utilized for feed or other industrial applications, ensuring complete resource efficiency.

Though primary objective of millet processing is to make millet edible by removing hard outer inedible husk, it has several other advantages also. Raw millets often contain antinutritional factors such as phytates and tannins, which reduces nutrient bioavailability and may hinder the digestion process. Processing methods like soaking, germination, and roasting reduces such antinutritional components. Properly dried and stored millets can be used for longer time and nutritional quality also maintained as proper drying avoids spoilage due to moisture, pests, and microbial activity. Milling operation enables to develop various value-added products like millet flour, flakes,



puffed millets and ready-to-eat snacks which ultimately increasing consumer appeal and thereby boosts consumption. Fermentation and germination also part of millet processing. These processing methods reported to show increase in bioavailability of micronutrients like iron and calcium. Further, commercial point of view, processed millets and millet products such as bakery products, beverages, breakfast cereals etc. meet consumer demands for convenience, variety, and safety due to which overall market acceptance toward millets can enhanced.

Table 3. Unit operations in millet processing

S.N.	Processing steps	Objective/purpose	Methods
1	Cleaning	Removing impurities such as dirt, stones, plant residues, and other foreign materials	Sieving, winnowing, and using mechanical cleaning machines with airflow and vibrating screens
2	Grading and Sorting	Separating grains by size, shape, or color for uniformity.	Use of sorters/graders
3	Destoning	Removal of stones	Using a destoner working on the principle of stratification and separation
4	Dehulling (Hulling)	Remove the outer hull or husk of some millets grain.	Abrasive dehullers or traditional pounding.
5	Soaking, steaming, drying	This is optional and may use if needed	Soaking in warm water, use of commercial dryers
6	Sprouting	Imparting nutritional changes	Manually
6	Roasting	To impart flavor for making variety of products	Using roasting machine
7	Size reduction/ Milling	Grinding the millet into flour or grits for various food applications. Fine flour for bread and porridges, coarser grits for snacks or other dishes	Roller mills, hammer mills, or stone grinding
8	Popping/ Puffing	Transforming millet into ready-to-eat puffed snacks. Rapid heating to transform millets into ready to eat puffed millets (light, crispy products)	High temperature short time heat treatment.
9	Flaking	Transforming millet into ready-to-eat breakfast cereals.	mechanical pressing for flaking
10	Fermentation	Enhance flavor, digestibility, and nutritional value	Fermenting at specific temperature and pH
11	Extrusion	Produce instant or processed foods like noodles, pasta, or snacks	Use of extrusion technology with high heat and pressure.



The processing techniques employed for millets are highly contingent on the specific type of millet and the desired attributes of the final product. The selection of processing methods is also significantly influenced by socio-economic and geographical factors. For instance, in rural or resource-limited areas, traditional techniques such as hand-pounding or stone-grinding are prevalent due to their cost-effectiveness and accessibility. Conversely, in urban or industrialized regions, advanced mechanical systems and automated processing equipment are utilized to achieve higher efficiency, uniformity, and scalability.

The availability of technology and specialized processing equipment in a given region plays a critical role in determining the processing methods adopted. Regions with limited infrastructure may rely on manual or semi-mechanized processes, leading to variability in product quality and processing efficiency. On the other hand, areas with access to modern machinery can incorporate sophisticated techniques such as dehulling, polishing, and milling, thereby improving yield and product consistency.

The seed coat and endosperm of millets play significant roles during processing of millets. The tight adhesion of the seed coat to the aleurone layer in some millets presents a challenge during processing. Removing the seed coat often requires hydrothermal or mechanical pretreatments. The endosperm constitutes the majority (80-85%) of the millet kernel and is primarily starchy. It is often the focus in processed millet products such as refined flours, as it contributes to the texture and taste.

Table 3 shows various processing methods that can apply for millets to enhance its edibility, nutritional value, shelf life, and versatility. However, the type of millet may hamper the selection of particular processing method and is largely dependent on type of end product one wants to develop. All the processing methods explained in Table 2 can be broadly categorized into primary, secondary, and tertiary processing (value-added processing techniques).

8.1. Primary Processing

These are basic processes applied to millets to make it suitable for direct consumption or further processing. Primary processing comprises drying, cleaning, grading, destoning, dehulling (for Foxtail Millet, Little Millet, Barnyard Millet and Kodo Millet).

8.2. Secondary Processing

These methods transform millets into forms ready for cooking or further industrial applications. Secondary processing comprises milling, soaking and fermentation, puffing/popping, roasting (dry heating to enhance flavor) and parching (similar to roasting but faster heat application with higher heat intensity to impart flavors), flaking, germination (for making malt),



8.3 Tertiary processing (Value-added processing)

Tertiary processing of millets involves creating ready-to-eat or convenience products by combining primary and secondary processing methods. These include extruded products (noodles, breakfast cereals), baked products (breads, cookies, cakes, muffins), snack foods (puffed millets, flakes, chips), ready to cook products (instant noodles, vermicelli, instant upma mix, beverages (health drinks and mixes), fermented products (idli and dosa batter, probiotic drinks), desserts (halwa and payasam mixes).

All these processed and value-added products offer high nutritional value, gluten-free options, and functional benefits to consumers.

9. Unit operations and machineries in millet processing

Millet processing refers to the series of steps involved in transforming harvested millet grains into consumable products. This process includes several stages or unit operations such as cleaning, grading, dehulling, soaking, drying, roasting, grinding, and packaging. The aim is to prepare millets for consumption or further processing into various food products.

On a broader view, millet processing needs cleaning machines (Vibratory cleaner, aspirator, gravity separator), destoner, dehulling machines (Dehuller/Dehusker, impact huller), Polishing Machines, roasters, Stone mill/hammer mill/roller mill. These machines can vary in size, capacity, and complexity depending on the scale of millet processing operations, from small-scale artisanal processing units to large industrial facilities. Common unit operations used in millet processing after threshing millet grains are as follows.

9.1 Cleaning, destoning and grading: Cleaning operation involves removing foreign materials such as dirt, chaff, and other impurities from the millet grains. Cleaning ensures the quality and safety of the final product. Removal of stones is also one of the important operations in millet processing. Grading of millets into specific grades enables the further processing of millets easy.

9.2 Dehulling: Millet grains have tough outer husks or hulls that need to be removed to access the edible seed inside. Dehulling can be done using mechanical dehullers or traditional methods such as pounding or grinding.

9.3 Polishing: Removing outer bran layer is sometimes required to whiten the millet. After removing the husk, the outer layer is fully removed and this operation is known as polishing.

9.4 Milling/Grinding: Millet grains can be ground into flour or meal using milling or grinding equipment. This process breaks down the grains into smaller particles, making it easier to digest and cook.



9.5 Sifting: Sifting involves passing the milled or ground millet through sieves of varying mesh sizes to separate out different particle sizes. This helps to achieve the desired texture and consistency in the final product. Flour sifters are usually used to accomplish this operation.

Besides these operations, sometimes fermentation, roasting, sprouting, drying, popping/puffing is also performed to make specific types of products from millets. For example, in fermentation, the nutritional quality and digestibility of millets is improved. It involves soaking the grains in water and allowing beneficial microorganisms to ferment the sugars and starches, resulting in products like fermented porridges or fermented beverages. Sprouting, drying and roasting operations are performed to make malt like products. Drying alone can also be performed to reduce the moisture content of millet-based products to improve its shelf life and prevent Mold growth. Soaking and roasting at high temperature for short time may be carried out to make popped products. Some common millet processing machineries are listed in Table 4

Table 4: Common machineries/equipments for millet processing

SN	Machine	Use	Principle of operation
1	Cleaner cum grader	To clean and grade millets, specially designed cleaner/ graders are needed. Cleaning is essential to ensure the removal of impurities before processing, preventing damage to downstream equipment	It separates grains from impurities based on differences in terminal velocity (with air flow) and differences in size and shape (with vibrating screens).
2	Destoner	To remove stones and other undesired materials	Destoner separates stones from grains based on the difference in specific gravity, aided by air flow and vibration.
3	Dehuller	Abrasive Dehullers are critical for producing edible millet grains, as the outer husk is inedible and must be removed.	Dehullers works on the principle of applying controlled impact, shear, or abrasion to detach husk from kernels, followed by separation based on density or aerodynamic properties.
4	Double stage centrifugal dehusker	Dehusking millets by machine saves drudgery and processing time. It also promotes the consumption of millets among consumers.	It works on centrifugal impact applied for efficient husk removal, with separation based on weight or aerodynamic properties.
5	Polisher	It helps in efficient marketing of the polished millets.	Polisher operates on abrasion and friction to remove bran or surface layers.



SN	Machine	Use	Principle of operation
6	Roasting	Roasting enhances the flavor and reduces anti-nutritional factors in millet.	Roasting works on the principle of controlled application of heat to induce physical and chemical changes, enhancing flavor, color, and texture of the material.
7	Milling machines	Milling reduces millet grains into flour or semolina, which can be used for various food products. Hammer Mills and roller mills, can be used for this purpose. Commercial size pulveriser is also used to make the flour of millet grains.	Hammer mills: Size reduction by repeated impact and shear forces Roller mills: Size reduction by compressive and shear forces between rollers.
8	Flaking machine	For creating millet flakes as snack products.	Flattening of cleaned, conditioned millet grains by passing them through a pair of smooth or corrugated rollers under pressure.
9	Puffing machine	Puffed millets are highly demanded processed products which can increase the millets consumption among society.	The machine utilizes rapid heating to convert the internal moisture of grains into steam, causing puffing,
12	Fermenter	For fermentation of millets which are further used for preparation of different products.	Millet fermentor works on the principle of controlled microbial fermentation, using optimal temperature, pH, aeration, and agitation to convert millet into fermented products.

Once processed millets are ready or any products are made using millets, the final operation is packaging. Millet-based products are packaged for storage, transportation, and retail sale. Proper packaging helps to protect the products from contamination, moisture, and other environmental factors.

10. Millet processing machines developed by Research and Development Institutes

10.a) Millet processing machinery developed by ICAR-CIAE, Bhopal



Millet Cleaner cum Grader

Millet cleaner cum grader is suitable for cleaning and grading of all types of millets. The cleaning efficiency, capacity and cost of the machine are 90-95 %, 70-80 kg/h and Rs. 40,000/-, respectively.



Millet De-husker

It is a multi-millet de-husker suitable for de-hulling of minor millets like finger millet, foxtail millet etc. The de-hulling efficiency, capacity and cost of the de-huller are 80-85 %, 50-60 kg/h and Rs. 50,000/-, respectively.



Millet De-stoner

Millet de-stoner is applicable for separation of stones and other impurities after cleaning. The separation efficiency of the de-stoner is 90-92 % and its capacity is 70-80 kg/h. The cost of the machine is Rs. 50,000/-



CIAE Millet mill

Designed for minor millets. Capacity: 100-110 kg/h. De-hulling efficiency: 90-95 %. Type: Abrasive type.



Millet Polisher

Millet polisher is useful for removal of bran and germ to improve the appearance and shelf life of millets. The polishing efficiency and degree of polish is 82-85 % and 4-5 %, respectively. Capacity and cost of machine are 50-60 kg/h and Rs. 60,000/-, respectively.



Millet Flour Mill

A flour mill is suitable for production of flour from all types of millets. The capacity of cost of the machine are 50-60 kg/h and Rs. 25000/-, respectively.



Millet Fermenter

Multi-millet fermenter is suitable for fermentation of millets and millet by-products for preparation of different value added products. It has provision to adjust required temperature (25-100°C). Its capacity is 40 kg/batch and cost is Rs. 70,000/-



Millet Popping Machine

The machine is useful for obtaining the popped millets and it is continuous in operation. The popping efficiency, capacity of cost of machine are 75-80 %, 8-10 kg/h and Rs. 80,000/-, respectively.



Millet Roaster

A millet roaster has been developed for production of roasted millets which can also be used for different value added products. The roasting capacity and cost of machine are 50-60 kg/h and Rs. 60,000/-, respectively.



CIAE millet popping machine

Hot air fluidization puffing utilizes rapid heat and moisture vaporization in a fluidized bed to induce internal pressure, causing grains to expand (puff) uniformly. Suitable for sorghum, amaranthus, and finger millet. Capacity: 1.4–2 kg/h. Popping efficiency: 60–70%. Weight: 80 kg.

Millet processing machinery developed by other institutions



Solar Powered Small Millet Dehuller
(Small Millet Foundation Funded by IIMR), Capacity= 30-80 kg/h



CFTRI-Pedal Operated Millet Dehuller,
Capacity= 10-12 kg/h



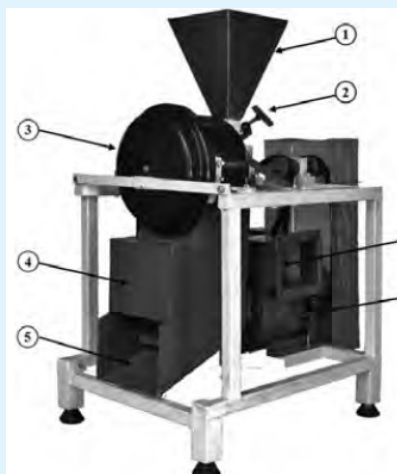
Millet pearler (D. Y. Patil, CAE&T, Kolhapur, MH)

Designed for finger millet threshing cum pearling. Capacity: 36 kg/h, Threshing, pearling and cleaning efficiency, and total grain loss of 99.51, 98.22, 96.51 and 2.35 respectively.



Millet de-huller cum Pearler (GB Pant university, Pantnagar)

Finger millet dehuller cum pearler. Pearling efficiency: range of 70.02 - 83.68%. Capacity: 8 kg/h. Optimised performance condition 0.51 gm/cc dispersed density, 12 minute residence time and 1200 rpm of the roller speed.



Millet pearler (D. Y. Patil, CAE&T, Kolhapur, MH)

Designed for finger millet threshing cum pearling. Capacity: 36 kg/h, Threshing, pearling and cleaning efficiency, and total grain loss of 99.51, 98.22, 96.51 and 2.35 respectively.



