



## A STUDY ON MILLETS BASED ON HISTORY & POTENTIAL HEALTH BENEFITS

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### ABSTRACT

*Millet grains have substantial benefits as a draught resistant crop, yield good productivity in the area with water scarcity, possesses remarkable edible & nutritive values & ease of processing & food manufacturing. Most of the developing countries have started working in the field of improvement of edible potential of millet grains.*

*Millet oil could be a good source of linoleic acid & tocopherols. Millet is an alkaline farming grain that is gluten free. Millet are also rich source of Phyto Chemicals & Micro nutrients, Plays many roles in the body immune system. Millet have antioxidants which prevent deterioration of human health such as lowering blood pressure, risk of heart disease, Prevention of cancer & cardiovascular diseases, Diabetes etc*

*Key words:-Phyto chemicals, Gluten free, Kodo, Finger millet, Foxtail millet.*

### **Introduction of millets:-**

Millet is not a grain as is believed, but a tiny seed, varying in colour. The type of millet used for food, generally belong to panicum miliaceum or setaria italic category. The origin of millet is said to be Ethiopia, where it has been consumed since prehistoric times. Millet has even been mentioned in the bible as an ingredient for unleavened bread. It continues to be an important staple food in Africa where flat bread known as 'injera' prepared from it.

In Asia & India too 'roti' made from ground millet seeds have been widely consumed since ancient times. In Europe millets were consumed during the middle ages. It was introduced to United States only in the 19<sup>th</sup> century's as birdseed & livestock fodder. The world's major millet producers are in India, china & Nigeria. India is the top consumer of millets in the world. The growing environmental changes in the world is leading more & more farmers switch on to cultivation of millets as it grows around the year in the harsh conditions even when there is low rainfall & not requiring very rich soil or fertilizers.

### **Description of millets:-**

The minor millets consumption as been in practice since the beginning of ancient civilization of world. Generally, the millets are small-grained, annual, warm-weather cereals belonging to grass family. They are highly tolerant to extreme weather conditions such as draft & are nutritious compared to the major cereals such as rice & wheat. They contain low phytic acid & are rich in dietary fiber, iron, calcium & B-vitamins. More over, these millets release sugar slowly in the blood & also diminishes the glucose absorption. This properties of the minor millets made the present consumers attracted to the consumption of millet.

Millet has interesting characteristics in that the hulls & seeds contain small amounts of go iterogenic substances that limit uptake of iodine to the thyroid. In large amounts this "thyroid function in inhibitors" can cause goiter & some researchers feel this may explain, at list in part, the perplexing correlation between millet consumption & goiter incidence in some of the developing countries where millet constitutes a significant part of the diet. In many of these countries another contributing factor may be a lack of sufficient dietary iodine.

### **History of millets:-**

Millet grain have been discovered in pots used for storing grains & seeds discovered at archaeological sites in present day china, India, Europe & different parts of Africa. Millets have been a good part of the staple diet among many communities across

the world. We find millets popping up in literature, sculptures, paintings, folk song & religious compositions from different types & geographies. One finds many millet preparations in traditional cuisines surviving to this day in different parts of India, China, Japan, Korea, Russia, Turkey, Ethiopia etc.

Millets are extremely hardy crops with some, like Proso millet, needing just 70 days to be ready for harvest. This adaptation to short cultivation times is probably what made this the staple grain of nomadic communities across the Central Asia, Spreading for as this tribes moved from place to place.

The millets are a group of small-seeded species of cereal crops are grains, widely grown around the world for food & fodder. They don't form a taxonomic group, but rather a functional or agronomic one. Their essential similarities are that they are small-seeded grasses grown in difficult production environments such as those at risk of drought. They have been in cultivation in east-Asia for the last 10,000 years. Millets are warm weather cereals with small grains & include six genera, i.e., panicum, setaria, echinocloa, pennisetum, paspalum & Eleusinian.

Millets like jowar (sorghum), Bajra (Pearl millets) & Ragi (Fingers millets) are also called coarse grains. They are Kharif crops & are chiefly rain-fed crops, requiring hardly any irrigational facilities. Unlike rice, they grow in less rainy areas in the following order-Ragi (Damp areas), Jowar (Moist areas), Bajra (Dry areas). Ragi requires comparatively more rain & bajra requires the drier parts India. India leads the world in production of millets. The region under these crops has not amplified. Millets have protein content higher than both wheat & rice individually.

