

UTILITY OF COARSE GRAINS AS SUPERFOODS

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Abstract

Based on grain size, coarse grains are divided into two parts. The first coarse grains include jowar and millet. Second, small grains include coarse grains with very small grains like ragi, kangni, kodo, cheena, sawa, kutki, etc. Cultivation of millets has many advantages like drought tolerance, short duration of crop maturity, low cost due to minimum requirement of fertilizers, manures, and disease resistance to fight against pests. These grains can be grown even in less water and barren land and in adverse weather. Salhar, Kang, Jowar, Maize, Madiya, Kutki, Sawa, Kodo, etc. if compared with wheat for protein, fat, mineral content, fiber, carbohydrate, energy calorie, calcium, phosphorus, iron, carotene, folic acid, zinc and amino acid If done with grains like rice, they cannot be underestimated in any way. According to the Gazette of India, on April 13, 2018, millets (jowar, bajra, ragi, etc.) have great potential to contribute to the nutritional security of the country. Thus, millets are not only a storehouse of nutrients, but they are also climate-resilient crops and have wonderful nutritional properties. Thus, present paper deals utility of coarse grain as superfood.

Keywords: Coarse grains; superfoods; millets; ragi; jwar; bajra etc.

Introduction

The government is promoting the cultivation of millets like ragi and jowar at the mission level to achieve nutritional security. Bajra, which is said to be a nutritious grain, is being procured at the support price and is being included under the mid-day meal scheme and the Public Distribution System (PDS). Efforts are being made to promote millet cultivation to achieve nutritional security as the area under cultivation has decreased to 14.72 million hectares in the 2016-17 crop year from 36.9 million hectares in 1965-66 (Kumar *et al.*, 2019).

Efforts are being made to increase the demand for the consumption of coarse grains under the five-year plan to promote crops grown in rain-fed areas to increase the area under millet crops. Efforts are also being made to increase awareness among rural and urban people on the nutritional and health benefits of millets under the program (Agnihotri, 2011).

Not much, just 50 years ago our food culture was completely different. We were people who ate coarse grains. Coarse grains means- Jowar, Bajra, Ragi (Madua), Sawan, Kodon, and similar coarse grains. During the Green Revolution in the 60s, we decorated wheat and rice on our plates and kept coarse grains away from ourselves. We turned away from the grain which we were eating for six and a half thousand years and today the whole world is returning to the same coarse grain. Recently, in a program of the Ministry of AYUSH, Prime Minister Modi also emphasized encouraging farmers the cultivation of coarse grains. PM Modi said, "Today we see that the world has started adopting the food which we left (Fardet *et al.*, 2016).

Coarse grain: India had a tradition of cultivating coarse cereals before the 60s. It is said that our forefathers have been growing millet for thousands of years. In the Indian Hindu tradition, the mention of coarse grains is found in the Yajurveda. Till 50 years ago, there was a lot of production of coarse grains in the hilly areas along with central and south India. According to an estimate, the share of coarse grains in the total food grain production in the country was 40 percent. In the form of coarse grains, grains like Jowar, Bajra, Ragi (Madua), Barley, Kodo, Sama, Bajra, Sawa, and Small grains or Kutki, Kangni and China are included (Kaur *et al.*, 2014).

Region for Named coarse grain: It is called a coarse grain because it does not require much effort in its production. These grains also grow in less water and less fertile land. Compared to paddy and wheat, the consumption of water in the production of coarse grains is very less. There is no need for urea and other chemicals in its cultivation. Therefore it is also better for the environment.

The cultivation of jowar, bajra, and ragi requires 30 percent less water than that of paddy. About 4,000 liters of water is consumed in the production of one kilo of paddy, while nominal water is consumed in the production of coarse grains. Coarse grains grow even in poor soil. These grains do not spoil quickly. They are edible even after 10 to 12 years. Thick rains also tolerate climate change. It is not affected by more or less rain (Luithui *et al.*, 2019).

National Coarse Cereal Day

It will be launched as a celebration in Pune on September 28, after Union Agriculture Minister Radha Mohan Singh formally inaugurated the National Year of Millets. It has been decided to observe 16th November as National Jowar Millets Day.

Indian Institute of Millets Research (IIMR) recently organized a national meeting where stakeholders from public and private sectors discussed and finalized the roadmap for conducting the National Year of Millets. There is a need to increase the demand for value-added products of coarse cereals by 2-3 times. We need to create a sustainable brand for millets products (Rasane *et al.*, 2015).

The National Mission aims to double the production of all crops of the millets family to 31.74 million tonnes. After its launch in Pune, campaigns will be run on national media and social media. Brand ambassadors will be involved to popularize the promotional activities (Lui *et al.*, 2020).

The benefit of coarse grain for health

Coarse grains like jowar, bajra, and ragi are full of nutrition. Ragi is a highly nutritious coarse grain of Indian origin. There is a lot of calcium in it. Ragi contains 344 mg of calcium per 100 grams. Ragi is beneficial for diabetic patients. In the same way, there is an abundant amount of protein in millet. Per 100 grams of millet contains 11.6 grams of protein, 67.5 grams of carbohydrates, 8 milligrams of iron, and 132 milligrams of carotene. Carotene protects our eyes.