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Commercial millet processing machineries
Table 5: Millet processing machinery manufacturers

S N	Equipment Name	Manufacturer name and Address	Specifications	Approx Price (Rs)	Contact details
1	Pre-cleaner	Agrosaw, Krishna Nagar, Ambala, Haryana	1000 kg/h Also available in different capacity	4,00,000/-	8048955136
2	Destoner				
2a.	Destoner cum Grader with aspirator	Perfura technologies, 1/49-13, Kulluku Thottam, Keeranatham, Saravanampatty Post, Coimbatore-641035, Tamil Nadu, India	Continuous type Capacity 100 to 500 kg/h Motor: 2 HP three phase (For 100 kg/h), 5 HP, 1HP 0.5 HP for 500 kh/h model. Suitable for all small millets. With sieve change can used for other grains too	50000 for 100 kg/h, 210000 for 500 kg/h	sales@perfuratech.com 91 98948 50009
2b.	De-stoner cum grader	AVM engineering industries, Salem, Tamil Nadu www.avmengineering.com	Capacity: 100 kg/h, 2 HP three phase, Suitable for all small millets. With sieve change can used for other grains too	80,000	avmengineeringindustries@gmail.com Mr.Rajasekar 9443633131 Mr.Jegadees 7867018582
2c.	Selvin stainless steel millet destoner machine	Sree valsa engineering company, Singanallur, Tamil Nadu	Capacity 250- 3000 kg/h, Motor capacity 5-10 HP	98,000	08048957982
2d.	Destoner machine for millets	Ganga agro foods industries, Sharpur, Gujarat	Capacity: 1500 kg/h Motor: 2 HP Weight: 300 kg Three phase MOC: Mild steel Speed 1440 RPM Height: 5 Feet, Length: 6 Feet, Width: 4.5 Feet	1,27,000	sales.gangaagro@gmail.com 9998220474 7600012109
2e.	Victor de-stoner	Victor Agro Sale, Salem, Tamil Nadu	50 kg/h Power 2 HP single phase Suitable for all small millets. With sieve change can used for other grains too.	42,000	095007 27272
2f.	Destoner	N. N. Engineering products, Coimbatore, Tamil Nadu	Capacity is in kg/h NN250D (1HP), 200-250 kg/h	Depending on different model	9943991031



S N	Equipment Name	Manufacturer name and Address	Specifications	Approx Price (Rs)	Contact details
3. Grader					
3a.	Grader cum aspirator	Perfura technologies, Coimbatore	MN500D 300-500 kg/h (2 HP), MN1000D 700-1000 kg/h (3 HP), MN2000D 1500-2000 kg/h (5 HP), MN3000D 2250-3000 (5 HP) kg/h	100000/-	sales@perfuratech.com 91 98948 50009
3b.	Grader	Victor Agro Sale, Salem, Tamil Nadu	Capacity 50 kg/h Power 2 HP Single Phase Suitable for all small millets. With sieve change can used for other grains too.	30000/-	095007 27272
4. Specific gravity Separator					
4a.	Specific gravity Separator	Agrosaw, Krishna Nagar, Ambala, Haryana	100-1000 kg/h	3,00,000/-	8048955136
5 Single stage millet dehuller					
5a.	Single-chamber centrifugal impact huller	Developed by DHAN and TNAU and currently licensed by AVM, Victor and Perfura, Tamil Nadu	100 kg/h Power 2HP Three phase (Dehulls all small millets except Kodo)	1,00,000/-	DHAN Foundation 1A, Vaidyanathapuram East Kennet Cross Road Madurai - 625016 Tamil Nadu, INDIA ghanfoundation@ghan.org +91-452-2302500 , 2302598
5b.	Single-chamber centrifugal dehuller with grader	AVM Engineering industries, Salem, Tamil Nadu www.avmengineering.com	100 kg/h, Power 2 HP three phase, Dehulls all small millets except kodo millet	Rs. 1,05,000/-	avmengineeringindustries@gmail.com Mr.Rajasekar 9443633131 Mr.Jegadees 7867018582
5b.	Single chamber CF dehuller	Victor Agro Sale, Salem, Tamil Nadu	40-50 kg/h, 2 HP single phase, Dehulls all small millets but more suitable for little, foxtail and proso millet	Rs. 52000/-	095007 27272
5b.	Single stage millet dehuller	Perfura technologies, Coimbatore	100 kg/h	Rs. 15000/-	sales@perfuratech.com 91 98948 50009
5c.	Portable	Developed by Small Millet	200-400 kg/h	75,000/-	DHAN Foundation

S N	Equipment Name	Manufacturer name and Address	Specifications	Approx Price (Rs)	Contact details
	impact huller	Foundation of DHAN and licensed to Kalanjium Thozhilagam Limited, Madurai, Tamil Nadu			1A, Vaidyanathapuram East Kennet Cross Road Madurai - 625016 Tamil Nadu, INDIA dhanfoundation@dhan.org +91-452-2302500 , 2302598
5d.	Millet dehuller	Vishra Agro Sales, No.59-32A,Krishnamacheri Road,Fathima Nagar,Virudhunagar - 626001, Tamil Nadu, India	200-250 kg/h	1,20,000/-	6379084691, 9944528382
5e.	Millet dehuller	Agromech Engineers 28, Annaiappan Street, Nalampalayam Road, Sanganoor, Ganapathy (Po) Coimbatore -641006.	Detailed specifications not available on website	Rs. 100000/-	91 97917 66406
6	Double stage millet dehuller				
6a	Double stage millet dehuller	Perfura technologies, Coimbatore	Model No. MD 3300CD, 3 phase, Semiautomatic, Capacity: 300 kg/h	250000/-	sales@perfuratech.com 91 98948 50009
6b.	Double-chamber centrifugal impact huller	Developed by DHAN and TNAU and currently licensed to AVM, Tamil Nadu	100 kg/h Power 6 HP Three Phase (Designed for Kodo)	2,00,000/-	dhanfoundation@dhan.org +91-452-2302500 , 2302598
	Double-chamber centrifugal impact huller	Developed by DHAN and TNAU and currently licensed to Victor, Tamil Nadu	100 kg/h Power 5 HP Three Phase (Designed for all millets)	1,00,000/-	dhanfoundation@dhan.org +91-452-2302500 , 2302598
7	Polisher				
7a	Polisher	Perfura technologies, Coimbatore	Capacity : 50 kg/h 3 HP 3 Phase	1,05,000/-	sales@perfuratech.com 91 98948 50009
8	Roaster				
8a	Millet roaster	Perfura technologies, Coimbatore	Batch roaster Capacity: 20 kg/batch	40000/-	sales@perfuratech.com 91 98948 50009
9	Pulveriser				
9a	Pulveriser	Perfura technologies, Coimbatore	10 HP	116500/-	sales@perfuratech.com 91 98948 50009

Manufacturers of prominent millet processing machines

1. **Perfura Technologies (India) Pvt. Ltd., Coimbatore, India.**
They produce a wide range of millet machines: dehullers, dehusking, graders, destoners, aspirators, mills and more.



Millet cleaner cum destoner



Millet dehuller

2. **Nabhitha Engineering Private Limited, Hyderabad, India.**

An MSME startup designing and manufacturing post-harvest & secondary processing machines for millets, pulses etc.

Millet Primary Processing Unit



**Nabhitha Destoner cum
Grader cum Aspirator**



Nabhitha Polisher



Nabhitha Dehuller



**Nabhitha Hull-Rice
Separator**



Nabhitha Pulveriser



Nabhitha Packaging

3. M/s AVM Engineering Industries, Salem, Tamil Nadu.



4. Meet Machines, Indore, India

The Industry manufacture millet processing machines including dehuller / dehusker and related cleaning, conveying, aspirating equipment.



Millet cleaning machine,
200 kg/h



Millet de-stoner, 5 Hp (500 kg/h)
and 7 Hp models (700 kg/h)



Millet dehuller, 3 Hp,
500 kg/h

5. Shri Viratra Engineering, Jodhpur, Rajasthan, India.

Provides multi-purpose millet flour mill plants: cleaning, dehusking / grinding / grading, etc.



Cleaner cum grader



Destoner



Primary processing plant



11. Value added products of millets

Millets are nutrient-dense grains rich in proteins, dietary fiber, B-complex vitamins, and essential minerals such as iron, calcium, magnesium, phosphorus, and zinc. Being naturally gluten-free, it is ideal for individuals with gluten intolerance or celiac disease. Millets contain potent antioxidants like phenolic compounds, flavonoids, and tannins that reduce oxidative stress and the risk of chronic diseases such as cancer, diabetes, and cardiovascular disorders. Its high fiber content supports digestion, gut health, and helps regulate blood sugar and cholesterol levels. With a low glycemic index and numerous health benefits, millets are rightly regarded as “nutri-cereals” vital for promoting overall well-being.

Millet based value added products are gaining more attention due to its nutritional importance. Millet is mainly composed of starch (amylose and amylopectin) which is primary component of the millet and it defines quality of value-added products.

12. Traditional consumption practice of millets

Traditional millet consumption methods vary widely across different cultures and regions.

1. **Whole Grains:** In many cultures, millet grains are cooked whole, similar to rice or quinoa, and served as a staple food. It can be boiled, steamed, or simmered until soft and fluffy, then eaten plain or with savory or sweet accompaniments.
2. **Porridge:** Millet porridge is a popular traditional dish in many parts of the world. Millet grains are cooked in water or milk until soft and creamy, often flavored with spices like cinnamon, cardamom, or nutmeg. Porridge can be served for breakfast or as a comforting meal any time of day.
3. **Flatbreads:** Millet flour is widely used in Indian cuisine to prepare nutritious flatbreads like roti, chapati, and bhakri. The flour is mixed with water to form a soft dough, rolled into thin discs, and cooked on a hot griddle, yielding wholesome, gluten-free breads rich in flavor and essential nutrients.
4. **Fermented Foods:** In some cultures, millet grains are soaked, fermented, and then ground into a batter to make fermented foods like idli or dosa. Fermentation not only enhances the flavor but also improves the digestibility and nutritional quality of millet.
5. **Porridge Balls:** Millet porridge is allowed to cool and set, then formed into small balls or cakes. These porridge balls are convenient snacks or quick meals that can be eaten on the go.



6. **Alcoholic Beverages:** Millet is used to make traditional alcoholic beverages in some cultures. For example, in parts of Africa, millet beer is brewed by fermenting soaked and malted millet grains with water and yeast.
7. **Soups and Stews:** Millet grains are often added to soups, stews, and casseroles for texture and nutrition. It absorbs the flavors of the other ingredients and adds a hearty, filling element to the dish.
8. **Desserts:** Millet can be incorporated into desserts and sweet treats. In some cultures, millet is cooked with milk and sugar to make a creamy pudding or sweetened with honey and dried fruits for a nutritious dessert option.

In India, millets have been traditionally consumed for centuries as staple foods, especially in rural and semi-arid regions. Different communities across states like Karnataka, Maharashtra, Tamil Nadu, Rajasthan, and Odisha prepare a variety of millet-based dishes such as ragi mudde, bajra roti, jowar bhakri, khichdi, and dosa. Millets were often preferred for their ability to provide sustained energy and adapt to harsh climates. It was also used in fermented foods and beverages, enhancing digestibility and flavor. Traditionally grown without chemical inputs, millets formed an integral part of local food systems, symbolizing sustainable, nutritious, and climate-resilient eating practices in India.

Millets such as foxtail, little, kodo, and barnyard are cooked and served with vegetable or meat curries, just like how rice is eaten. For example, dishes like Thina Saadham and Varagu Pongal are popular boiled millet meals.

Another popular traditional use of millets is making porridge or gruel. Millets like ragi, bajra, jowar, and little millet are boiled with water or milk to make a soft, semi-liquid dish. Sometimes this porridge is fermented to improve its taste and make it easier to digest. Examples of these porridges include Ragi Koozh, Ambli, and Bajra Raab.

Millets are also ground into flour to make flatbreads such as rotis, bhakris, or rotti. The flour is mixed with water to make dough, which is then rolled or patted by hand and cooked on a hot griddle. Popular flatbreads made with millet flour include Jowar Bhakri, Bajra Roti, and Ragi Roti.

Steamed foods are another traditional way to use millets. In these recipes, millet batter or dough is steamed to make soft and healthy dishes. Examples include Ragi Mudde, Millet Idli, and Kozhukattai. These dishes are often eaten with chutneys or sambar.

Fermentation is a key step in making some traditional millet dishes like dosas and idlis. Millets such as ragi, bajra, and jowar are soaked, ground into a batter, and left to ferment. This process adds flavor and nutrition. Ragi Dosa and Jowar Idli are common fermented millet foods.



Millets are also used to make many traditional snacks, either fried or roasted. These include snacks made from millet flour or whole millet grains, such as Ragi Murukku, Puffed Jowar, and Millet Pakora. These snacks are tasty and often enjoyed during festivals or as everyday treats.

Sweet dishes and desserts made from millets are also very common. Ragi, foxtail, little, and kodo millets are used to prepare delicious sweets like Ragi Halwa, Thinai Laddu, and Millet Payasam. These traditional desserts are often prepared during celebrations and special occasions.

During festivals and fasting days, millets play an important role. Certain millets like foxtail, little, kodo, and samai are preferred because it is easy to digest and considered pure. People prepare special dishes like Samai Curd Rice and Millet Pongal during these times.

Millets are also used to make traditional beverages that are both refreshing and nutritious. Drinks like Ragi Malt and Bajra Ambil are made by mixing millet flour with jaggery, milk, or buttermilk. These drinks are popular especially in hot weather and provide energy and nourishment.

Table 6. Traditional consuming practices of millets

S.No.	Traditional Use	Commonly Used millets	Description / Examples
1	As a Rice Substitute	Foxtail, Little, Kodo, Barnyard	Cooked like rice and served with curries. e.g., <i>Thinai Saadham, Varagu Pongal</i>
2	Porridge / Gruel (Kanji, Koozh, Ambli)	Ragi, Bajra, Jowar, Little	Semi-liquid dish made by boiling millets; often fermented. e.g., <i>Ragi Koozh, Ambli, Bajra Raab</i>
3	Flatbreads (Rotis, Bhakri, Rotti)	Jowar, Bajra, Ragi	Dough made from millet flour is hand-patted and cooked on a griddle. e.g., <i>Jowar Bhakri, Bajra Roti, Ragi Rotti</i>
4	Steamed Foods	Ragi, Foxtail, Little	Prepared using steamed batter or dough. e.g. <i>Ragi Mudde, Millet Idli, Kozhukattai</i>
5	Fermented Pancakes / Crepes	Ragi, Bajra, Jowar	Fermented millet batter used to make dosas or idlis. E.g., <i>Ragi Dosa, Jowar Idli</i>
6	Traditional Snacks (Fried/Roasted)	All types of millets	Millet flour or whole grains used in traditional snacks. E.g., <i>Ragi Murukku, Puffed Jowar, Millet Pakora</i>
7	Sweets and Desserts	Ragi, Foxtail, Little, Kodo	Sweet dishes made using millets. E.g., <i>Ragi Halwa, Thinai Laddu, Millet Payasam</i>
8	Festival/ Fasting Dishes	Foxtail, Little, Kodo, Samai	Used in temple offerings and during fasts. E.g., <i>Samai Curd Rice, Millet Pongal</i>
9	Traditional Beverages	Ragi, Bajra	Millet-based drinks made with jaggery, milk, or buttermilk. E.g., <i>Ragi Malt, Bajra Ambil</i>

Table 7. Examples of Traditional Millet Dishes

Region	Traditional Dishes	Millets Used
Tamil Nadu	Ragi Kali, Koozh, Adai	Ragi, Foxtail, Kodo, Samai
Karnataka	Ragi Mudde, Jolad Rotti	Ragi, Jowar
Maharashtra	Bhakri, Ambil	Bajra, Jowar
Gujarat	Rotla, Khichdi	Bajra
Rajasthan	Bajra Roti, Raab	Bajra
Andhra Pradesh / Telangana	Sajja Rotte, Ambali	Bajra, Jowar
Odisha	Mandia Jau	Ragi
Uttarakhand	Madua Roti	Ragi
Tribal Belt (Jharkhand, Chhattisgarh)	Pej (Gruel)	Kodo, Little, Browntop



13. Traditional Millet Processing Methods

Millet processing in rural areas relies on simple, manual techniques that have been practiced for generations. The first step after harvesting is threshing, where the millet panicles are beaten with sticks, trampled by foot, or sometimes by animals to separate the grains from the stalks. This is followed by winnowing, an age-old method where the grains are tossed into the air using baskets or flat trays so that the wind carries away the lighter chaff and other impurities, leaving clean millet grains behind. These are basically harvest-related operations primarily aimed at separating the grains from the plant and cleaning it, and are not part of the actual processing steps. The true millet processing begins after threshing and winnowing, involving methods that prepare the grain for consumption.

The millets after threshing are subjected to a drying operation in order to reduce its moisture content to a safe storage/processing conditions (10-12 % wb). Open sun drying is a prevalent method followed for millets in the traditional practices. To make the grains edible, dehushing is performed manually by pounding the millet in stone mortars or wooden pounders to remove the tough outer husk. This is a labor-intensive process but essential for many millet varieties that have hard outer hull containing anti-nutritional contents.

After dehushing, the grains are subjected to sieving or screening, where it is passed through woven bamboo sieves or meshes to separate broken grains, remaining husks, or other debris, ensuring the purity of the grain. Some millets require parboiling or soaking before further processing. This involves soaking the grains in water for specific hours or lightly boiling it, which softens the husk and improves digestibility and ease of removal.