### **Importance of minor millets:-**

Consumption of residue free organic millet meal in regular diet will provide nutritious balance to overcome the diseases like cancer, diabetes, heart attacks, cardiac diseases, renal disorders, gastro intestinal problems, thyroid issues liver failures, brain disorders etc. Millet food has to be promoted globally on a massive scale to build a healthy human society by preventing them from chronic diseases.

The positive result reveals that many patients suffering from Diabetes, Gangrene, Hypertension, Triglycerides, Convulsions, Asthma, Rheumatism, Tumors, Cancers, Gynae problems, Bone development & nervous disorders have significantly because the health benefits are immense. Prevention is always better than cure.

Millets are neglected these days due to indifference of literate public, policy makers & greed of corporate giants which are interested in seeing the public to get entangled in web of diseases & chemical cures. Today the governments have a huge responsibility to keep their populations healthy but some governments are working hard in glove with the villains & harming them.

It is unfortunate that the modern world is trying to throw away the best foods that nature had given us & got used to "Negative grains" like wheat & rice that are very low UN fiber, low nutrition, disease causing & mankind is suffering its consequences. Rice cultivation with water stagnation is the cause for green house gases production & environmental pollution.

### **Millets & its magic:-**

Millets are a group of gluten-free cereal grains that are highly nutritious & commonly contain higher protein, minerals, vitamins & fiber levels, compared to corn, rice & very well suited to drought-like conditions. They form grains in 90-110 days & are often cultivated on skeletal soils. Millet production is traditionally not dependent on the use of synthetic fertilizers & majority of them are not affected by storage pests. Additionally, great natural biodiversity exists in millets, hence making them amenable to cultivation in various agro-climatic conditions.

In this age of modern life style, the millets & millet foods are gaining good response due to various health advantages. Demand is growing for highly nutritional & balanced diet due to health awareness in today's ever changing world. It is time to develop a holistic approach to strengthen the resilience of agricultural livelihoods through the new initiative of promoting nutritious & hardy traditional climate smart millet crops to strengthen the resilience of food systems. These magic minor millets have the significant value in the context of India, as a large section of its population still depends on the production & productivity of millets & other so-called minor crops".

### **Millets in India:-**

\*It has been neglected due to various factors & it is time to promote millets production & conservation to build a healthy society. In Indian Sanskrit ancient texts, millets have been mentioned in Yajurveda too.

\*Millets mature quickly & are able to withstand climatic stress & grow in a variety of soils. They are high in a range of micronutrients, including calcium, iron & dietary fiber. Millets also offer a better balance of essential amino acids & are therefore a more usable protein than wheat, rice & maize.

\*Additionally, millet grains are rich in a variety of vitamins, have a low glycemic index & contain antioxidants. In 2013, millets were incorporated into India's National Food security Act, meaning these nutritious grains are now available to more than 800 million people at a subsidized rate.

\*In marginal tiny & semi-arid regions. They hold a central role in local food cultures & have great promise to address food security & poverty challenges in south Asia, but faced challenges to greater use, including arduous processing & a stigma as 'food of the poor'.

\*There is drastic down in cooking time using electrical mini-mills to prepare the millet food in 10 minutes instead of 2 hours of regular food. According to the survey report the millets have become a staple food in many parts of the country.

\*There is need of the hour to develop the value chains of minor millets by contributing to the livelihoods of the rural population through the introduction of a new avenue of economic development & by augmenting diets with the nutritional grain.

\*India's National Food Security Act incorporated millet into the public distribution system & a farm diversity program promoting millet cultivation specifically targeted states with malnutrition. School children eating millet for lunch had up to 37% higher levels of hemoglobin over students eating white rice.

### **Cultivation of millets:-**

Millets are one of the most farmer friendly of crops. In fact in many communities, millets are considered the lazy farmer's crop! One really needs to do just two things: go to the field to broadcast seeds & then return after 3 months to harvest the grains. Millets require almost no inputs, grow even in extremely low fertility soils, don't need deep ploughing, can be sown with minimal tools or machines, needs only one weeding with timely good rains at the right times, the farmer can expect to reap a good harvest. Using some improved techniques & practices, farmers can get a decent harvest even when the rains are not up to par.

