PEARL MILLET-NUTRITIONAL VALUE AND MEDICINAL USES!

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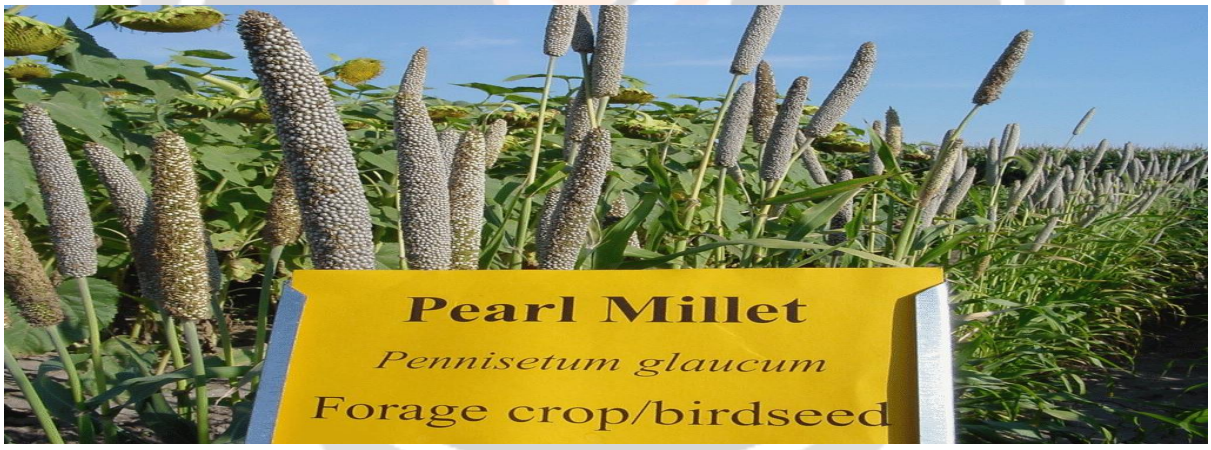
ABSTRACT

Bajra or Pearl Millet (Pennisetumglaucum) is one of the oldest millet used by our ancestors. Along with wheat flour even bajra was included in the regular diet. It is known to have a very high fiber content which makes it healthier. It is used as a regular meal in places like Rajasthan, Gujarat. Now a day's it is gaining its importance back. Now bajra are recommended by many health professionals, Dieticians and Nutritionist because of its various health benefits. It is also not very expensive millet which can reduce its consumption. People are becoming more and more conscious about the fact of bajra having various good effects on the body.

Keywords: *Pearl millet, review, health, NCDs, Bird seed, ICRISAT Gene bank, Forage crop.*



(pearorganicdimensiondivinemillets.weebly.com/l-millet)

INTRODUCTION

Pearl millet (*P. glaucum* (L.) R. Br.) belongs to section Paniceae of family Poaceae. It is an important food and forage crop in Africa and Asia, and important forage in Americas. It has great potential because of its suitability to the extreme limits of agriculture. A total of 21,392germplasm accessions including750 accessions of wild species of genera *Pennisetum* and *Cenchrus*, assembled from 50 countries are conserved at International Crops Research Institute for the Semi-Arid Tropics **(**ICRISAT**)**gene bank. Many of the wild relatives have evolved surviving drought, floods, extreme heat and cold, and in the process they have become adapted or developed resistance to the pests and diseases, which causes heavy losses to the crops. Considering the diversity and present-day distribution, Harlan (1971) and Harlan et al. (1975) suggested a defused belt stretching from western Sudan to Senegal as the center of origin for pearl millet. The greatest morphological diversity in pearl millet occurs in western Africa, south of Sahara desert, and north of the forest zone (Clement, 1985; Tostain et al., 1987). The wild progenitor occurs in the drier northern portion of this zone.

Though, some researchers reported multiple domestications for pearl millet, it is believed that pearl millet was domesticated some 4000 years ago at its place of origin. From there it reached eastern Africa and then spread to India some 3000 years ago and to southern Africa some 2000 years ago. India is considered as the secondary center of diversity (Brunken et. al., 1977)

Main Name: Pearl Millet
Biological Name: Pennisetumglaucum
Names in Other Languages: Grano (Spanish)**,** Type de graine (French)**,** Bajra (Hindi), Kamboo (Tamil & Malayalam), Sajjalu (Telugu), Bajri (Marathi, Gujarati), Bajra (Bengali, Oriya, Punjabi & Urdu)

Table 1: **Top 10 Millet Producers of World (2013-14)**

S.No.	Country	Production (Tonnes)
1.	**India**	10,910,000
2.	**Nigeria**	5,000,000 (F)
3.	**Niger**	2,955,000 *
4.	**China**	1,620,000 (F)
5.	**Mali**	1,152,331
6.	**Burkina Faso**	1,109,000 *
7.	**Ethiopia**	1,090,000
8.	**Sudan**	807,056
9.	**Chad**	582,000 *
10.	**Senegal**	572,155

(No symbol =Official figure, * =Unofficial figure, F =FAO)

MEDICINAL USE OF PEARL MILLET

Bajra has been attributed to having several health promoting abilities due to its chemical composition, which are listed below to having several health promoting abilities which are listed below