Another common step is roasting or dry roasting the grains lightly on a flat pan over an open flame. This process enhances the flavor, aroma, and shelf life of the grains and is sometimes done before grinding. For grinding, the traditional stone grinders known as chakki or sil-batta are widely used to convert millet grains into flour. This flour is then used for preparing traditional foods such as rotis, dosas, and porridges.

In addition some traditional areas practice pounding or flattening the grains using wooden rollers or pounders to produce millet flakes, similar to poha, which cook quickly and are used in various traditional dishes.

More specialized processing methods include sprouting or malting, where grains are soaked and allowed to germinate before drying and grinding. This method enhances the nutritional content and digestibility of millets and often used for special preparations or traditional beverages. Fermentation plays an important role in millet-based foods, particularly in southern India, where naturally fermented millet batters or porridges are prepared to improve taste, texture, and nutritional benefits. Fermentation is key in making traditional dishes like dosa, idli, ankanji.

Overall, traditional millet processing is a labor-intensive and relies heavily on natural resources like sun, wind, and fire, alongside simple hand tools. These methods not only preserve the nutritional value of millets but also contribute to its unique flavors and textures cherished in rural diets across India and other millet-consuming regions worldwide.

Table 8: Traditional Methods of Millet Processing

S.No.	Processing Method	Description	Purpose /Outcome
1	Threshing	Manual beating of millet panicles to separate grains from stalks. Often done by beating with sticks or treading by animals or humans.	Removes grain from the harvested millet stalks. No electricity. Low cost method.
2	Winnowing	Using baskets or flat trays to toss millet grains in the air so wind blows away lighter chaff and impurities.	Separates grain from impurities like husks, dust, chaff etc.
3	Sorting / Hand Picking	Manual removal of damaged, shriveled or infested grains by hand	Ensures quality of grains or flour.
4	Drying (Sun-drying)	Spreading freshly harvested millet grains or stalks under the sun to reduce moisture content.	Helps in proper storage by reducing moisture and preventing mold.
5	Dehusking / Hand-pounding	Using a stone mortar and pestle or wooden pounder to manually remove outer husk from millet grains.	Dehulling of millets for removal of inedible outer hull.
6	Sieving / Screening	Passing grains through various size mesh or woven bamboo sieves to separate broken grains, husks, and impurities.	Improves purity and quality of grain.
7	Parboiling / Soaking	Soaking grains in water for several hours or boiling lightly before drying. Used especially for certain millets like Kodo or Barnyard.	Improves digestibility and sometimes ease of dehusking.
8	Roasting / Dry Roasting	Light roasting of millet grains on a flat pan over fire to enhance flavor and shelf life. Sometimes roasted before grinding.	Improves taste, aroma, and digestibility.
9	Grinding / Stone Milling	Using a traditional stone grinder (chakki or sil-batta) to convert millet grains into flour.	Produces millet flour (atta) for making traditional food like rotis, dosa batter, etc.
10	Pounding / Flattening	Using a wooden or stone roller or pounder to flatten grains, producing flakes or coarse grains.	Used to prepare traditional flakes like <i>poha</i> .
11	Sprouting / Malting	Soaking millet grains and allowing to sprout before drying and grinding.	Enhances nutritional value and digestibility; used for special preparations or beverages.
12	Fermentation	Traditional soaking for natural fermentation of millet batter or porridge to improve taste, texture, and nutritional benefits.	Used in making fermented foods like dosa, idli, and kanji.



14. Technology for production of value added products

Millet-based value-added products are those derived from raw millets through processing, fortification, or transformation to enhance their nutritional quality, economic value, and shelf life. These products increase profitability by converting raw millets into convenient, nutritious, and market-ready forms such as flours, snacks, beverages, breakfast mixes, and bakery items.

Table 9. Different value added products made from millets

Sr No	Product category	Name of value added products
1	Bakery and snacks	• Millet cookies • Millet-based crackers • Millet bread • Millet muffins • Millet pizza bases
2	Breakfast Cereals	• Millet flakes • Millet porridge mixes • Ready-to-eat millet muesli
3	Instant and Convenience Foods	• Millet noodles • Millet pasta • Instant millet soup mixes
4	Beverages	• Millet malt drink • Millet-based smoothies • Millet-based energy drinks
5	Traditional and Fusion Foods	• Millet dosa and idli mix • Millet khichdi mix • Millet-based biryani or pulao
6	Sweets and Desserts	• Millet laddoos • Millet-based energy bars • Millet-based kheer or puddings
7	Other Products	• Millet flour (standalone or in composite flours) • Millet puffs • Millet-based baby food

Novel Millet based products developed by ICAR-CIAE, Bhopal



1. Millet Biscuit

Millet jaggery-based biscuits are a wholesome and nutritious alternative to traditional refined flour biscuits, made using whole wheat flour, pearl millet, foxtail millet, and jaggery for natural sweetness. Each 100 g serving provides 9.21 g protein, 64 g carbohydrates, 20 g fat, 1.65 g ash content. The estimated cost of production is Rs. 200-225/kg.



2. Millet Laddu

Millet-based laddu is a nutrient-rich superfood providing natural energy, healthy fats, and essential nutrients. Each 100 g contains 12.31 g protein, 27.5 g fat, and 53% antioxidant activity. The estimated cost of production is Rs. 200/kg.



3. RTE Millet Health

Mixture Ready-to-Eat (RTE) millet-based health mixture is a nutritious, plant-based snack for health-conscious individuals. Providing 10.5 g protein, 6.9 g fats, 149 mg calcium, and 5 mg iron per 100 g. The estimated cost of production is Rs. 214/kg.



4. Millet Nutrient Dense Nutri-Spread

The millet-based nutrient-dense nutri-spread is a healthy and convenient alternative for health-conscious consumers. Each 100 g provides 14.5 g protein, 21 g fat, 2.4 g ash, 25 mg phosphorus, 40 mg iron, and 73 % antioxidant activity. The estimated cost of production is Rs. 365/kg.



5. RTC Millet Instant Dalia

RTC fermented millet instant dalia is a nutritious and ready-to-cook meal. Each 100 g serving provides 11.9 g protein, 62 g carbohydrates, 1.89 g fat, 1.34 g ash, 140 mg magnesium, 4.5 mg iron, and 64% antioxidant activity. The estimated cost of production is Rs. 113/kg.



7. RTS Millet based Beverages

Nutrient-rich, plant-based beverage promoting gut health and supporting overall well-being. Each 100 ml serving delivers 1.5 g protein, 0.90 g fat, 0.29 g ash, 15 mg magnesium, 9 mg calcium, and 56% antioxidant activity. The estimated cost of production is Rs. 93/L



6. RTS Millet Lassi

Sorghum lassi is a nutritious, gluten-free fermented beverage. Each 100 ml serving contains 2.7 g protein, 60 g carbohydrates, 3.02 g fat, 0.16 g ash, 13 mg magnesium, 10 mg calcium, and 53 % antioxidant activity. The estimated cost of production is Rs. 80/L



8. Roasted Bajra

Ready-to-Eat (RTE) roasted bajra is a highly nutritious and versatile product. Each 100 g serving contains 9.96 g protein, 54 g carbohydrates, 5.6 g fat, 1.07 g ash, and 46% antioxidant activity. The estimated cost of production is Rs. 84/kg.



9. Roasted Kodo Millet

Roasted Kodo Millet is a gluten-free, ready-to-eat, nutrient-dense snack. Each 100 g serving provides 8.6 g protein, 3.64 g fat, 2.72 g ash, and 43% antioxidant activity. The estimated cost of production is Rs. 86/kg.



10. Kodo Millet Laddu

Kodo millet-based laddu is a nutrient-rich, gluten-free traditional sweet designed as a healthy, energy-boosting snack. Each 100 g serving provides 12 g protein, 16 g fat and 1.98 g ash content. The estimated cost of production is Rs. 150/kg.



11. Bajra Millet Laddu

Bajra-based laddu is a nutrient-rich, healthy and energy-boosting snack. Each 100 g serving provides approximately 8.51 g protein, 2.92 g fat and 0.74 g ash content. The estimated cost of production is Rs. 150/kg.



12. Millet Nutri Bar

Millet-based nutri bar is a nutrient-dense and energy-rich snack. Each 100 g serving provides approximately 7.56 g protein, 3.58 g fat, 2.45 g ash content, 90 mg magnesium, 8 mg calcium, and 58% antioxidant activity. The estimated cost of production is Rs. 86/kg.



13. Millet Herbal Soup

The RTC Millet Herbal Soup is a nutritious and convenient dietary option. Each 100 g serving provides approximately 8.2 g protein, 3.40 g fat, 20.60 g ash, 90 mg magnesium, 8 mg calcium, and 58% antioxidant activity. The estimated cost of production is Rs.250/kg.



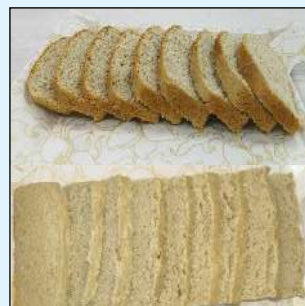
15. Millet Soya Fermented Powder

Millet soya based fermented powder is functional and ready-to-serve (RTS) beverage. Each 100 g of powder provides 12.08 g protein, 2.16 g fat, 1.62 g ash and 6.4% moisture content. The estimated cost of production is Rs. 215/kg.



14. Millet RTS Instant Beverage Mixture

Millet-based Ready-to-Serve (RTS) instant beverage mix is developed using fermented ingredients. Each 100 g serving provides approximately 10 g protein, 2.5 g fat, 2.9 g ash, and 54% antioxidant activity. The estimated cost of production is Rs. 300/kg.



16. Millet Bread

Millet bread and millet-atta bread are nutritious and healthy bakery product made by replacing the maida content by millet and wheat flour. Millet bread contains moisture content 28.82 %, protein 10.61%, carbohydrate 52.96%, fat 5.76% and ash 1.85%, whereas millet atta bread contains moisture content 31.23%, protein 12.66%, carbohydrate 48.61%, fat 5.38% and ash 2.12%. The production cost of bread is Rs. 70-80/kg.



18. Millet-Peanut Chikki

Millet-Peanut chikki is a nutritious and delicious traditional Indian snack that offers many health benefits. Fermented millets are used which increase nutrient availability. It contains moisture content 4.39%, protein 10.11%, fat 15.9%, ash 1.59% and carbohydrate 68.01%. Cost: Rs. 94/kg.



20. Millet Pizza

Millet-wheat composite flour (70:30) pizza developed using sorghum, pearl, finger, and kodo millets offers 416.4 kcal per 120 g serving. Baked at 220 °C for 28 min, with an optimized base diameter of 178 mm and 10 mm thickness expanding to 25 mm after baking. Rich in dietary fiber, minerals (Fe, Ca, Mg), and complex carbs; psyllium husk enhances elasticity and water-binding capacity.



19. Millet-Flaxseed Chikki

Millet-flaxseed chikki is a nutritious and delicious traditional Indian snack that offers many health benefits. Fermented millets are used which increase nutrient availability. It contains moisture content-4.13%, protein 8.13%, fat 10.85%, ash 1.47% and carbohydrate 75.42%. Cost Rs. 84/kg.



21. Millet Butter

A plant-based Millet-Oat Butter was formulated using oat flour (20.5 g), jowar flour (14.5 g), ragi flour (5.8 g), roasted almonds (11.7 g), desi ghee (19.5 g), olive oil (12.7 g), water (10.7 g), and small amounts of soy milk powder, garlic, cinnamon, salt, and orange peel powder per 100 g batch. The ingredients were roasted and blended at 35–40 °C to form a smooth emulsion.



Prominent commercially available millet-based products



1. Millet health Mix

Made with sprouted ragi and sprouted green moong. Per 100 g: Protein – 12.8 g, Healthy Fat – 3.84 g, Iron – 6.56 mg, Fiber – 10.18 g.



2. Mixed millets porridge

Mixed Millets Porridge Mix is specially formulated for growing kids to provide essential minerals, protein, and healthy fats in their daily diet. A blend of mixed millets, moong dal, nuts, and cumin offers a delicious taste and pleasant flavor. Per 100 g: Protein – 14.1 g, Fat – 6.2 g, Crude Fiber – 1.94 g.



3. Millet Choco Crunch

Little Joys Millet Choco Crunch – A healthy breakfast cereal for kids, made with ragi, jowar, foxtail millet, and red rice. Free from maida and refined sugar, sweetened naturally with jaggery.



4. Millet Spread with Mixed Fruit

Millet Spread with Mixed Fruit is a wholesome blend of grapes, apple, banana, papaya, millets, and extract of the herb *Justicia wynaadensis*. Traditionally, the local community in Coorg consumes *Justicia wynaadensis* during the rainy season, as it is believed to promote health and wellness.



5. Millet Spread Passion Fruit

Vinissance combines millets with passion fruit—also known as granadilla or Krishnaphal in India—to create a nutritious spread. Rich in essential nutrients such as vitamin C, iron, potassium, and protein, it supports overall health and boosts vitality.



6. Fermented Millet Beverage

Bliss Body Sugar-Free Mango Flavored Millet Fermented Beverage – A gut-health drink with natural probiotics, gluten-free and vegan. Made from fermented millet, it delivers essential nutrients along with a unique and refreshing taste.



7. Millet Drink Mix

Containing unpolished millets (Foxtail, Kodo, Little, Barnyard, Proso, Brown Top, Sorghum, Pearl, Finger millet), fenugreek, green gram, horse gram, cardamom, almond, cashew, soybean, peanut, maize, and Bengal gram. Nutritional Value per 100 g: Protein – 13.42 g, Carbohydrate – 70 g, Fat – 9.30 g.



8. Millet Nutri Bar

Millets Dry Fruits Nutrition Bars – No added sugar, no preservatives, and gluten-free. A fiber- and protein-rich energy snack. Nutritional Value per 35 g: Protein – 2.8 g, Carbohydrate – 18.3 g, Fat – 4.7 g.



9. Vasani G Mix Millet Daliya

Vasani G Mix Millet Daliya is a wholesome blend of selected millets, including bajra, jowar, ragi, sama, kodo, foxtail, and little millet. This natural multigrain dalia is carefully cleaned and processed into cracked grains for quick cooking, easy digestion, and versatile use. Rich in dietary fiber, protein, and essential nutrients



11. Jawar Upma Mix

This is Instant Jowar Upma Mix, a ready-to-cook healthy breakfast option made from jowar (sorghum). It offers a nutritious and convenient meal rich in fiber and essential nutrients.



10. Bajra Daliya

VGB Pearl Millet Porridge (Kambu Daliya) is ideal for maintaining healthy blood sugar levels and supporting heart health. Sajje Daliya also promotes muscle health and aids proper digestion. VGB Bajra Daliya (Nattu ka Daliya) provides protein (10.96 g), dietary fiber (11.49 g), fat (5.43 g), carbohydrates (61.78 g), and energy (1456 kJ) per 100 g.



12. Jawar, Vermicilli

This is Jowar Vermicelli, a healthy alternative to regular vermicelli made from nutrient-rich sorghum. It's ideal for preparing light, wholesome meals like upma or kheer.



13. Nutrihub, IIMR

It is a Jowar Rawa made from finely ground sorghum. It's a nutritious and gluten-free alternative to regular semolina. Perfect for making healthy dishes like upma, idli, and porridge.



14. Jowar Idli Mix

It is premix of Idli made of jowar as a main ingredient. This ready to cook product can be good breakfast providing the health benefits of millets.



15. Natural Bajra Dalia

VGBNP Natural Bajra Dalia It's easy for cooking and digestion purpose. Bajra Dalia is one of the ancient millet that was used by our ancestors. It is extremely low in fat content. Thus, it is very good even for those who have any issues with the fear of putting on weight.