Maximum millet cultivation happens in the kharif period, i.e. during the monsoon season. In areas that receive more than 800mm of rains, many of the millets can be cultivated in the second season, i.e. as a Ragi crop (during the post monsoon, early winter months). And in some places with the right soil & geography, a few millets can even grow in the third season, during the dark days of winter, drawing on residual moisture in the soil & the dew that precipitates.

Millets are extremely resistant to pest attacks. This is a characteristic that comes in very handy when planning admixed crop farm cultivated using non pesticide management techniques. A few rows of millets separating rows of more susceptible leguminous crops are a common practice in farms in different parts of the world.

Small grain size, when taking up cultivation, one needs to remember that they should not be sown more than two inches deep & with some soils even shallower sowing would be good. Another aspect that improves the millet crop is sowing it with uniform & appropriate spacing in lines rather than broadcasting. This helps in the plants getting fairly uniform access to resources resulting in a more uniform harvest, increasing the value of such grains significantly for both the market as well as domestic processing.

Millets do not require any fertilizers or pesticides & they need not much of investment. Millets require no artificial fertilization but we can use organic manures to produce residue free organic millets. But other grains need huge quantities of chemical fertilizers & pesticides which end up being harmful to human health, soils & water.

### **Uses of millets & Food sources:-**

Millets are major food sources in arid & semi-arid regions of the world & feature in the traditional cuisine of many others. In western India, Sorghum (Jowar) has been commonly used with millet flour (Bajra) for hundreds of years to make the local staple flat bread (Rotla in Gujarati, Bhakri in Marathi, Ragi Rotti in Kannada). Ragi Mudda is a popular meal in southern India.

Other countries in Africa where millets are a significant food source include Ethiopia, Nigeria & Uganda. Millet is also an important food item for the population living in the drier parts of many other countries, especially in eastern & central countries outside Africa, millet has local significance as a food in parts of some countries, such as China, India, Burma & North Korea.

The use of millets as food fell between the 1970s & the 2000s, both in urban & rural areas, as developing countries such as India have experienced rapid economic growth & witnessed a significant increase in per capita consumption of other cereals. People with celiac disease can replace certain gluten-containing cereals in their diets with millet. Millets are also used as bird & animal feed.

### **Types of millets:-**

Millets in India enjoy prime importance that is because India is one of the biggest producers clocking 8 million tons every year followed by Africa & China. So let us know a bit more about the types of millets grown in India & millet nutrition that will convince you to stock them. The most commercial varieties of millets produced in India are pearl millet; Finger millet/Ragi,

Foxtail millet/Thinai, Kodo millet, samai/little millet, Barnyard millet/Kuthiraivali & sorghum/jowar/cholam. In addition to them there are few other varieties of minor millets are also produced in India.

**\*Pearl millet:**-Bajra or pearl millet flour can be mixed with wheat atta for weight loss. Pearl millet is said to be miracle millet with iron content 8 times higher than that present in rice. Other facts about pearl millet nutrition are that it is also rich in protein, fiber & minerals such as calcium & magnesium. Consumption of pearl millet will help ease constipation issues & any problems with the digestion as well. Because of the nutritional line-up, it can also make for a good lactagogue. So with all these health benefits of bajra it can be a staple food in our regular diet.

**\*Finger millet:**-Finger millet is originally native to the Ethiopian highlands & was introduced into India approximately 4000 years ago. It is highly adaptable to higher elevations & is grown in the Himalayas up to an altitude of 2300 meter.

It is the most important small millet in the tropics (12% of global millet area) & it is cultivated in more than 25 countries in Africa (eastern & southern) & Asia (from near east to Far East) predominantly as a staple food grain. The major producers are abundance or nutrients present in them.

Finger millet is rich source of calcium, iron, protein, fiber & gluten-free food which can be included in our regular diet. It is one of the most popular commonly consumed millets in India. Due to ragi's nutrition, it can be considered as a good replacement for rice & wheat. The most notable nutrition feature is that it is a rich source of calcium & other minerals. It is porridges & even wheat flour. This ragi benefit can be derived from patients with diabetes.

Finger millet is a cereal has low fat content & contains mainly unsaturated fat. It is easy to digest & does not contain gluten; people who are sensitive to gluten can easily consume finger millet. It is considered as one of the most nutritious cereals.