Coarse grains require less labor and less water to grow (Lui *et al.*, 2020). That's why the government is promoting them. Keeping this in mind, the government declared 2018 as the year of millets. Now learn about the properties of some coarse grains:

Ragi (*Eleusine coracana*): Ragi or Madua is a coarse grain grown in the dry regions of Africa and Asia. It gets ready after ripening in a year. It is a plant originally from the highlands of Ethiopia that was introduced to India some four thousand years ago. It is very capable of being adapted to high altitudes.

The amount of calcium in it is more than other cereals. Calcium helps in keeping our bones strong and muscles strong. Iron element is also found in good quantity in ragi, which is the main component of blood. We can make roti, chilla, and idli with ragi flour. Ragi kheer is also made. Small children (especially those below two years of age) are traditionally fed ragi porridge. It is more beneficial for diabetic patients (Wu *et al.*, 2011).

Bajra (*Pennisetum typhoides*): Bajra or Millet is a major crop, a kind of big grass whose ears have small grains of green color. These grains are counted in coarse grains. People eat it almost all over northern, western and southern India. Millet is the most widely grown cereal among the millets.

Bajra is used in North India, especially in winter. Proteins, iron elements, calcium, carbohydrates, etc. are found in good quantity in it. Carotene (Vitamin A) is also found in some quantity in it. Millets also contain some anti-nutritional substances like phytic acid, a polyphenol, in small amounts. These anti-nutrients can be reduced by soaking millet in water, sprouting, and malting (Agnihotri, 2011).

Jowar (*Sorghum vulgare*): This grain is grown in many parts of the world. It is cultivated in India, China, Arabia, Africa, America etc. Jowar is more in dry places, it cannot be that much in seedy places. In India, its behavior is very high in Rajasthan, Punjab etc. Jowar is sown very less in Bengal, Madras, Burma etc. Even if it is sown, the seeds do not grow well. Its plant grows straight 5-6 hands high in the form of a stalk like a reed. There are knots on seven-eight fingers in the stalk, from which one and a half hand long sword shaped leaves come out on both sides. Cumin flowers and bunches of white grains are put on its end. These grains are small and are useful for eating like wheat.

Jowar is a grain mainly used in baby food. Carbohydrates, proteins, and iron elements are mainly known in this. This grain is light in digestion. This nutrient-rich grain is used as bread in rustic cuisine (Tozzini *et al.*, 2015).

Jowar is the 5th most important food grain grown in the world. It is the staple diet of half a billion people. Today jowar is mostly being used for the production of the wine industry, bread. Jowar is also used in making baby food. Jowar can play an important role in meeting the need for food grains for the growing population (Kmieciak *et al.*, 2016).

Kodo (*Paspalum scrobiculatum*): Kodo or Kodon or Kodra is a grain that is produced even in less rainfall. It is cultivated in different parts of Nepal and India. Due to paddy etc., its cultivation is now decreasing. Its plant is the size of a paddy or big grass. Its crop is sown as soon as it rains and gets ready in Bhadon.

It is also called ancient grain. Kodo also contains some amount of fat and protein. Due to its low 'glycemic index', diabetic patients are asked to use it in place of rice. Its crop is mainly in Chhattisgarh. This is the main food of the forest dwellers there (Agnihotri, 2018).

Barley (*Hordeum vulgare*): Barley is a grain, which has been produced since ancient times. It is rich in minerals like calcium, iron, magnesium and phosphorus along with proteins and carbohydrates. Along with this, many vitamins like vitamin C, thiamin, riboflavin and niacin are also found (1). It is called Yava in Sanskrit and it is grown in large quantities in countries like India, America, Germany and Russia. Although its popularity has decreased over time compared to staple grains such as wheat and paddy, it is still used for health benefits. Especially, barley water is considered beneficial for health.

The highest amount of alcohol is found in barley as compared to other grains. For this reason, it is a diuretic. That's why it is beneficial for those with high blood pressure. Barley is also helpful in reducing increased cholesterol. It contains fiber, anti-oxidant, and magnesium in good quantity. For this reason, people suffering from constipation and obesity should use barley. It is consumed in the form of porridge, roti, and khichdi (Wu *et al.*, 2011).

Conclusion

The cultivation of coarse grains has increased in some areas of Chhattisgarh and Odisha. The trend of coarse cereals has increased in South India as well. In Andhra Pradesh, Telangana, and Odisha, coarse grains are included in the daily diet. Barley, jowar, ragi, kodo, sama, bajra, sawa, and many such grains used to be a part of our diet. But they disappeared from our plates. Now this nutritious food is in demand all over the world. Coarse grains like jowar, bajra, and ragi are full of nutrition. Ragi is a highly nutritious coarse grain of Indian origin. There is a lot of calcium in it. Ragi contains 344 mg of calcium per 100 grams. Ragi is beneficial for diabetic patients. In the same way, there is an abundant amount of protein in millet. Per 100 grams of millet contains 11.6 grams of protein, 67.5 grams of carbohydrates, 8 milligrams of iron, and 132 milligrams of carotene. Carotene protects our eyes. Jowar is the 5th most important food grain grown in the world. It is the staple diet of half a billion people. Today jowar is mostly being used for the production of the wine industry, bread. Jowar is also used in making baby food. Jowar can play an important role in meeting the need for food grains for the growing population.

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