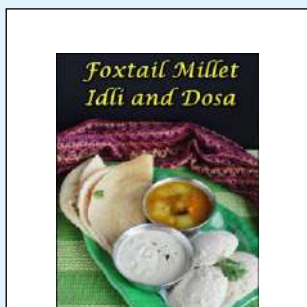
16. Mixed millet daliya

Wholesome blend of selected millets, including Bajra, Jowar, Ragi, Sama, Kodo, Foxtail, and Little Millet. This natural multigrain daliya is carefully cleaned and processed into cracked and broken grains, making it quick to cook, easy to digest, and versatile in use. Rich in dietary fiber, protein, and essential nutrients



17. Millet Idli Dosa Batter

The traditionally cooked millet dosa includes all the regular dosa ingredients (urad dal, methi, millet) soaked and ground into a fine paste to make dosa batter.



19. Foxtail millet Idli and Dosa mix

It is a millet based mix for preparation of Idli and Dosa



21. Organic Millet Daliya

This blend of humble, ancient millets, in their broken form, when slow-cooked with love, creates a dish that's deeply satisfying, comfortingly rustic, and incredibly nutritious.



18. Millet Dosa Idli Batter

Millet Amma's Organic Barnyard Millet Batter is not only extremely tasty but also very nutritious; it aids in weight-management and makes you feel light and healthy.



20. Millet-Multigrain Dosa Mix

Traditionally processed and cooked millet dosa



22. Coarse Mix Dalia

VGB Pure Coarse Multigrain daliya (Mota Anaj Mix Daliya) Ingredients- Bajra daliya (Pearl millet), Jowar Daliya (Sorghum), Makka Daliya (Maize)



23. Millet Idli Dosa Batter

The traditionally cooked millet dosa includes all the regular dosa ingredients (urad dal, methi, millet) soaked and ground into a fine paste to make dosa batter. The millet flour dosa recipe uses flour versions of all the millets and curd to make an instant dosa batter.



24. Millet Idli Dosa Mix

The traditionally cooked millet dosa for breakfast having property of millet.



25. Millet Idli Mix

Rich in Millets – A wholesome mix of nutrient-dense millets for a healthy start to your day. High in Fiber & Protein – Supports digestion and keeps you energized. No Preservatives & Additives – 100% natural ingredients for a clean and healthy meal.



26. Pearl Millet Superfood

Pearl Millet (*Pennisetum glaucum*) is a superfood grain first cultivated in ancient Africa. One serving of pearl millet will give you 10.3 grams of protein, 2.9 grams of dietary fiber, 67mg of phosphorous, and over 100% of your recommended daily intake (RDI) of Manganese.



27. Millet Coffee

Made with Millets and plant-based ingredients. Choose from a variety of flavors, all of which are dairy-free and ethically made



28. Millet Drink

VDC Millet Drink- Non dairy, Blend of Ethnic millets, Zero Cholesterol, Lactose free, Vegan, No added Sugar, VDC Millet Drink is nourishing plant-based milk made using a mixture of ancient millets. It has a great combination of nutrients and vitamins with no sugar, zero cholesterol, and absolutely no guilt.



29. Millet drink

Lima Millet drink is a plant-based milk alternative and can be used in many ways: cold or warm as a drink, for preparing cocoa and cereal, for tea and coffee and for cooking and baking.



30. Millet Ice Cream

Siri Millet ice cream is a nutritious, millet-based frozen dessert made with natural ingredients and fruit flavors. It combines the creamy texture of traditional ice cream with the health benefits of millets, offering high fiber, low glycemic index, and gluten-free goodness. This product promotes healthy indulgence while supporting sustainable and traditional grains.



31. Millet Marvella

Millet Marvella is a delectable millet milk chocolate that brings together the luscious, indulgent flavor of chocolate with the numerous nutritional advantages of millet. Crafted using only the finest ingredients and fortified with calcium, Millet Marvella is the guilt-free treat that caters to both health-conscious individuals and chocolate enthusiasts.



32. Millet Choco Spread

A delicious blend of millet milk chocolate, juicy fruits, and crunchy nuts. Wholesome, indulgent, and made with olive oil and brown sugar guilt-free delight in every piece



33. Millet Milk Mix

No Added Sugar This magic milk mix is made from 100% natural millets, providing essential nutrients for growing children.



34. Millet Nutrimix

Little Joys Nutrimix Nutrition Powder for kids 7-12 years. This kid's health drink is packed with the benefits of natural plant-based ingredients such as ragi, bajra, almonds & oats. It helps in healthy weight and height gain, boosts immunity and concentration & improves energy.



35. Millet chocolate Horlicks

Millet chocolate Horlicks is designed to address this very challenge of nutrition not being tasty and resolve the tension around nutrition between the mother and the child. Millet chocolate Horlicks is made with the traditional wisdom of millets that each millet has its own importance



36. Millet Healthy Drink

This wholesome healthy drink is extremely simple to make and is the most ideal solution to curb your hunger. Have this go-to healthy option alongside your morning breakfast.

15. Suitability of Different Millets for Novel Food Product Development

1. Foxtail Millet (*Setaria italica*)

- **Key Features:** Low glycemic index, good starch digestibility, high iron & dietary fiber.

Applications:

- *Milk:* Enzymatically processed foxtail millet milk shows good sensory acceptability (Sharma et al., 2021).
- *Dalia:* Easily digestible, suitable for infant and geriatric foods (Devi et al., 2014).
- *Noodles:* Blending with wheat improves texture and cooking quality (Saleh et al., 2013).
- *Health Mix:* Good for diabetic formulations due to slow glucose release.

2. Finger Millet (*Eleusine coracana*)

- **Key Features:** Very high calcium, polyphenols, dietary fiber.

Applications:

- *Milk:* Finger millet malt milk improves calcium bioavailability (Sridhar & Lakshminarayana, 1994).



- *Dalia*: Traditional porridge, highly accepted for weaning foods.
- *Noodles*: Fortification enhances fiber and antioxidants, though color is darker (Sudha et al., 2012).
- *Health Mix*: Best candidate for bone health formulations.

3. Pearl Millet (*Pennisetum glaucum*)

- *Key Features*: High iron, zinc, resistant starch; drought hardy.

Applications:

- *Milk*: Enzymatic treatment reduces bitterness and phytic acid, enhancing milk quality (Patel et al., 2016).
- *Dalia*: Nutritious porridge, energy-dense.
- *Noodles*: Fortification improves nutritional density (Gupta et al., 2017).
- *Spread*: Can be incorporated into cocoa-based spreads to mask earthy taste.
- *Health Mix*: Strong candidate for anemia and malnutrition-targeted mixes.

4. Little Millet (*Panicum sumatrense*)

- *Key Features*: Easy digestibility, rich in iron, antioxidants.

Applications:

- *Milk*: Smooth and acceptable flavor, good for diabetic-friendly beverages (Veena et al., 2020).
- *Dalia*: Easily digestible, suitable for therapeutic porridge.
- *Noodles*: Light color and soft texture.
- *Health Mix*: High antioxidant capacity supports functional blends.

5. Barnyard Millet (*Echinochloa spp.*)

- *Key Features*: High fiber, low GI, B-complex vitamins.

Applications:

- *Milk*: Good sensory acceptance after germination (Anitha et al., 2019).
- *Dalia*: Light and therapeutic porridge.
- *Noodles*: Blends well with legumes in extrusion.
- *Health Mix*: Suitable for diabetic and weight-management products.

6. Kodo Millet (*Paspalum scrobiculatum*)

- *Key Features*: High polyphenols and antioxidants.



Applications:

- *Milk*: Needs blending with oats/soy for better smoothness (Pathak et al., 2022).
- *Dalia*: Traditionally used as porridge, beneficial in lifestyle disease diets.
- *Spread*: Can be developed with nuts and oilseeds for antioxidant-rich spreads.
- *Health Mix*: Suitable for anti-diabetic formulations.

7. Proso Millet (*Panicum miliaceum*)

- *Key Features*: Rich in protein, niacin, and essential amino acids.

Applications:

- *Milk*: Excellent emulsification and smooth texture (Pradeep & Sreerama, 2015).
- *Noodles*: Light color and good elasticity.
- *Spread*: Nutty taste, acceptable with minimal additives.
- *Health Mix*: Balanced protein makes it excellent for nutritional blends.

Suitability of Millets for Novel Food Products

Millets are highly versatile grains with unique nutritional and functional properties that make it suitable for a wide range of novel food products. Its suitability depends on the type of millet and the processing technology applied.

1. Finger Millet (*Ragi*, *Eleusine coracana*)

- **Nutritional Strengths**: Extremely rich in calcium, iron, dietary fiber, and polyphenols.

Product Suitability:

- *Milk & Beverages* : Fermented or malted finger millet provides calcium-rich milk alternatives and probiotic beverages.
- *Dalia & Weaning Foods* : Germinated and malted ragi flour is widely used in infant health mixes.
- *Noodles & Pasta* : Used in composite form due to darker color.
- *Spreads & Mixes* : Roasted ragi flour adds nutty flavor and calcium enrichment.

2. Pearl Millet (*Bajra*, *Pennisetum glaucum*)

- *Nutritional Strengths*: Rich in protein, iron, zinc, magnesium, and resistant starch.

Product Suitability:

- *Milk* : Fermented bajra milk has good sensory acceptability and improved digestibility.
- *Dalia* : Parboiled or roasted bajra makes soft, quick-cooking porridge.
- *Noodles & Pasta* : Works well in extrusion with wheat or rice blends.



- *Health Mixes & Spreads*: Enhances protein and mineral density.

3. Foxtail Millet (*Setaria italica*)

- *Nutritional Strengths*: Low glycemic index, rich in iron, fiber, and antioxidants.

Product Suitability:

- *Milk & Beverages*: Soaked/fermented foxtail millet yields smooth, diabetic-friendly milk.
- *Dalia*: Roasted foxtail grains give instant dalia with nutty flavor.
- *Noodles & Pasta*: Good starch properties make it highly suitable for extrusion.
- *Spreads & Mixes*: Mild taste makes it suitable for composite health mixes.

4. Barnyard Millet (*Echinochloa spp.*)

- *Nutritional Strengths*: Gluten-free, rich in dietary fiber, iron, and polyphenols; very low glycemic index.

Product Suitability:

- *Milk*: Germinated barnyard millet produces antioxidant-rich beverages.
- *Dalia*: Ideal for diabetic-friendly porridge.
- *Noodles & Snacks*: Extruded barnyard millet gives fiber-rich products.
- *Spreads & Health Mixes*: Works well in roasted or malted blends.

5. Little Millet (*Panicum sumatrense*)

- *Nutritional Strengths*: High in iron, polyphenols, and dietary fiber; mild flavor.

Product Suitability:

- *Milk*: Easy-to-digest milk base after soaking and decortication.
- *Dalia*: Quick-cooking roasted dalia suitable for instant foods.
- *Noodles*: Light color and smooth texture after extrusion.
- *Spreads & Health Mixes*: Roasted flour adds nutritional density.

6. Kodo Millet (*Paspalum scrobiculatum*)

- *Nutritional Strengths*: Rich in antioxidants and dietary fiber; suitable for low-GI diets.

Product Suitability:

- *Milk & Beverages*: Fermented kodo gives antioxidant-rich milk.
- *Dalia*: Parboiled kodo is easily digestible and quick-cooking.
- *Noodles*: Works in composite flours; darker color may limit consumer appeal.
- *Spreads & Mixes*: Roasted kodo flour enhances flavor and texture.

Table 10: Suitability of millets for preparation of different food products

Millet	Milk	Dalia	Noodles	Spread	Health Mix	References
Foxtail millet	✓✓ (smooth, diabetic-friendly)	✓✓✓ (light, digestible)	✓✓ (good with blends)	✓ (needs fortification with legumes for texture)	✓✓✓ (balanced micronutrients, low GI)	Sharma et al., 2021; Devi et al., 2014; Saleh et al., 2013
Finger millet (Ragi)	✓ (flavor masking needed, calcium-rich)	✓✓✓ (traditional porridge)	✓✓ (dark but nutritious)	✓✓ (nutty, antioxidant-rich)	✓✓✓ (bone health, infant foods)	Sridhar & Lakshminarayana, 1994; Sudha et al., 2012
Pearl (Bajra)	✓ (needs enzymatic processing)	✓✓✓ (dense, energy-rich)	✓ (color/bitter notes)	✓ (earthy taste, best with cocoa/honey)	✓✓✓ (iron & zinc-rich, anemia control)	Patel et al., 2016; Gupta et al., 2017
Little (Kutki)	✓✓✓ (neutral taste, smooth milk)	✓✓✓ (easily digestible porridge)	✓✓✓ (light color, soft noodles)	✓✓✓ (creamy with pulses)	✓✓✓ (antioxidant, diabetic-friendly)	Veena et al., 2020
Barnyard (Sanwa)	✓✓ (acceptable after germination)	✓✓✓ (light, therapeutic porridge)	✓✓ (extrusion blends well)	✓ (slightly coarse, needs oilseeds)	✓✓✓ (weight management, low GI)	Anitha et al., 2019
Kodo	✓ (requires blending for smoothness)	✓✓ (therapeutic porridge)	✓ (dark color, fair texture)	✓✓ (nutty, good with nuts/oilseeds)	✓✓✓ (antioxidant, anti-diabetic use)	Pathak et al., 2022
Proso (Chena)	✓✓✓ (excellent emulsification, smooth milk)	✓✓ (nutritious porridge)	✓✓✓ (light, elastic noodles)	✓✓ (nutty taste, minimal additives)	✓✓✓ (balanced protein & amino acids)	Pradeep & Sreerama, 2015



16. Processing Interventions on Millets for Novel Food Products

1. Fermentation

Fermentation reduces anti-nutritional factors like phytates and tannins, increases mineral bioavailability, enhances B-vitamin content, and develops probiotic potential. These improvements make fermented millets highly suitable for millet-based milk, probiotic beverages, spreads, and health mixes. e.g. fermented finger millet and pearl millet are often used in non-dairy probiotic drinks.

2. Germination / Malting

Germination enhances protein digestibility, increases free amino acids, vitamin C, and antioxidant activity, while reducing phytic acid and tannins. Malting millet flours are highly suitable for health mixes, infant weaning foods, dalia, and milk bases. Finger millet malt, for instance, is widely used in nutritious infant food formulations.

3. Extrusion

Extrusion improves starch digestibility, increases shelf life, reduces bulk density, and provides expanded products with light texture and quick cooking properties. This makes extruded millet flour highly suitable for instant dalia, noodles, pasta, and extruded snacks.

4. Soaking

Soaking softens the grain, reduces soluble anti-nutrients, and improves hydration properties. This process makes millets more suitable for milk preparation, dalia, and spreads, as soaked grains give smoother consistency and better sensory properties.

5. Parboiling

Parboiling causes starch gelatinization, reduces cooking time, and enhances storage stability and texture. Parboiled millet grains are suitable for instant dalia, health mixes, and flours for spreads. Barnyard millet and kodo millet respond especially well to parboiling.

6. Roasting

Roasting enhances aroma, flavor, and shelf life while lowering moisture and microbial load. Roasted millet flours are ideal for ready-to-use dalia, instant mixes, and spreads. Little millet and foxtail millet are often roasted to develop nutty-flavored products.

7. Blending with other Grains or Legumes

Blending improves protein quality, especially lysine content, and balances nutrients while enhancing sensory profile. Such composite flours are highly suitable for fortified health mixes, composite noodles, spreads, and milk-based beverages. Millet-legume blends are often developed for balanced nutrition in health mixes and meal replacements.