Due to rich fiber content, Finger millet is believed to be a good laxative & prevents constipation. People who suffer from liver diseases, high-blood pressure, heart weakness & asthma should consume roasted green finger millet. The millet is also advised to a lactating mother if she is unable to produce sufficient milk to feed her infant. Finger millet is considered to be a boon for diabetes patients & obese people, as the digestion of finger millet takes place at a slow pace & hence, glucose is released slowly into the blood.

Also, millet contains a Mino acid known as Tryptophan. This compound reduces the appetite & thus, helps to control our diet. It is specially recommended to kids, as the millet is rich in calcium & therefore helps in proper growth & development. The millet helps to raise the hemoglobin level. It also works well as an anti-ageing agent.

**\*Foxtail millet:**-Foxtail millet (*Setaria italica* L. Beauv) ranks second in the total world production of millets & continues to have an important place in the world agriculture providing approximately six million tons of food to millions of people, mainly on poor or marginal soils in southern Europe & in temperate, subtropical & tropical Asia. It will grow in altitudes from sea level to 2000 meter. It cannot tolerate water logging.

Foxtail millet is fairly tolerant of drought; it can escape some droughts because of early maturity. Due to its quick growth, it can be grown as a short-term catch crop. It is adapted to a wide range of elevations, soil & temperatures. Its grain is used for human consumption & as feed for poultry & cage birds.

Foxtail millet helps in weight loss & these can be cooked just like rice & many recipes can be prepared with the ground foxtail millets. It is available in the form of rice, semolina or as flour. As with other millets, foxtail millet is rich in smart carbohydrates, the kind which doesn't increase the blood sugar levels immediately. It is rich in dietary fiber & minerals like iron & copper. Due to this, it helps to reduce the levels of bad cholesterol & keeps the immune system strong.

**\*Kodo millet:**-Kodo millet (*Paspalum scrobilatum* L) was domesticated in India almost 3000 years ago. It is found across the old world in humid habitats of tropics & subtropics. It is a minor grain crop in India & an important crop in the Deccan Plateau.

The fiber content of the whole grain is very high. Kodo millet has around 11% protein, & the nutritional value of the protein has been found to be slightly better than that of foxtail millet but comparable to that of other small millets. As with other food grains, the nutritive value of kodo millet protein could be improved by supplementation with legume protein.

**\*Little millet:**-Little millet is highly nutrition. The little millet may be called little but in no means its nutritional content is little. It is a rich source of B-vitamin, minerals like calcium, iron, zinc, potassium among others. It also provides essential fats to the body, the kind that helps in weight loss. Its high fiber content is yet another positive making it an ideal part of pongal or even kheer instead of rice.

**\*Barnyard millet:**-*E. crusgalli* domesticated in Japan 4000 years ago & *E. colona* domesticated in India. Barnyard millet is the fastest growing of all millets & produces a crop in six weeks. It is grown in India, Japan & China as a substitute for rice when the paddy crop fails. The plant has attracted some attention as a fodder in the United States & Japan.

**\*Sorghum:-**Sorghum is the fifth most important cereal crop & is the dietary staple of more than 500 million people in more than 30 countries. It is grown on 42 m ha in 98 countries of Africa, Asia, Oceania & the Americas. Nigeria, India, USA, Mexico, Sudan, China & Argentina are the major producers. Other sorghum producing countries are Mauritania, Gambia, Mali, Burkina Faso, Ghana, Niger, Somalia & Yemen, Chad, Sudan, Tanzania & Mozambique.

Sorghum or jowar is one of the most popular millets for weight loss. The very mention of millets & you would have pictured jowar or jowar rotis in your mind. Well; it is one of the most popular, much-researched millet for weight loss. Compared to rice & wheat, jowar has a high proportion of calcium. It also packs in a neat iron, protein & fiber punch. Researchers have found that a typical sorghum wax is rich in policosanols which helps in reducing the levels of cholesterol. Being a gluten-free grain, it is also much preferred by those who can't tolerate wheat-based products.

**\*Proso millet:-**Proso millet is well adapted to many soil & climatic conditions. Being a short season crop with low water requirement, it grows further north than the other millets & also adapts well to plateau conditions & high elevations. Proso is found high in mountains; in the former USSR up to 1200 m & in India up to 3500 m.

