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Original Article**Bajra: A Strong Option For Nutrition And Food Security****Dr. Siddharth Namdeo¹ and Payal Soni²**¹Guest faculty, Department of Agricultural Extension Education, CoA Gwalior, RVSKVV²Senior Research Fellow, ICAR-IISS, Bhopal**Corresponding author: snamdeo28@gmail.com*

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ABSTRACT

Bajra is the most widely grown crop in the millet family. It is known as 'poor man's food'. It is one of the most important cereals grown in the tropical and arid regions of the world, mainly in Asia and Africa. Due to its tolerance, it can be grown even in areas where crops like maize, wheat and rice cannot be grown. It is also a good source of fodder and fuel. Millet is rich in micronutrients like iron and zinc. Due to its potential health benefits, it is being recommended for celiac people, patients of constipation and many non-communicable diseases.

INTRODUCTION

Pearl millet (*Pennisetum glaucum*) is a rich source of nutrients as compared to the major cultivated cereal crops. Iron deficiency disease causes anemia in millions of people worldwide. Zinc is one of the essential nutrients of the human body, which acts as a cofactor in more than 300 catalysts involved in the metabolism of carbohydrates, proteins, lipids and nucleic acids. Hence zinc is extremely important for the normal growth of plants and animals. In India, severe micronutrient deficiencies have been a persistent problem among malnourished infants, women of reproductive age, pregnant women and lactating mothers. Food diversification is a method of promoting the consumption of micronutrient-rich foods, which can reduce the pressure to eliminate malnutrition and increase the productivity of main crops for the growing population.

Madhya Pradesh stands first in area (26%) and production (26.03%) of minor millets in the country as of 2018–19. The area and production in the state had decreased at a rate of 5.01% and 3.39% per annum between 1970 and 2019. Seven districts from the state were selected 71304 [Indian Journal of Agricultural Sciences 94 (3) 72 purposively, with a higher area under minor millets. The selected districts were Dindori, Mandla, Umaria, Chhindwara, Annupur, Shahdol, and Sidhi. The area shares of minor millets in these districts were 24.77%, 17.92%, 11.18%, 8.99%, 8.91%, 6.62% and 1.09% as of 2018–19 (Devi et al. 2023).

Table 1. Nutrient status in millet (per 100 gm)

Energy	1470 Kilo Jules (351 Kilo calorie)
Carbohydrate	75 grams
Fibre	6 grams
Fat	3.3 grams
Protein	10.6 grams
Minerals	2.3 grams
Iron	16.9 mg
Calcium	38 mg



IMPROVED METHOD OF MILLET CULTIVATION

Cultural preparation

Light loamy sandy soil is suitable for millet. It is necessary that the soil has good drainage. Millet seeds are very small and light and friable soil is necessary for germination, therefore plough the field two or three times with a cultivator and then level the field.

Sowing

Kharif millet should be sown from the last week of July to 15th August, while the suitable time for sowing Zaid millet is from the last week of January to the first week of February. For sowing, keep the seed rate at 5 kg per hectare. While sowing, keep the distance between beds 45 cm and the distance between plants 15 cm.

Improved/hybrid varieties

RHB-58, Pusa-444, MLHB-285, JKBH-26, GBH-316, 7886, Pusa-605, Nandi- 8, Nandi-32, Pusa-415, 7688, Proagro-9443, RHB-121, Proagro-9445, GHB-558, HHB-146, GHB-557, Nandi-62, HHB-197, GHB-732, Nandi-52, GHB-744, PHB-2168, RHB-173

Iron enriched varieties

ICTP 8203, Hybrid 7, Hybrid 12 and ICMH 1201

Fertilizer Management

Use fertilizers on the basis of soil testing, for hybrid varieties use 80 kg nitrogen, 40 kg phosphorus and 40 kg potash. The full quantity of phosphorus potash and one third of nitrogen should be applied at the time of sowing. The remaining one third nitrogen should be sprinkled 30-35 days after sowing and the remaining quantity should be sprinkled at the time of ear emergence.

Weed Control

Weeding is of great importance in millet cultivation. The first weeding should be done 15 days after germination and the second weeding should be done after 35-40 days. For weed control by chemical method, one kg of Atrazine or Simazine active ingredient (2 kg) should be dissolved in 600 liters of water per hectare as per requirement and sprayed within 2 days of sowing.

Irrigation Management

In Kharif, if there is a gap in rains, 1 to 2 irrigations can be done, but in Zaid/Summer, 4-5 irrigations are required due to the evaporation demand of the environment.

CROP PROTECTION**Pest Management**

Stem borer and locust are the main harmful pests of Bajra. For the control of stem borer, spray 2 liters of Aldrin 20 cc twice and for the control of locust, spray BHC 5 percent powder.

Disease Management

For the control of Downey mildew, treat the seeds with dithane M-45/indofil Z-78 at the rate of 2 gram/kg. For the control of ergot, treat the seeds with 20 percent common salt and wash with fresh water, then treat the seeds with thiram at the rate of 2 gram/kg.

Harvesting and Threshing

When the grain is hard and the moisture is 20%, cut the ears with sickles or cut the whole plants and make bundles and thresh after drying them in the sun for 4-5 days. Both can be threshed by human labour/by trampling under the feet of bullocks or with the help of mechanical machines like Olpad thresher. The capacity of the manual method is very low (17-20 kg/hour) and the cost is also high. The manual thresher has the highest capacity. It gives seeds at the rate of 75 kg/hour and the cost is the lowest (3-3.5 rupees) and the grains are not damaged either.

Drying and Storage

After cleaning the threshed grains, dry them in the sun till 10-12% moisture and store them in money bags in a moisture-free place.

Production

In rain-fed farming, 12 to 15 quintals/hectare and in irrigated farming, 25 to 30 quintals of grains are produced. Along with this, 100-125 quintals of green fodder is obtained per hectare.

Economy

Bajra is grown on a large scale as fodder. Apart from the use of grain and fodder, dry and green millet is also used as animal fodder in dry and semi-arid areas, construction material for making kutch houses and fuel for cooking. Therefore, commercialization of alternative food, fodder and industrial products can prove to be effective in increasing the demand for millet.

CONCLUSION

Bajra is the Indian word for pearl millet. It is one of the oldest cultivated grains. It is widely consumed in rural India and is available all over the world. It's a rich source of a variety of nutrients and has a lot of health benefits. Pearl millet is high in fiber and essential amino acids. In addition to being nutritious, bajra is resistant to drought, heat, and some forms of contamination that affect other grains. It has been used for years as a cover crop and animal feed, but its low cost and high nutrient content make it a great source of food for people as well. It is especially helpful in areas with food insecurity.

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