17. Effect of Processing Methods on Functional and Product Properties of Different Millets
Table 11.1. Effect of Processing Methods on Functional and Product Properties of Different Millets

Millet	Fermentation (Effect → Product Use)	Germination / Malting (Effect → Product Use)	Extrusion (Effect → Product Use)	Soaking / Parboiling / Roasting (Effect → Product Use)	References
Foxtail millet (<i>Setaria italica</i>)	↑ Mineral bioavailability, ↓ Phytic acid → Enhanced millet milk and fermented beverages	↑ Free amino acids, ↓ Anti-nutrients → Infant dalia, smooth millet milk	Promotes starch expansion → Extruded noodles/snacks	Reduces cooking time, enhances aroma → Dalia and spreads	Sharma et al., 2021; Devi et al., 2014; Saleh et al., 2013
Finger millet (Ragi) (<i>Eleusine coracana</i>)	↓ Tannins & phytates, ↑ Calcium bioavailability → Fermented drinks, probiotic milk	↑ Soluble sugars, ↑ Ascorbic acid → Malted milk, infant dalia	Improves noodle texture (dark color persists)	Parboiling & roasting enhance porridge texture and flavor	Sridhar & Lakshminarayana, 1994; Sudha et al., 2012
Pearl millet (Bajra) (<i>Pennisetum glaucum</i>)	↓ Bitterness & phytic acid → Millet milk, mineral-rich health mixes	↑ Digestibility, ↓ Anti-nutrients → Dalia, fortified mixes	Enhances shelf life & starch digestibility → Noodles/pasta	Improves flour texture and spreadability	Patel et al., 2016; Gupta et al., 2017
Little millet (Kutki) (<i>Panicum sumatrense</i>)	Improves sensory quality, ↓ Glycemic Index → Diabetic-friendly milk & beverages	↑ Antioxidants, ↑ Protein digestibility → Health mix, dalia	Good starch expansion → Light-colored noodles	Roasting improves instant dalia and milk powder quality	Veena et al., 2020
Barnyard millet (Sanwa) (<i>Echinochloa spp.</i>)	↑ Soluble sugars, ↓ Anti-nutrients → Probiotic drinks, health mixes	↑ Antioxidant activity & digestibility → Therapeutic dalia	Produces fiber-rich noodles & snacks	Quick roasting reduces coarse mouthfeel → Smooth spreads	Anitha et al., 2019
Kodo millet (<i>Paspalum scrobiculatum</i>)	↓ Anti-nutrients, ↑ Antioxidants → Fermented drinks & spreads	↑ Bioactives, ↓ Phytic acid → Malted beverage mixes, dalia	Used in composite extrudates (dark color persists)	Roasting enhances nutty flavor → Value-added spreads	Pathak et al., 2022
Proso millet (Chena) (<i>Panicum miliaceum</i>)	Improves viscosity & flavor → Smooth plant-based milk	↑ Protein digestibility, ↑ Free amino acids → Health mixes, dalia	Excellent elasticity & light color → Noodles/snacks	Parboiling & roasting reduce off-flavor → Spreads	Pradeep & Sreerama, 2015

↑ : Increase/higher; ↓ Lower; → Leads to

18. Effect of Processing on Millets for Novel Product Development
Table 12. Effect of Processing on Millets for Novel Product Development

Processing Method	Effect on Nutritional & Functional Properties	Improved Suitability for Novel Products	References
Fermentation	↓ Anti-nutrients (phytates, tannins), ↑ mineral bioavailability, ↑ B-vitamins, probiotic potential, improved flavor	Fermented millet milk, probiotic beverages, spreads, health mixes	Sharma et al., 2021; Sridhar & Lakshminarayana, 1994; Anitha et al., 2019
Germination / Malting	↑ Protein digestibility, ↑ free amino acids, ↑ vitamin C & antioxidants, ↓ phytic acid & tannins	Malted health mixes, infant weaning foods, dalia, milk base	Devi et al., 2014; Veena et al., 2020; Gupta et al., 2017
Extrusion	↑ Starch digestibility, ↑ shelf life, ↓ bulk density, better expansion, quick cooking	Noodles, pasta, instant dalia, extruded snacks	Patel et al., 2016; Pradeep & Sreerama, 2015; Sudha et al., 2012
Soaking	Leaching of soluble anti-nutrients, softening of grains, improved hydration	Millet milk, dalia, spreads	Pathak et al., 2022; Sharma et al., 2021
Parboiling	Starch gelatinization, ↓ cooking time, ↑ storage stability, improved texture	Instant dalia, health mixes, flours for spreads	Sridhar & Lakshminarayana, 1994; Gupta et al., 2017
Roasting	↑ Aroma, flavor, shelf life, ↓ moisture & microbial load	Ready-to-use dalia, roasted flours for spreads, instant mixes	Anitha et al., 2019; Pathak et al., 2022
Milling / Decortication	Removes hulls & fiber, ↓ tannins, improves texture, palatability	Millet milk base, fine flour for noodles & spreads	Saleh et al., 2013; Devi et al., 2014
Blending with Other Grains / Legumes	Nutritional complementation (↑ protein, lysine, minerals), improved texture & sensory profile	Composite noodles, fortified health mixes, spreads, beverages	Sridhar & Lakshminarayana, 1994; Patel et al., 2016

↑ : Increase/higher; ↓ : Lower; → : Leads to



19. Institutes and startups engaged in millet processing

- **Status and startups in millet**

Entrepreneurship development in millet processing refers to the process of enhancing the skills, knowledge, and abilities of individuals (farmers, rural youth or any other person who willing to establish business in millet area) to create and manage millet-based businesses effectively. Entrepreneurship development involves providing aspiring entrepreneurs with the necessary tools, resources, and support to start, grow, and sustain their millet-based ventures successfully. Though this area is specially focussed with business and marketing skills, development of healthy, nutritious millet products is the soul of the entire business. By selecting suitable raw materials and other ingredients, development of healthy millet based products is possible. It is ultimately the products developed, which has key role in sustainability of the millet based start-ups. Presently many millet based start-ups (Table 5) are running in different states of country which are making number of healthy products like Millet idli premix, Millet Upma mix, Millet dosa premix Breakfast cereals made from millets such as muesli, granola, and porridge mixes which are further fortified with nuts, seeds, and dried fruits for added nutrition. Millets are also used to make products like snack foods (roasted millet grains, popped millet snacks, and millet-based chips), millet Pasta and noodles (made from millet flour, offering gluten-free options for consumers), millet beverages (like malted drinks, energy drinks, and flavored millet drinks), millet Ready-to-Eat meals and instant mixes made from millets and legumes, millet-based bakery products (such as cookies, biscuits, cakes, and muffins made with millet flour).

Table 13. Millet based startups in India

Brand / Startup	Year of Start	Aim / Inspiration / Focus	Founder(s) / Key Person(s)	Address / Contact / Location (India)
Slurp Farm	2016	To transform children's dietary habits, bringing nutrient-dense ingredients and indigenous grains into kids' food. (Slurp Farm)	Meghana Narayan, Shauravi Malik (and Umang Bhattacharyya as Brand Director) (Slurp Farm)	LGF, NS-15, Mianwali Nagar, Paschim Vihar, West Delhi, Delhi 110087 (Slurp Farm) Also listed as HQ: B11/5, Park Dr, DLF Phase 5, Sector 54, Gurugram (as per JustDial) (JustDial)
Millet AMMA	2017	To change her family's nutritional habits via millet-based food brand	Ruchika Bhuwalka	(No verified address found in public sources)
Eat Millet	2018	To combine health and taste via millet-based foods (shop.nativefoodstore.com)	(Not clearly found)	(No verified address found in public sources)
Phalada Pure & Sure	2018	Offering a range of certified organic food products, including millet-based / "clean" / organic foods	Phalada Agro / branding "Pure & Sure"	Indiranagar, Bangalore — HAL 2nd Stage, Doopanaahalli, Bangalore – 560008 (JustDial)
Native Food Store	2016	Focused on millet-based breakfast / healthy foods; millets and millet products	(Not clearly found)	(No verified address found in public sources)
Troo Good	2018	Millet snack company, combining health and snack appeal (YouTube)	Raju Bhupati (Founder & CEO) (YouTube)	(No verified address found in public sources)



- 1. Millets Mart:** Millets Mart, based in Bangalore, Karnataka, is a startup dedicated to promoting millets and millet-based products. They offer a wide range of millet products such as flour, grains, snacks, and ready-to-cook mixes.
- 2. Organic Mandya:** This startup, located in Mandya, Karnataka, specializes in organic farming and processing of various millet-based products. They work closely with local farmers to promote organic millet cultivation and offer products like millet flour, flakes, and snacks.
- 3. Conscious Food:** Although not exclusively focused on millets, Conscious Food, based in Mumbai, Maharashtra, offers a range of organic and natural food products, including millet-based items such as millet flakes, flour, and snacks.
- 4. The Millet Table:** Based in Hyderabad, Telangana, The Millet Table is a startup that produces and sells a variety of millet-based products, including snacks, breakfast cereals, and ready-to-cook mixes.
- 5. Organic Tattva:** Organic Tattva is a brand owned by Phalada Agro Research Foundations Pvt Ltd, based in Bangalore, Karnataka. They offer a wide range of organic food products, including millet-based items such as flour, flakes, and snacks.
- 6. Sresta Natural Bioproducts Pvt Ltd (24 Mantra Organic):** 24 Mantra Organic, headquartered in Hyderabad, Telangana, is one of India's leading organic food companies. They produce a range of millet-based products, including millet flour, flakes, and ready-to-eat snacks.
- 7. Ecozen Solutions:** While not exclusively focused on millets, Ecozen Solutions, based in Pune, Maharashtra, develops technology solutions for the agricultural sector. They offer cold storage solutions that can be used for storing millets and other perishable produce.
- 8. NutriKarma:** NutriKarma, based in Bangalore, Karnataka, is a startup that produces millet-based snacks and breakfast cereals. They focus on creating healthy and sustainable food options using locally sourced millets.



Table 14. List of millet startups
14a. Millet Startups Promoted by Agri Business Incubator, University of Agricultural Sciences, Raichur

SN	Name of the Startup with Address	Range of Millet Products
1	M/s MR. MILLETS Mr. Davalappa Sy. No. 116/A, Bharathi Colony, Opp to University of Agricultural Sciences, Lingasugur Road, Raichur – 584102 Mob: 7259620814, 9008190763 Email: mrmmillet19@gmail.com	• Millet enriched jaggery bread, • Millet cookies • Millet rusk • Millet muffins • Millet cakes • Millet flour • Millet rava
2	M/s FARM BANDI Mrs. Jayalakshmi K VC/O Dhananjaya Compound, Behind TVS Showroom, Goshala Road, Raichur – 584101, Karnataka Mob: 9964215750 Email: princesbharatha@gmail.com	• Millet extruded Kurkure • Millet and jaggery based laddoos • Millet milk kulfu
3	M/s SRI ABHARANA Sri. Abharana Millets Food Factory At: Karegudda, Tq: Manvi – 584123, Dist: Raichur, Karnataka Mob: 8123589274 Email: sriabharanamilletfood@gmail.com	• Millet health mix powder
4	M/s ABHIVRUDHI HERBELS PVT. LTD. Mr. G G Kulkarni 302, Kishore Residency, Rajamma Layout, Uttarahalli, Bangalore – 560061 Mob: 9448041257 Email: abhivrudhiherbs23@gmail.com	• Millet Stevia cookies • Millet salt cookies • Millet masala cookies
5	M/s BHASAN ENTERPRISES Mr. Shashidhar Bhasan Plot No. 9P3 Part – 1, Kolhar Industrial Area Phase – II, KIADB, Bidar – 585401 Mob: 9535137177, 9945306501 Email: sgbhasan2069@gmail.com	• Multi millet health mix powder
6	M/s RUDVI FOOD PRODUCTS Mrs. Jayalaxmi C/o Timmanagouda Malipatil, At. Post Chikalparvi, Tq: Manvi – 584123, Dist: Raichur, Karnataka Mob: 7975905506 Email: jayalaxmitimmanagouda@gmail.com	• Instant Jowar Upma • Millet Madali • Foxtail millet nippattu • Millet vegetable rusk
7	M/s AMMAS TASTE Mrs. Anuradha C/O S D Bharatha, PH2, Mythri Oppulance, 6th A Main, G M Palya, Bangalore – 75 Mob: 7348987127 Email: ammastaste21@gmail.com	• Healthy malt • Oil-free snacks: – Millet Chakli – Millet Nippattu – Millet Sev
8	M/s Diwaker Gouda Honnali Village, Bellary Taluq Mob: 9480398989	• Millet dosa mix • Millet idli mix
9	M/s SAMPURNA AHARANETRA Enterprises, Mahanteshwara Nagar, Karchiganur, Siruguppa Tq, Bellary Dist – 583121 Mob: 9844411856	• Multigrain malt

Table 14b. Millet Startups Promoted by Centre of Excellence for Nutri-Cereals (Small Millets), UAS, GKVK, Bengaluru

SN	Name of the Startup with Address	Range of Millet Products
1	M/s Shreeka Life Style (OPC) Pvt. Ltd, No.642, 8th 'B' Main, 2nd Block, Basaveshwaranagar, Bangalore – 560079 Mob: 9844801544	• Millet Pulav • Millet Dosa Mix • Millet Ghee Rice • Ragi Instant Malt
2	M/s Future Luminous Foods Lifestyle Pvt. Ltd, No.17, 17th Cross, Bhuvaneshwari Nagar, Post. HA. F, Hebbal, Bangalore, Karnataka – 560024, Email: gcsudhir@gmail.com	• Under progress: – Kodo Millet flakes – Kodo Millet enriched flakes
3	M/s Vedhik Enterprises Gundamanatta (V), Chaldiganahalli (P), Srinivaspur (Tq), Kolar (Dist) – 563126 Mob:8861822142 Email: manojk7888@gmail.com	• All types of Millets • Millets Powder • Instant Ready Mixes • Millet Papads
4	M/s Desi Viva Foods, LLP#152/B, Jigani Link Road, 4 th Phase, Bommasandra Industrial Area, Bangalore – 560099 Email: bsjagadish@desivivafoods.in	• Roasted Makhana • Millet Veg Pulav • Millet Poha • Millet Bistibelebath Mix • Millet Upma Mix • Millet Pongal Mix
5	M/s Desi OrganicDavanagere & Chitradurga Districts Regional Cooperative Organic Farmers Associations Federation Ltd, Email: desiorganic@gmail.com	• All types of Millets • Millet Poha

Table 14c. Millet Startups Promoted by Nutrihub – IIMR

SN	Name of the Company	E-Mail	Contact	Address
1	M/s Orgolite Agro Private Limited	madhusudan612@gmail.com / n.manu3@gmail.com	7204504659 / 8904325567	Fincube-Co28, Ambika Square, No: A53, 1, Kamdhenu Nagara, B Narayanapura, Bangalore – 560016
2	M/s Rowan Agro Nature Private Limited	umesh.devurkar@gmail.com	9880319926	Ramachandra Niwas, Godbole Mala, Vijayapur – 586101

SN	Name of the Company	E-Mail	Contact	Address
3	M/s Impeccable Innovations Pvt. Ltd.	spotify@impeccableinnovations.com	9611186720	G-07, Lily Block, Vijaya Sri Elexor, Borewell Road, Whitefield, Bangalore
4	M/s Magasool Agro Private Limited	ajay.tannirkulam@gmail.com	7299997993	AWHO Shopping Complex, Shop 9, Sena Vihar Owners Association, Bangalore
5	M/s Rasvirya Foods Private Limited	preetam@mealtes.com	9989984170	E-119, VM Meadows, Horamavu, Bangalore – 560043
6	M/s DMR Food Products	dmrfoodproducts@gmail.com	6366611126	G-01, Shekhar Residency, Electronic City Phase 2, Bangalore – 560100
7	M/s Urban Monk Private Limited	ajay@milletamma.com	9880022773 / 9880022774	No. 12, Kempapura Main Road, Bellandur, Bangalore – 560037
8	M/s Nutrisukan Biotech Private Limited	sukanya@nutrisukan.com	9686890414	5 Survey, 3/3 SRB Palya, Yentagana Halli, Nelamangala
9	M/s Green and Good Products Private Limited	aparna.bhatnagar@gmail.com	9414826322	3rd Floor, Agasthya Complex, S-4/63, Shettihalli Main Road, Jalahalli West, Bangalore
10	M/s Jeevitha Enterprises	dilipsira222@gmail.com	7795397179	No.1, Yaragunte, Kasaba, Ratnasandra, Tumkur – 572137
11	M/s Rowan Agro Nature Private Limited	umesh.devurkar@agriculture.in	9880319926	KIADB, Plot No 69, Block-II, Aliabad Industrial Area
12	M/s Swad Nandini Pickles	balbhimbazole@gmail.com	9561793999	Plot No – 38, KIADB, Autonagar, Naubad, Bidar
13	M/s Impeccable Innovations Pvt Ltd	spotify@impeccableinnovations.com	9611186720	G-07, Lily Block, Vijaya Sri Elixir, Borewell Road, Whitefield
14	M/s Ajji's	ajjismillets@gmail.com	9590689444	13, 8th Cross, Sudhamanagar, Opp. Shantinagar BMTC, Bangalore
15	M/s Magasool Agro Pvt Ltd	ajay.tannirkulam@gmail.com	7823993457 / 9445392454	AWHO Shopping Complex, Shop 9, Sena Vihar Owners Association
16	M/s Swaadika Health Staples Pvt Ltd	4swaadika@gmail.com	7349410305	20, GHBCS Layout, 11th Cross, 1st Block, Basaveshwara Nagar, Bangalore