Proso millet requires very little water, possibly the lowest water requirement of any cereal, & converts water most efficiently to dry matter/grain. This is not because of its drought resistance but because of its short growing season.

### **Nutritional value of millets:-**

Millets are one of the four gluten-free grain-like seeds which are highly nutritious, non-glutinous & not acid forming foods. They are rich in proteins, iron, zinc, magnesium, calcium, tryptophan, Phosphorus, Potassium, Fiber, B-vitamin & Anti-oxidants which contribute to even more health benefits of this important grain.

They considered as the least allergenic & most easily digestible grains available. Since millet does not contain gluten, it is a wonderful grain alternative for people who are gluten-sensitive. Millets are also packed with essential amino acids, fatty acids & Dietary fiber.

These wonderful grain ranks as one of the most important cereal grains, feeding more than one third of the world's population. Millet is counted on around the world to provide basic nutrition for many developing nations.

### **Comparison with other Major staple foods:-**

The nutrient content of some of the millets compared to major staple foods in a raw form are far better. Raw forms, however, are not edible & cannot be fully digested. These must be prepared & cooked as appropriate for human consumption.

In processed & cooked form, the relative nutritional & anti nutritional contents of each of these grains is remarkably different from that of raw forms. The nutritional value in the cooked form depends on the cooking method.

Millets are the best food alternate against rice & wheat which have lots of harmful effects on adults by providing carbohydrates that quickly turn to glucose & get released in to blood stream & put our systems in difficulty. Wheat & Rice also low in micro nutrients & are processed in to worst foods & they are the cause of many diseases in the modern world.

### **Health Benefits of Millets:-**

Now it is an established fact that the whole world is facing many health challenges because of fiber-less foods. It is also clear to 1000s of patients that all the lifestyle diseases can be made to disappear just by eating millets for breakfast, lunch & dinner & removing harm full foods like rice, wheat, refined flours, processed meats, refined oils, packed & ready to consume-kind of foods & milk & refined sugar.

Millets have multiple health benefits to include these ancient prized grains-like seed in our regular diet. Most of the civilized people have not even heard about millets & much less understand the benefits of millet nutrition. And yet, millet is one of the best-kept secrets of our ancient ancestors. Traced back to its origin in China, millets have been used throughout the ages & across many countries. Millets are even mentioned as treasured crops in the Bible.

These tiny "grains" are gluten-free & packed with vitamins, minerals, folic acid, calcium, iron, potassium, magnesium & zinc. In fact, while it's often called a grain because of its grain-like consistency, millets are actually seeds. Millets are particularly high in minerals, iron, magnesium, phosphorous & potassium. The protein content in millet is very close to that of wheat both provide about 11% protein by weight. Finger millet is the richest in calcium content, about 10times that of paddy rice or wheat. Millets can help lower the cholesterol, phosphorous in millets help with fat metabolism, body tissue repair & creating energy (Phosphorus is an essential component of adenosine triphosphate or ATP, a precursor to energy in your body), Millet can help lower risk of type 2 diabetes, Fiber from whole grains has been shown to protect against breast cancer & whole grains have been shown to protect against childhood asthma.

\*Millets are rich in iron content, which makes it a perfect food for curing anaemia. They contain natural calcium deposit which strengthens the bones if consumed fractures.

\*Consumption of millets in large amounts helps decrease triglyceride levels in the body. It thins the blood to prevent blood platelet clumping, thereby reducing the risk of sunstroke & coronary artery disorders.

\*Vitamin B in millets helps to break down carbohydrates & fat more efficiently. It reduces homocysteine level in the blood to prevent cholesterol from bonding & forming deposits. Niacin prevents cholesterol from getting into the blood stream & raises high density lipoprotein (HDL) in the blood. This protects the blood vessels from atherosclerosis & hemorrhage.

\*Millets are one of those food grains which are loved by vegans & vegetarians because of the high amount of protein in it. It helps to meet the daily protein requirement from a complex carbohydrate than animal sources.

\*Millets contain tryptophan, an amino acid which lowers appetite & helps in managing weight. It digests at a slower rate & keeps stomach full for a longer period of time. Millets are high in fiber & satiate hunger quickly, preventing from overeating. People who want to lose weight should incorporate millets in at least one of their main meals.