Table 2: **Medicinal Use of Pearl Millet**

Disease	Benefits	Positive Factors in Perl Millet
Anaemia	May help in increasing Hb	High iron content (8mg/100g) High Zinc content (3.1mg/100g)
Constipation	May help in dealing with constipation	High fiber (1.2g/100g)
Cancer	Anti cancer property Inhibit tumour development	
Diabetes	Help in dealing with diabetes	Has Low glycemic index
Celiac	Anti Allergic	Gluten free
Diarrhea	Probiotic treatment	Lactic acid bacteria
NCDs	Inhibits DNA scission, LDL cholesterol, liposome oxidation and proliferation of HT-29 adenocarcinoma Cells.	Flavonoids, phenolics Omega 3 fatty acids
Helps in	Pearl millet has a large amount of	Due to large amount of phosphorus.

bone growth development and repair	phosphorus. Phosphorus is very essential for bone growth and development as well as for development of ATP which is the energy currency of our body.	Phosphorus.
Stomach ulcers	Pearl millet is recommended for curing stomach ulcers. The most common cause for stomach ulcers is excess acidity in the stomach after food intake. Pearl millet is one of the very few foods that turns the stomach alkaline and prevents formation of stomach ulcers or reduces the effect of ulcers.	Prevents formation of excess acidity.
Heart health	The lignin and phytonutrients in millet act as strong antioxidants thus preventing heart related diseases. This is why, pearl millet is considered good for heart health. High amounts of magnesium present in pearl millet have been shown to control blood pressure and relieve heart stress.	The lignin and phytonutrients in millet act as strong antioxidants thus preventing heart.
Respiratory problems for asthma patients	Pearl millet contains high concentration of magnesium which helps reduce severity of respiratory problems for asthma patients and is also effective in reducing migraine attacks	Due to high amount of magnesium
Weight loss (Obesity)	Pearl millet can aid the process of weight loss as it is high in fibre content. Owing to its fibre content it takes longer for the grain to move from the stomach to the intestines. This way, pearl millet satiates hunger for a long period of time and thus helps in lowering the overall consumption of food.	Due to high fibre content
Preventing Gall stones:	The high fibre content in pearl millet is also known to reduce the risk of gall stone occurrence. The insoluble fibre content in pearl millet reduces the production of excessive bile in our system. Excessive amount of bile secretion in our intestine often leads to aggravate the condition of gall stones.	Due to high in fibre content
Anti allergic properties :	Pearl millet is a treasure trove of beneficial properties. The grain is very digestible as such and has a very low probability of causing allergic reactions. Due to its hypo allergic property, it can be safely included in the diets of infants, lactating mothers, elderly and convalescents.	Due to its hypo allergic property

Table 3: **Pearl Millet Nutrition Facts Amount:** 1 cup**Weight:** 200 g

Nutrients	**Amount(gram)**
Basic Components	
Proteins	22 g
Water	17.3 g
Ash	6.5
Calories	
Total Calories	756
Calories From Carbohydrates	600
Calories From Fats	71
Calories From Proteins	85.3
Carbohydrates	
Total Carbohydrates	146
Dietary Fiber	17 g
Fat & Fatty Acids	
Total Fat	8.4 g
Saturated Fat	1.4 g
Monounsaturated Fat	1.5 g
Polyunsaturated Fat	4.3 g
Omega-3 Fatty Acids	236 mg
Omega-6 Fatty Acids	4 g
Vitamins	
Vitamin E	100 mcg
Vitamin K	1.8 mcg
Thiamine	842 mcg
Riboflavin	580 mcg
Niacin	9.4 mg
Vitamin B6	768 mcg
Foliate	170 mcg
Pantothenic Acid	1.7 mg
Minerals	
Calcium	16 mg
Iron	6 mg
Magnesium	228 mg
Phosphorus	570 mg
Potassium	390 mg
Sodium	10 mg
Zinc	3.4 mg
Copper	1.5 mg
Manganese	3.3 mg
Selenium	5.4 mcg

(Pearl Millet has about 378 calories per 100 gm of weight.)

ENERGY

Pearl millet is a rich source of energy (361 Kcal/100g) which is comparable with commonly consumed cereals such as wheat (346 Kcal/100g), rice (345Kcal/100g) maize (125 Kcal/100g) and sorghum (349Kcal/100g) as per the Nutritive value of Indian foods (NIN, 2003).

CONCLUSIONS

Dieticians and Nutritionist are trying their best to promote this particular millet and increase its consumption by educating its benefits among all groups of people. Awareness among the people helps to create a positive attitude towards this millet. It is also called as pearl millet. It is not expensive like pearl but it's definitely has pearl like quality which is beneficial to the body. 100 grams of bajra has the following nutritional values: energy 360 calories, moisture 12g,protein 12g, fat 5g, mineral 2g, fiber 1 g, carbohydrate 67g, Calcium 42mg, phosphorus 242mg, and iron 8mg.

By any nutritional parameter, millets are miles ahead of rice and wheat In terms of their mineral content, compared to rice and wheat. Each one of the millets has more fibre than rice and wheat. Some as much as fifty times that of rice. Finger millet has thirty times more Calcium than rice while every other millet has at least twice the amount of Calcium compared to rice. In their Iron content, foxtail and little millet are so rich that rice is nowhere in the race. While most of us seek a micronutrient such as Beta Carotene in pharmaceutical pills and capsules, millets offer it in abundant quantities. The much privileged rice, ironically, has zero quantity of this precious micronutrient.

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