SN	Name of the Company	E-Mail	Contact	Address
17	M/s Sirivrudhi	shivuagrico@gmail.com	8431212910	S/o Karnabassanagouda, Byadgi, Anur, Bisalalli
18	M/s Orgolite Agro Pvt Ltd	n.manu3@gmail.com	8904325567	Fincube – C028, Ambika Square, No A53, 1, Kamdhenu Nagara, B Narayanapura
19	M/s Rasvirrya Foods Private Limited	preetam@mealets.com	9989984170	E119, VM Meadows, Horamavu Main Road, Horamavu, Bangalore – 560043
20	M/s Spatika Agro and Herbs	spatikaagroherbals2016@gmail.com	9986253411	147, 1st Floor, Tharabanahalli, Chikkajala Post, Yelahanka Taluk, Bengaluru – 562157

Table 14d. Millet Startups Promoted by ICRISAT

SN	Name of the Startup	Address	Contact Details
1	M/s Fresco grains Pvt Ltd	Frescogreens Private Limited, Sree Laxmi Nagar, Manikonda, Hyderabad – 500089	frescoprivatelimited@gmail.com
2	M/s LivTru Food Pvt Ltd	Plot No:101, Sector-4, MVP Colony, Visakhapatnam – 530017, Andhra Pradesh	akileshreddy1199@gmail.com
3	M/s Boutique Foods LLP	B 706, Sandy Flama, Dosti Flamings, China Mill Compound, TJ Road, Parel Sewree, Mumbai – 400015	097407 91811 / 9819955002 shilpi@boutiquefoods.in
4	M/s Ashna Paustika LLP	H.No: 797, MIG Phase I, BHEL, R.C. Puram, Hyderabad – 32	vellanki.kalyan@gmail.com
5	M/s Our Food Pvt Ltd	First Floor, Survey No 9, CII Green Building Lane, HITEC City, Kondapur, Telangana – 500084	info@ourfood.co.in +040-48599500 / +91 9014385945
6	Mathesis Engineers Pvt. Ltd.	Plot No. B-35, BHEL-AIE, Ramachandrapuram, Hyderabad – 502032	mathesis@mathesis.co.in 040-23022298 / 23020628

Table 14e. Startups Promoted by NIFTM-T

SN	Name of the Startup with Address	Products Developed
1	M/s. Sri Neevee Natural Foods, 14/1, Jangalnayakan Street, Vallam, Thanjavur, Mob: 9566565522, Email: neevemuruges5522@gmail.com	Millet pasta and millet cookies products
2	M/s. K3 Quality Food, No. 228 RV Nagar, North Street, Orathanadu, Thanjavur-614625, Mob: 8667737420; Email: K3qualityfood@gmail.com	Millet cookies
3	M/s. Cauvery Delta Agro Producer Company Ltd No.33, Mullar Nagar, New Housing Unit, Thanjavur; Mob: 91-4362-226370	Millet pasta and processed millets
4	M/s. Sri Lakshaya Foods; Nallur, Permathur Post, Perambalur Dist; Mob: 9159382543; Email: lakshayanaturalfoods@gmail.com	Millet laddu and millet cookies
5	M/s. Adhisurya Foods; 110, Murugappa Complex, Palakkad Main Road, Pollachi; Mob: 9843016212 / 9786522187; Email: adhisuryafoods@gmail.com	Millet dosa/idli mix and health drink mix
6	M/s. Assai Foods; Mob: 6383965405	Millet products
7	M/s. AARAM Foods No. 95, Kottaimettu street, Bhunagiri (TK), Cuddalore Mob: 9894430968 Email: devan5@yahoo.com	Pasta
8	M/s. Suga Diet Natural Foods, 2/314, Karaikudi Main Road, Karukudi, Thiruvaiyaru Mob: 9443163206 Email: sugadietnaturalfoods@gmail.com	Millet adai mix, porridge mix, Pongal mix, dosa mix, health drink mix, varagu ragi dosa mix, uppuma mix, thinai mavu
9	M/s. Valwill Sudei Farmers Producer Co. Ltd, 2/135-1, Chettiyarthottam, Servampatti, Chinnamanali (P.O.), Namakkal-637410; Mob: 9659644477; Email: sudesifarmersproducercompany@gmail.com	Millet flour, malted millet flour, breakfast mix, popped and puffed millet
10	M/s. Blissree Ambethkar, Street, Oil mill Road, Ariyamangalam, Tiruchirappalli-620010 Mob: 9843083040 / 9003633792 Email: srktrichi@gmail.com / Blisstree.b@yahoo.com	Millet cookies and biscuits
11	M/s. Thanjore Millet Foods Mob: 9443866677	Millet and maize products
12	M/s. Christy Friedgram Industry A2-A3 Sides Industrial Estate, Andipalayam, Tiruchengode, Namakkal Dist Mob: 91-4288-285064 Email: info@christyfoods.in	Millet based products
13	M/s. Green Mark Herbs & Food Products No.7, Periya Omkali, Amman Kil Street, Tiruchengode Mob: 7373681727 Email: greenmarkind@gmail.com	Minor millet health mix & sevai



14	M/s. Universe Food Product; 256, AV Road, Near Neivazhisalai, Annavasal, Pudukkottai-622101 Mob: 9600619171 Email: universefoodproduct@gmail.com	Millet cookies
15	M/s. Amaze Multi Foods, 117, Third Cross, Angalamman Nagar, Murungapakkam, Pondicherry Mob: 8682003474 Email: amazemultifoods@yahoo.com	Parboiled millets
16	M/s. Ammirdham Traditional Foods, 16-H, S.M.I.G., Thiruvalluvar Nagar, Tondiarpet, Chennai-81 Mob: 8778545676 Email: ammirdhamchennai@yahoo.in	Instant health mix, adai/pongal/kali mixes, millet pasta, millet vermicelli
17	M/s. Kalyani Mills, South Indian Grains Corp.3/843D1, Bharathi Nagar, Peramakudi-623707 Mob:9842424521 Email: southindianpml@gmail.com	Semipolished and parboiled millet rice
18	M/s. Araikkal Uzhavar, Urpathiyalar Niruvanam207/44-A Basement, Uthukuli Main Road, Karumarampalayam, Mannarai (Post), Tirupur 641607 Mob: 9578177999 / 9943720495 Email: araikkal@gmail.com	Millet murukku, flour, rava, sweets, rice, dosa mix
19	M/s. H2H / Health to Happiness, Haritha Colony, Iyyerthottam, Trichy Mob: 9159090533 / 9786663033 Email: krmillets@gmail.com	Millet-based breakfast, lunch and sweets
20	M/s. Happy Millets, No.6, Ambedkar Street, Oil mill Road, Ariyamangalam, Trichy-620010 Mob: 9843083040 Email: srkrtrichi@gmail.com	Adai mix, dosa mix, pongal mix, idly mix, health mix, cookies
21	M/s. Sri Mangalambiga Products, 9, Jeevapan Street, Kumbakonam Mob: 9442742905 / 9488937811 Email: saisshivadevi@gmail.com	Millet pasta, rice, flour and flakes
22	M/s. Ekadanta Private Limited, H230, Pariwar Presidency, Bilekahalli, Bengaluru-560076 Mob: 9632647766 / 9952949497 Email: care@fullspoon.in	Ragi pasta, kodo millet pasta, barnyard millet pasta
23	M/s. Thai Masala & Foods, 502, Main Road, Thiruvavur-613702 Mob: 6385420980 Email: infothaimasala@gmail.com	Millet foods
24	M/s. Halo Cap, Halo Cap Millet Hub, Gokulam Colony, No:1 Tolgate, Trichy-621216 Mob: 7904816606 / 9952717851 Email: sales@halocapmillet.com	Ice cream, cookies, cake and wafer
25	M/s. Swadisth Healthy Foods, 207, Perumal Kovil Street, Gandarvakkottai Taluk, Pudukkottai-613301	Millet noodles, millet pasta
26	M/s. Sree Saai Mahaveer Foods, Kanchipuram-631501 Mob: 9790346144 Email: mahaveerfoods@gmail.com	Millet rice variety, laddu, cookies

Table 14g. Millet Farmers Producer Company

SN	Name	Address	Phone no	Email
1.	M/s Visakha Millet Farmers Producer Company Limited	CEO: Mr. R.V. Swamy Naidu Address: Thummapalla Village and Post, Anakapalli Mandal, Visakhapatnam District - 531032 Andhra Pradesh	7382596778 / 9880045728	visakhamilletsfpc@gmail.com
2.	M/s Mahabubnagar Millets Farmer Producer Company Limited	CEO: Mr. G. Ravi kumar Address: T8-36/6, Desayapally, Gandeed, Mahabubnagar - 509337, Telangana	9704036456	ecoclubindia@gmail.com ; sangappa@mill ets.res.in
3.	M/s Green Millet Farmer Producer Company Limited	CEO: Mr. Siddalingesh Sajjan Address: Plot No-50, KIADB, Bagalkot- 587103 Karnataka	7760760841 / 9880045728	futuregreens.org@gmail.com or sangappa@mill ets.res.in
4.	M/s Ananta Aadarana Millet Farmers Producer Company Limited	CEO: Ms. Shaila Kumari Address: Shop No: 94, 1st Floor, Aadharana Construction, Municipal Complex, Near Tower Clock, Subhash road, Ananthpur - 534005, Andhra Pradesh	9866345715 / 9017530999	rama.adarana@gmail.com ; sangappa@mill ets.res.in
5.	M/s Halchalit Mahila Kisan Women Farmers Producer Company Limited	CEO: Mr. Sameer Kumar Address: C/o Gulab Singh Thakur, Bharra Tola, Devalpu Teh. Samnapur, Dindori- 481778 Madhya Pradesh	9752771389 / 9535313111	sameerkumar@pradan.net ; sangappa@mill ets.res.in
6.	M/s Koppal Millets Farmer Producer Company Limited	CEO: Mr. Uday Kumar Kollimath Address: Prasanna Nilaya Bannikatti Area Gadag road, Koppal - 583231, Karnataka	7411696057 / 9880045728	koppalmilletsgmail.com / sangappa@mill ets.res.in



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14.	M/s Shorapur Taluka Millets farmers Producer Company	CEO: Mr. Markandayya. Jeeva Address: H No E 34, Main Road, Shellagi Shorapur, Bidar 585224, Karnataka	7019503428	shorapurpc@gmail.com ; sangappa@mill ets.res.in
15.	M/s Jewargi Taluka Millets Farmers Producer Company Limited	CEO: Mr. Sharanabasappa Nagavi Address: E 24, Near Bazar Nelogi Gulbarga – 585310, Karnataka	9148239873 ; 9880045728	snagavi459@gmail.com ; sangappa@mill ets.res.in
16.	M/s Bettada Basaveshwara Farmer Producer Company Limited	CEO: Mr. Shivappa Address: C/o Harishchandra Gouda P, H.NO. 2/52, Jakkaladinni, Sirwar Mandal Raichur – 584129, Karnataka	9535929685 ; 9880045728	sangappa@mill ets.res.in
17.	M/s Annigeri Taluka Farmer Producer Company Limited	CEO: Mr. Umesh Hiremath Address: H. NO: 1 151 Jadageri Oni Annigeri, Dharwad – 582201, Karnataka	9742543946 / 9880045728	anniogerifpc@gmail.com, mail.com,
18.	M/s Chitguppa Taluka Farmers Producer Company Limited	CEO: Mr. Sunil S Ramachandra Address: H. No. 4146, At Post Kodambal, Tq Chitguppa, Bidar - 585412, Karnataka	8080633638 / 9880045728	jchitguppafpc@gmail.com ; sangappa@mill ets.res.in
19.	M/s Navalagund Taluka Raita mitra Farmer Producer Company Limited	CEO: Mr. Kirankumar B Hallad Address: H. No. 15001, Hallad, Hallad Oni, At: Shanwad, Dharwad – 582208, Karnataka	6363628050 / 9535313111	kirahallad92gm ail.com ; sangappa@mill ets.res.in
20.	M/s Alnavar Taluka Farmers Producer Company Limited	CEO: Ms. Priya Kivadasannavar Address: 001 A, Dusgekar Farm House Near Jack Well Alnavar, Dharwad-581103, Karnataka	9060202709 / 9880045728	sangappa@mill ets.res.in
21.	M/s Dharwad Taluka Farmer Producer Company Limited	CEO: Ashwin Bhusare Address: 116, Near Sali Jergiwad, Dharwad, Karnataka	8147816718 / 9535313111	sangappa@mill ets.res.in
22.	M/s Kanakagiri Raita Shakthi Millets Producer Company	CEO: Mrs. Nandini Mali Address: NO 159, Sulekal, Kanakagiri, Koppal - 583283 Karnataka	9535313111 / 6362687554	sangappa@mill ets.res.in

7.	M/s Hulsoor Mahila Kisan Millets Producer Company Limited	CEO: Mr. Ashok Address: H.No 4/102, R/o Near Shivaji Chowk Hulsoor Tq Basavakalyan Bidar - 585416, Karnataka	9535313111	hulsoorfpc@gmail.com ; sangappa@mill ets.res.in
8.	M/s Indi Savayava Hagu Siridhanya Producer Company Limited	CEO: Ms. Preeti Dashavant Address: H No 524 Rural Indi Danashetti Taluka Indi, Bijapur - 586209, Karnataka	6364757255 / 9880045728	fpcindi@gmail.com ; sangappa@mill ets.res.in
9.	M/s Aland Bhootai Millets Farmers Producer Company Limited	CEO: Mr. Babusha Nakoidi Address: H2/3 13 Veerabhadreswar Temple Road, Tadkal, Gulbarga - 585302 Karnataka	9740822708 / 9880045728	alandfpo2021@gmail.com ; sangappa@mill ets.res.in
10.	M/s Nidgundi Sri Hadi Basavannappa Oilseed and Millets Producer Company Limited	CEO: Mr. Ashok Konraddi Address: H No 42 Ground Floor near Basaveshwar Gudi, Mukartiha, Nidgundi, Vijayapur - 586213 Karnataka	7676816703	hadibasava2021@gmail.com ; sangappa@mill ets.res.in
11.	M/s Jamakhandi Oilseed and Millets Producer Company Limited	CEO: Mr. Mallikarjun Bagalkot Address: C/o Teli Narasappa R, Behind Kaluti, Petrol Pump, Mayur Colony Kamakhandi Bagalkot - 587119, Karnataka	9902559169 / 9880045728	mallu.kulah@gmail.com ; sangappa@mill ets.res.in
12.	M/s Mudhol Oilseed and Millets Farmers Producer Company Limited	CEO: Mr. Umesh Rachappa P Address: C/o Mrs. Minakshi L Pujari Ward No 4, Near Ullagaddi stop near hanuman temple Mantur, Bagalkot - 587121 Karnataka	7353112726 / 9880045728	umeshpatagund i2726@gmail.com ; sangappa@mill ets.res.in
13.	M/s Nandi OM Farmers Producer Company Raichur	CEO: Mr. Manu Patil M Address: H. No 36, Nelhal, Raichur, Raichur Karnataka - 584104 Karnataka	8861365848 / 9880045728	manupatil960@gmail.com ; sangappa@mill ets.res.in



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23.	M/s Kayaka Krushi Mitra Farmers Producer Company Limited	CEO: Veeresh N Address: H.No 5 / uu. WARD NO.3 Hiresindogi Koppal Karnataka	9535313111 / 9902792635	sangappa@mill ets.res.in
24.	M/s Kukanuru Dharani Millets Producer Company Limited	CEO: Mr. Raghavendra Address: Renukamma Ground floor, Near Govt. School, Kudrimoti, Koppal – 583237, Karnataka	9901275277	raghavendra.rb g@gmail.com ; sangappa@mill ets.res.in
25.	M/s Amruthavarshini Farmers Producer Company Limited	CEO: Mr. Santosh Address: 05 RRNO-BJ, 05 Megalapete, Tavaragera, Koppal – 583231 Karnataka	9900444733	sangappa@mill ets.res.in
26.	M/s Manyam Deverakadra Farmer Producer Company Limited	CEO: Mr. Srujan Goud Address: H No 4-24, Devarkadara, Mahabubnagar, Telangana, India, 509204	7036623964 / 8096436865	srujangoud202 @gmail.com ; sangappa@mill ets.res.in
27.	M/s Balanagar Farmer Producer Company Limited	CEO: Mr. Giridhar Address: H NO 5-5-44, Balanagar (V M), Mahabubnagar - 509202, Telangana	9398897112 / 9676798079 / 8096436865	balanagarfpo@gmail.com ; sangappa@mill ets.res.in
28.	M/s Lambasingi Tribal Products Farmers Producer Company Limited	CEO: Mr. Sunil Address: 9-43, Rajupakalu, B.D. Pakalu, Vishakhapatnam - 531111, Andhra Pradesh, India	8099999648 / 8096436865	sangappa@mill ets.res.in
29.	M/s Giri Siri Tribal FPO MACS Limited	CEO: Mr. Y. K. Rao Address: Vantalmamidi village, Pederu mandal, Vishakhapatnam, Andhra Pradesh	6304790568 / 8096436865	sangappa@mill ets.res.in
30.	M/s Tekmal Mandal Farmers Producer Co-operative Society	CEO: Mr. Moglaiah Address: 20, Tekmal Village and mandal, Tekmal, Medak - 502302, Telangana	9492306230 / 8096436865	tekmalfpo@gm ail.com ; rsangappa@mil lets.res.in



31.	M/s Yeldurthy Mandal Farmers Producer Co-operative Society	CEO: Mr. Venkata Ramana Address: H.No.2-21, Patelgalli, Yeldurthy, Medak - 502255, Telangana	9492305763 / 8096436865	yeldurthyfpo1@gmail.com ; sangappa@millets.res.in
32.	M/s. Inner Being Wellness Pvt Ltd	Founder & CEO Mr. C.S. Jadhav Address: Inner Being Wellness Pvt Ltd, Punjagutta, Hyderabad	9849489799	jadhav@innerbeing.com; info@innerbeing.com
33.	M/s. Fountainhead Foods Pvt Ltd	Founder & CEO Mr. Sai Krishna Popur Address: Plot no A-31/2, IDA Nacharam, Hyderabad	9494470644	sai@healthsutra.in
34.	M/s. Gobhaarati Agro Industries and Services Pvt Ltd	Founder Director Mr. Sridhar Murthy Iriventi Address: Vignanpuri, OU Road, Hyderabad	9393301678	sridhar.iriventi@gmail.com ; ism@GoBhaarti.com
35.	M/s. Ahobilam Foods Pvt Ltd	Founder Ms. Hemamalini Pothuri Address: Arunodaya Colony, Madhapur, Hyderabad.	9581009911	vatsavavarma@gmail.com
36.	M/s. M For Millet Foods Pvt Ltd	Founder & CEO Troo Good Mr. Raju Bhupati Address: No. 1-98/9/3/46 & 47, Plot No 15 & 16 Silicon Valley, Madhapur, Hyderabad, Telangana	9581009911	raju@mfarmillets.com
37.	M/s. Ridgeland Industries Pvt Ltd	Founder Ms. Dabbugunta Madhavi Address: ALEAP Industrial Estate, Pragathi Nagar, Opp JNTU, Kukatpally, Hyderabad	9676288476	indmillets@gmail.com
38.	M/s. Kamakshi Foods	Founder Mr. Raghu & Mrs. Lasya Priya Address: Survey no 817/1, Sagar Road, Turkayamjal, Hayathnagar Mandal Hyderabad -501510	924622785, 7842993299	info@vrsfoods.com
39.	M/s. Perfura Technologies India Pvt Ltd	Founder Mr. Udhay Gopal Address: 7, Maruthamalai Gounder Layout, Ramakrishnapuram, Ganapathy, Coimbatore-641006, Tamilnadu, India	9894930009, 9894800009	sales@perfuratech.com info@perfuratech.com
40.	M/s. Adithi Millets	Founder Ms. Mamatha KM, Address: 51/1040B1 UP, Seetharam Nagar, Kurnool, AP	7386874239	adithi.millets@gmail.com



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41.	M/s. Boinpallys Agro Food Products	Director Mr. B. Shashidhar Rao Address: Himayatnagar, Hyderguda, Hyderabad, Telangana	9490976795 / 9490864795	boinpallysagrofood@gmail.com ;director@boinpallys.com
42.	M/s. eFresh Healthy Foods Happy Life Pvt. Ltd.	Founder Mr. Srihari Kotela Address: Indraprasth, 8-2-681/7, 4 th Floor, Road No.12, Banjara Hills Hyderabad - 500034	9848034740	srihari@efreshglobal.com
43.	M/s. Nutrisnax	Founder Mr. Rohit Didige Address: Plot No. A-28/1/10/A/BIDA Nacharam, Hyderabad-76	9160443243	rohitdidige@gmail.com
44.	M/s. Borne Technologies Private Limited	Founder Mrs. Subalakshmi Sankaranarayanan, Address: 5/153/5 Poolakkadu, Thottam Rd, Arasur, Tamil Nadu 641407	7506781045	director.borne@gmail.com
45.	M/s. DMR Food Products	Founder Mr. Mahipal Reddy Address: G-01 Shekar Residency, Near Daadys Elixir, E-City Phase-2, Bangalore, Karnataka-560100	6366611126	dmrfoodproducts@gmail.com
46.	M/s. SB Home Appliances	Founder Mr. Y. Suresh Babu Address: B Home Appliances, Shri Chaitanya Junior Kalasala Building, Opposite Hotel TajMahal, beside Narayanguda Flyover, Hyderabad	9440095707	sbhomeappliances707@gmail.com
47.	M/s. SS Bhavani Foods	Founder Mr. Veera Shetty Biradarm Address: Gangapur Village, Sangareddy; Dist, Telangana	9490523302	ssbhavanifoods3312@gmail.com
48.	M/s. Centre for Tech. and Develop. Society	Founder Dr. Kalpana Arora Address: Village Sahespur, Dehradun, Uttarakhand	9958200572	ctd.delhi@gmail.com
49.	M/s. Rowan Agro Nature Pvt Ltd	Founder Dr. Umesh Devurker Address: KIADB, Plot No 69, Block-II. Aliabad, Industrial Area, Vijayapura, Karnataka	9880319926	umesh.devurkar@agronature.in



50.	M/s. H2M Foods and Beverages	Founder Mr. Santosh Khemundu Address: Plot no 805/1970, Ward-22, Raghunathpur, Kaifulia, Baripada, Mayurbhanj, Odisha,	7008496361	skhemundu080792@gmail.com
51.	M/s. Doctor Millets Agro Industries Pvt. Ltd.	Founder Dr. Manikyam Gupta Address: Work shop 8-28/9/2, Sitaram Nagar Colony North kamala Nagar, Near EC Complex, Kusaiguda, Hyderabad-500062	9000501999	milletsworld@gmail.com
52.	M/s. Boutique Foods	Founder Ms. Shilpi Bhandari Address: Elecia, Dosti Imperia, Chitalsar, Ghodbander Road, Manpada West, Thane-400610	98199 55002, 9821347292	shilpi@boutiquefoods.in ; purnima@boutiquefoods.in
53.	M/s. Coastal Foods	Founder Mr. T. Siva Kumar Address: Coastal Foods, 11-495, Behind HPCL Petrol Bunk, Pedavadlapudi (V), Guntur (Dt), Andhra Pradesh 522302	9542115555	siva@eatmillet.in
54.	M/s. Frescogreens Private Limited	Founders Ms. Manvitha Reddy Address: 91 Springboard-Hitech Kondapur, Mytri Square, 2-4/1/11, 6/2, Gachibowli, Miyapur Rd, Kondapur, Hyderabad, Telangana 500084	9949148789	manvitha@homecrop.in
55.	M/s. Sivamshu Associates	Mr. B. Ujwal Mallikarjun and Ms. B. Spoorthi Address: Flat No. 17, Annapoorna Apartments, Opp: Venkateshwara Textiles, Ramnagar, Hyderabad - 500020.	9121021451	spoorthi.bavandla@gmail.com
56.	M/s. Swad Nandini Pickles	Founder Mr. Baibhim Basole Address: Plot no - 38, KIADB, Autonagar, Naubad, Bidar, Karnataka 585402	9561793999	balbhimbazole@gmail.com
57.	M/s. Sattva Life Foods Private Limited	Founder Ms. Shruti Ajmera Reddy Address: Plot No.40, MP MLA Colony, Road No.10C, Jubilee Hills, Hyderabad- 500033	9381532067	hello@hapup.in
58.	M/s. Impeccable Innovations Pvt Ltd.	Founders Mr. Arnab Guha Address: G-07, Lily Block, VijayaSri Elixir, Borewell Rd, Whitefield, Bengaluru, Karnataka	9611186720 / 7760856999	sportify@impeccableinnovations.com



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59.	M/s. Indian Sisters Kitchen	Founder Mr. Harshvardhan Khanduri Address: 14/1/3, Village Chhalera Bangar, Sector - 44, Noida, District Gautam Budha Nagar (UP)	9911904055	indian.sis.kitchen@gmail.com
60.	M/s. Lippia Private Limited	Founder and Managing Director Mrs. Haritha Pothi Reddy Address: Flat No: 203, Bhavyas Krishna Residency, Nagarjuna Nagar, Hyderabad.	9666000888 / 9618000888	lippiafoods@gmail.com
61.	M/s. Nutrimagic	Founder Mr. D. Sree hari Address: FS Endocrine Diabetes Center Saidabad, Hyderabad	9849696802, 9110553877	info@nutrimagic.in
62.	M/s. Nutriage Nutritional Pvt Ltd	Founder Mr. Sai Krishna Samala Address: H-No: 2-41/A, Sai Nagar, Chaitanyapuri, Dilsukhnagar, Hyderabad	9966773339	saibabblu999@gmail.com
63.	M/s. VSP Nutribite	Founder Ms. G. Sunitha Address: Mailarddevpally, Brundavan Colony, Rajendranagar, Rangareddy, 500030	7702708435	prasadsunitha793@gmail.com
64.	M/s. GVL Foods	Founder Mr. L. Gayathrinath Address: 11-1-890/4 and 5/A, Seetharambagh, Mallepally, Hyderabad-500001	-	laskarajay9@gmail.com
65.	M/s. Aarogya Bakery	Managing Partner Mr. Naveen Kumar Address: H.No: 10-1-16/1, Shivaji Nagar, Pedda Bazar, Nizamabad-503001	9032399828	arnutritiousfoods@gmail.com
66.	M/s. NFP Tech Services Private Limited	Founder Mr. Suryaprakash Reddy Address: H-No 3-38, Nidjinta, MADDUR, Mahbubnagar (Dist.), Telangana-50941	9177790371 / 7299997993	suryaprakash2225@gmail.com
67.	M/s. Good Nature Organics Pvt Ltd	Founder Mr. Naveen Kumar Dooda Address: Flat No. 1608, Tower 2, Swanlake Apartments, Kukatpally, Lanmark: Opp. Metro Wholesale, Kukatpally.	7702358882	naveenkumardooda@gmail.com
68.	M/s. Mitra Organic	Founder Mr. K. Ramesh Address: H.No 9-6/5, Yapadinne (V), Ileeja (M),	9704855185	rms.k69@gmail.com



	Solutions	Jogulamba Gadwal (Dist), Telangana -509135		
69.	M/s. Millet Mantra Pvt Ltd	Founder Ms. Poojitha B Address: 11-4-322/14/A/2, Chilkaiguda, Near Wesley Church Secunderabad 500061	9052554284	sl.poojitha6@gmail.com
70.	M/s. Swedha Food Processing Unit	Founder Mr. Varkala Dhanunjay Address: H.No. 2-39, Tarnikal Village, Kalwakurthy Mandal, Nagarkurnool District. State: Telangana	8374573172 / 9398840816	dhanunjay04@gmail.com
71.	M/s. Vedas Natural Products Pvt Ltd	Founder Ms. Vemulapati Mrudula Address: Street No 2, Shanthi Nagar, Opp: Community Park, Masab tank, Hyderabad.	9490192119	vemulapati.mrudula@gmail.com
72.	M/s. Eat Rightly Services Pvt Ltd	Founder Mr. K. Sri Charan Reddy Address: H.No:31-3-1553, Road. No. 06, Surendrapuri Colony, Waddepally, Warangal, Telangana, 506370	7036986529	sricharan.kotha@gmail.com
73.	M/s. Pachamyannam	Founder Ms. S. Sunitha Address: 13-6-251/5/42/C, Landmark Mohini Function hall, Karwan, Hyderabad-500006	7382559427	sun38255@gmail.com
74.	M/s. Rajira Foods Private Limited	Founder Mr. Sai Ram Munigala Address: 115, Vasanthnagar Colony, Kukatapally, Hyderabad - 500085 State: Telangana	9494730505	sairam@munigala.com
75.	M/s. JP Organics	Founder Mr. R. Pavan Kumar Address: 14-125, St.No.3, Sai Nagar Colony, Balapur, Saroornagar (M), Ranga Reddy	9963716790 / 8367777970	mailjporganics@gmail.com
76.	M/s. Millets and More	Founder Ms. Arigay Ramya Address: Flat No. 319/320, Maturu Apartments, H. No:10-2-10, A C Guards, Hyderabad 500004, State: Telangana	9966009303	arigayramya@gmail.com
77.	M/s. Amarjit Nutriment	Mr. Ajit Kumar Sabath Address: Laxmi Nagar 4 th Lane, Near Kumbharapalli, Ankuli, Berhampur; Odisha	8882318105	ajitsabat111@gmail.com
78.	M/s. Milleys	Mr. Amit Yadav, Vill - Nangla Rudh, P.O. - kankar Dopa, Teh. - Behror, Dist - Rajasthan-301701	8222819180	amityadav1630659@gmail.com



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79.	M/s. Ancient Foods	Founder Ms. D. Laxmi Haritha Bhavani Address: H.No-11-14-100, R. No-5, JP Gardens, Haripuri Colony, Saroor nagar (Mandal), Hyderabad, Ranga Reddy Dist., Telangana-500035	9963428689	bhavani.dlh@gmail.com
80.	M/s. Sri Avani Agro and Foods Products	Founder Mr. Chandhra Shekar Address: 1-13, Malkapur, Koilkonda, Mahabubnagar	8142082047	kkreddy0333@gmail.com
81.	M/s. Manna Millets	Founder and CEO Mr. China Nagaraju Address: Plot No. 11/a, Raghavendra Colony, Hatathnagar, Ranagareddy, Hyderabad, Telangana.	9640403563	nagraj.raj533@gmail.com
82.	M/s. Healthy Millets	Founder Mr. Dattertherya Address: 2-68, Naladalapur, V. V. Palem, Prakasam District A.P., Pin code: 523113	8089747611	dattu111kandukuri@gmail.com
83.	M/s. Nutrify ^{U8} OPC Pvt Ltd	Founder Dr. Shilpa Tejavath Address: Visakhapatnam, Andhra Pradesh	7702550715	drshilpathejavath@gmail.com
84.	M/s. Good Life Foods	Founder & CEO Ms. Shravani Kandikanti Address: Hyderabad, Telangana	9885788893	shravanikandikanthi92@gmail.com
85.	M/s. Tasty Tribe Pvt Ltd	Founder Ms. Nupur Jha Address: 123 A Greenwood City A Block Sector 45, Haryana 122002	9223287725	nupurjha@gmail.com
86.	M/s. Wonder Eats	Founder and CEO Ms. Hemalatha Address: Flat No. S-4, Shreeji Darshan Building, Haveli, Curti, Ponda, Goa - 403401	9420688701 / 9021934132	sohamg555@gmail.com
87.	M/s. Ancient Foods Pvt Ltd	Founder Mr. Jagan Mohan Thota Address: Plot No:82, H.No: 8-30, Sai Srinivasa Hills, Bandlaguda, Nagole, Hyderabad - 500068	8600300663	mohan.jagan662@gmail.com
88.	M/s. Reconnect M	Founder Mr. Kranthi Kumar Address: 3-1 Madanapuram, Wanaparthy-	9000500778	kranthikumarreddy333@gmail.com

89.	M/s. S.M. Millet Products	Founder Ms. Samanthakaman Address: H.No :4-38/1, Near Elite Sports Hub, J.P. Nagar, Miyapur, Hyderabad-49	8247883628	samanthakama ninelluri@gmail.com
90.	M/s. Supr kjoke	Founder Ms. B. Nagarathnam Address: D.No 1-7-1005, VMR Krishna Residency, Flat No. 308, Hunter Road, Hanumakonda, Warangal, Telangana	9618983849 / 9966851079	srisairathna27 @gmail.com
91.	M/s. Pardha Millets	Founder Mr. Pothuraju Ravi Chandhra Address: 1-63, Kandrika Village, Phirangipuram Md, Guntur District	9398795587	ravichandra.pot huraju@gmail.com
92.	M/s. Sri Sai Balaji Foods	Mr. C. Raghunatha Reddy Address: Utakur village, Anantapur district, Andhra Pradesh	8099266166	chintaraghunat hareddy@gmail.com; goodlifeproduct@gmail.com
93.	M/s. Millet Breakfast Pvt Ltd	Founder Mr. Rahul Kumar Singh Address: Plot No. 89, New Colony Janakpur, Wazidpur, Rmnagar, Varanasi, Uttar Pradesh, 221008	7388692354	milletbreak@gmail.com
94.	M/s. Elite Nutri	Founder Mr. Rahul Vadlakonda Address: Flat No: 104, SRK Heavens, Gandhi Nagar, Hyderabad. 500080	6301477893	vadlakondarahu l@zoho.com
95.	M/s. Grain Factory	Founder Ms. Swathi Paturi Address: 7-20, Near Hosanna Mandir, Nuzvid Road, Hanuman Junction, Andhra Pradesh-521105	6302179428	swathi.paturi24 @gmail.com
96.	M/s. Rashmi Millet Foods	Founder Mrs. Aruna Vemula Address: Plot No.38, SM Avenue, Vemula Nilayam, Beside Saraswathi Vidyapetam, Bandlaguda Jagir, Hyderabad -500086	7989295427	vemulaaruna81 @gmail.com
97.	M/s. Rainbow Enterprises	Founder Ms. Razia Begum Address: H.No : 1-11-293/97/1, Bhagavanthapur, Hyderabad 500016	9391207441	raziabegum786 shaik@gmail.com



98.	M/s. Thammu Foods	Founder & CEO Mr. Udaya Bhaskar Address: Opp Degree College Jangareddigudem Road Buttayagudem West Godavari Dist State: Andhra Pradesh PIN: 534448	961855967	tammufoods@gmail.com
99.	M/s. Maitri Nutra Foods	Founder & CEO Mr. Uday Kumar Kollimath Address: 219, 2 nd Main, 5 th Cross, KHB Colony, Basveshwaranagar, Bangalore, 560079.	7411696057	agribuzzindia@gmail.com
100.	M/s. Sai Sustainable Agro	Founder Mr. Jitendra Kumar Sinha Address: 601, Yash Apartment, Plot-16, Sector-27, Kharghar, Navi Mumbai – 410210	9967343996	jitendraksinha@hotmail.com
101.	M/s. Smart Foods	Co-Founder, Ms. Krishnaa Kantthawala Address: 504, C-Wing, Nancy Towers, Wanowrie, Pune - 411040	9284638220	krishnaamysmartfoods@gmail.com
102.	M/s. Avinashh	Founder Mr. Busi Pragjanand Address: H. No. 1-105-12, Plot No. 26, Sector-8, MVP Colony, Visakhapatnam - 530017, Andhra Pradesh	9052427070	avinashhglobal@gmail.com
103.	M/s. Avanni Organics	Founder Mr. Ashok kumar Kommuri Address: T. Valamavari palli, Vempalli, Kadapa – 516350, Andhra Pradesh	9989464513	ashok.deny@gmail.com
104.	M/s. Chowdeswari Traders	Founder Mr. Varanasi Srinivas Address: SF-2, KVR Royal, Above Spencer's, 100 ft Ring Road, Near PSR School Vizianagaram – 535002	9676108458	varanasistrinivas766@gmail.com
105.	M/s. DOS and Company	Founder Mr. Aman Sharma Address: 83 Chitrha Gupt Nagar, Impliphatik Jaipur, Rajasthan	9799999067	amansharmados@gmail.com
106.	M/s. Millet Marvels	Cardiologist & Film Actor Dr. Bharatha Reddy Address: Wonderful World, H NO 10-5/26, SY. NO.163, Villa NO 27A, Rajendranagar, Hyderabad	9000929999	ambharathreddy@gmail.com



107.	M/s. Famnutra	Founder Mr. G. Sailesh Address: 76-8/1-12, Lalithanagar, Bhavanipuram, Vijayawada, Andhra Pradesh.	9985614945	famnutra@gmail.com
108.	M/s. Malts and Millets	Managing Partner Mr. Yedukondalu Badeti Address: Malts and Millets Enterprise, Khammam, Telangana.	9701554477	ybadeti@gmail.com
109.	M/s. Magasool Agro Pvt Ltd	Founder Dr. Ajay Tannirkulam Address: 312, Ryan Shinar Apartments, 6th A Main Road, HRBR Layout, 2nd Block, KalyanNagar, Bangalore – 560043	7823993457	ajay.tannirkulam@gmail.com
110.	M/s. Swaadika Health Staples Private Limited	Founder Mr. V K Srinivasan Address: A 001 Garudadri Springs, Nanjappa Layout, JC Industrial Area, Yelachenahalli, Bangalore 560062	7349410305	4swaadika@gmail.com
111.	M/s. Tasty Leaf	Founder Mr. Gunasekhar Kakularam Address: No. 20-48-58-402, Ground Floor, Tirumala Bypass Road, Sivajyothi Nagar, Tirupati – 517502, Chittoor (Dist), Andhra Pradesh	9625462927	sekhar.k@tastyleaf.in
112.	M/s. Millet Chief	Founder Mr. Shyam Babu Address: 7-80/37, Tirumala Enclave, Phase 2, Near Sai Siddhartha High School, Dhammaiguda, Medchal District, Hyderabad - 500 083, Telangana	8978488008	milletchef@gmail.com
113.	M/s. InnovEAT	Founder Mr. Sandeep B Address: C503 , Janhavi Building, Swapnil Trisha Appts, Buty Layout Laxmi Nagar, Nagpur 440022.	8806283850	sandeep@innoveat.in
114.	M/s. Nutri Mantra	Founder Mr. Vamsi Kothamasu Address: Nutri Mantra, Rd2, Green Hills Colony, Hyderabad 500035, Telangana	9885810999	vamsi.kothamasu@gmail.com
115.	M/s. My Millets	Founder Ms. Sharon Pradeep Address: Plot 11, H.No. 12-7-2/14, New Mettuguda, Secunderabad 500017, Telangana	9966212211	sharoks.454@gmail.com



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116.	M/s. Kamakshi Fresh	Founder & CEO Mr. Vijaya kumar Mukku Address: VSS Nandadeep Apatments, Flot No.204, Suchitra Main Road, Hyderabad-500 055, Telangana	8367555633	vijaykumarmukku7@gmail.com
117.	M/s. Ayusmat	Proprietor/Founder Mr. G. Karthick Vinoth Address: Periya Andavar Kovil Street, Chinnamolapalayam, JAMBAI (TP), Erode, Tamin Nadu.	9943949350	karthickvinoth23@gmail.com
118.	M/s. Taproot Farms Pvt Ltd	Founder and CEO Mr. Gopi Krishna Address: Flat No. 406, S M R Vinay Fountainhead, Hyderabad, Miyapur, Hyderabad	9676783555	care@taprootfarms.in
119.	M/s. The Cornerstone Company	Founder Mr. K. Nageswararao Address: The Cornerstone Company H.No:1-103, Megha Hills, Opp: Ileaf locks Sri Sai Nagar, Madhapur, Hyderabad, Telangana 500081	9640908888, 9642908888	knrao2911@gmail.com
120.	M/s. Prakeerthi Greens	Founder V. Santhi Suneetha Address: D.No.18-7-424, Saibaba Road, Koritipadu, Guntur-522007	9110752521	santhi.suneetha@gmail.com
121.	M/s. Millets Family	CEO & Operations Manager Mr. Madugula Srikanth Reddy Address: 4-27/1Machanapally Jammikunta Karimnagar Telangana 505122	7207655623	srikanthmadugularsd@gmail.com
122.	M/s. Millet Recipes	Founder Mr. Sriramakrishna K Address: 1-68C, Chinthalapadu, Tiruvuru, Panchayithi Office, Chinthalapadu, Krishna Dist, Andhra Pradesh	9550192198	ksreeram10@gmail.com
123.	M/s. Prana Shakti	Founder Ms. Ranjeetha Address: 6-22/3, Sai Nagar Colony, Opp: Old Police Station, Rayadurgham, Golconda, Hyderabad, Telangana – 500008	9032321146	gouabhayam2013@gmail.com
124.	M/s. Natural and Prosperous Agro Pvt Ltd	Founder Mr. Nalluri Naveen Kumar Alapadu Village, Guntur District, Andhra Pradesh	6303948745	nallurinaveenumar02@gmail.com

125.	M/s. Jobara Foods Pvt Ltd	Founder Mr. Shreepad Kulkarni Address: Nagpur, Maharashtra	9284000796	shreepadkulkarni@gmail.com
126.	M/s. Urban Eatts Foods Pvt. Ltd.	Proprietor Ms. Reshma Thakur Address: Hyderabad, Telangana	8333859601	puratanherbals@gmail.com
127.	M/s. EarthyLife	Founder Mr. Pramod Renigunta Address: Flat EG6, Floatilla Apartments, Alkapur, Manikonda, Hyderabad-500089	9701452065	renugunta.pramod@gmail.com
128.	M/s. Foodxpr	Founder and Co-Founder M.E. Praveena Address: 8-2-293/82/B/49, adj. to Road No. 10C, Gayatri Hills, Jubilee Hills, Hyderabad-500033, Telangana	9966773320	order@foodxprs.com
129.	M/s. Pinaki Enterprises	Founder Ms. Megha Namdeo Dubey Address: B 108 Pricanko colony Indore (M.P)-452009	9926043624	megha.namdeo@gmail.com
130.	M/s. Greenblaze Energy Pvt Ltd	Founder & CEO Mr. Kiran Ventrapragada Address: Hyderabad, Telangana	7702277304	kiranventura@gmail.com
131.	M/s. Sri Rathna Nature Oil Mills	Founder S. Saranya Address: 61, North main Road, Sri Ram Nagar, Paruthipattu, Avadi, Kamarajnagar, Tiruvallur, Tamilnadu	7338883892	saranyasasi315@gmail.com



Summary

Millets, often called “Nutri-cereals,” are cultivated in over 131 countries, with India contributing about 38% of global production, amounting to 15.4 Mt from 12.2 million hectares with the productivity of 1.2 t/ha. Major millet-producing states such as Rajasthan (31.3%), Karnataka, Maharashtra, Uttar Pradesh, Haryana, and Gujarat together contribute nearly 98% of India's production. The millets are classified into two categories viz., major (sorghum, pearl millet, and finger millet) and minor (kodo, little, foxtail, barnyard, proso, and browntop millets). Nutritionally, millets contain 6–13% protein, 7–12% dietary fiber, and significant levels of iron (5–15 mg/100 g), calcium (200–350 mg/100 g in ragi), and magnesium (100–150 mg/100 g). It has a low glycemic index (45–55), 0.2–0.5% polyphenols, and is naturally gluten-free, making it suitable for diabetic and gluten-intolerant individuals. Studies show that regular millet consumption reduces blood sugar levels by up to 30%, lowers LDL cholesterol and blood pressure by 10–15%, and helps manage body weight due to its high satiety index. Since 2018, the Government of India has implemented several initiatives to promote millets, including declaring 2018 as the National Year of Millets, launching the Sub-Mission on Nutri-Cereals under NFSM, international year of millets 2023 and establishing the Indian Institute of Millets Research (IIMR) as a Global Centre of Excellence. Under the RKVY–RAFTAAR programme, over 250 start-ups have been incubated with 6.2 crores of funding, while the Production Linked Incentive Scheme for Millet-Based Products (PLISMBP) received 800 crores for 2022–2027. Processing efficiency has improved significantly through technological interventions: cleaning and grading operations achieve 90–95% efficiency, destoning 90–92%, dehulling 80–85%, polishing 82–85%, and milling 90–95%. Machines developed by ICAR-CIAE and IIMR, Hyderabad operate at capacities ranging from 50–300 kg/h, with costs ranging from 0.5 to 2 lakhs. Prominent manufacturers such as AVM Engineering (Salem), Nabitha Engineering Private Limited, Hyderabad, Meet Machines, Indore, India, Shri Viratra Engineering, Jodhpur, Rajasthan, India and DHAN Foundation (Madurai) have contributed to small-scale mechanization of millets. Value addition has expanded across three levels primary (cleaning, grading, dehulling), secondary (milling, roasting, puffing, fermentation), and tertiary (extrusion, baking, ready-to-eat and ready-to-cook products) leading to the rise of over 131 millet-based enterprises such as Slurrrp Farm, Millet Amma, and Troo Good etc. Several novel millet-based products like instant millet daliya, idli and dosa premix, puffed millets added with different flavours, millet-based pizza and millets health drinks/beverages have been the attraction of consumers in the market. Despite challenges like small grain size, tight husk adhesion, and short flour shelf life, modern multi-stage dehullers, vacuum packaging, and fortification have enhanced processing efficiency and sensory appeal. The Government of India fixes MSPs for major millets jowar, bajra, and ragi



(ranging from Rs. 2500 to 4200 per quintal) to ensure farmers' income security, while minor millets still lack central MSP coverage, though some states have introduced benchmark prices to promote their cultivation. With improved mechanization, policy support, and global awareness, India's millet-based food ecosystem is poised to increase domestic consumption by 25% and export revenue by 30% within the next five years, reinforcing its role in climate-resilient, nutrition-secure, and sustainable food systems (APEDA, 2024; IIMR Annual Report, 2023; FAO, 2023; Ministry of Agriculture & Farmers Welfare, 2024).

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