\*Millet reduce the risk or developing colon cancer Lignan, a phytonutrient in millet, is converted into mammalian lignin in our intestine that protects us from breast cancer.

\*Magnesium in millets relaxes the muscles that line the inside of the arterial wall, which helps to reduce blood pressure. It also reduces the severity of asthma & frequency of migraines.

\*Celiac is a disease which damages the small intestine & interferes with the absorption of nutrients from food. People who suffer from this disease cannot tolerate gluten. This makes millets a perfect food for them since it is completely gluten-free.

#### **Millets for heart health:-**

Millets are one of the best possible grains to add to your diet if you want to protect your heart, which is something that everyone can relate to. Millet is a rich source of magnesium, which is something that everyone can relate to. Millet is a rich source of magnesium, which is an important mineral for reducing blood pressure & the risk of heart attacks of strokes, particularly in the case of atherosclerosis. Millets are also a great source of potassium, which further keeps blood pressure low by acting as a vasodilator. Reducing your blood pressure & optimizing your circulatory systems is one of the best ways to protect your cardiovascular health.

#### **Cholesterol levels in check:-**

Cholesterol levels go hand in hand with heart health, so the high fiber levels in millet make for an ideal cholesterol-lowering approach. Dietary fiber actually eliminates dangerous “bad cholesterol” (LDL) from the system, while promoting the effects of “good cholesterol (HDL).

#### **Diabetic Free:-**

Diabetes is a disease found in millions of people around the world. Millets are beneficial food staple in many developing countries (where diabetes is less frequently found), perhaps because one of the effects of millets is a reduced chance of type 2 diabetes, thanks to the significant levels of magnesium found in this particular grain. Magnesium is considered one of the most important minerals for increasing the efficiency of insulin & glucose receptors in the body, thereby preventing this disease. A 30% reduction in diabetes has been seen in populations divided between diets with or without magnesium.

#### **Digestive Health:-**

As most fiber-rich foods boast, millet can help move your gastrointestinal system along & eliminate problems like constipation, excess gas, bloating & cramping, By regulating your digestive process, you also improve your nutrient retention & reduce your chance of more serious gastrointestinal conditions like gastric ulcers or colon cancer. Regular digestion & elimination of waste also helps to optimize your kidney, liver & immune system health, as those organ systems are closely related to the body's metabolic activities.

#### **Detoxify the Body:-**

Many of the antioxidants found in millets, in addition to their beneficial impact on neutralizing free radicals, which can cause cancer, they can also clean up other toxins from your body, such as those in your kidney & liver. Quercetin, Curcumin, Ellagic acid & various other beneficial catechins can help to rid your system of any foreign agents & toxins by promoting proper excretion & neutralizing enzymatic activity in those organs.

### **Respiratory system:-**

Research as come to light showing that millets can significantly improve the quality of life for people suffering from childhood asthma & can also prevent it from developing in the first place. Although some of the evidence is controversial, it is shown that significantly less wheezing & asthma attacks (by more than 15%) was seen in children who had large intakes of grains like millets.

### **Millets prevent Gallstones:-**

Millets have good digestive health with millets. Millets also help in weight loss studies have shown that consuming foods high in insoluble fiber may prevent the occurrence of gallstones. The nurses "Health study found that people eating both soluble & insoluble fiber reported 13% lower risk of gallstones. However, those who ate more of insoluble fiber reported a greater risk reduction in the occurrence of gallstones that is around 17%. So we can eat the millet grain in regular diet plan to prevent gallstones.

### **Millets-Calcium:-**

We need calcium for our bones. This stamen is often times interpreted as consuming sufficient quantities of dietary calcium, mostly in the form of milk. However that is just one aspect. It is also important that the calcium we ate is being absorbed by our bodies. Further, our lifestyle & diet should not deplete the calcium in our bones.

A diet that consists of mostly acid-forming foods such as refined foods, processed foods, sugary food, and glutinous foods leads to insufficient calcium, poor bone health & osteoporosis. In order for us to survive, the blood always has neutral pH. If the body has to process acid-forming foods continuously, in order to maintain the neutral pH of the over time, our bones weaken as our body keeps working to maintain the neutral pH.

Many doctors who work with their patients for regaining their health through dietary change are turning towards plant-based sources for calcium. They provide an easily absorbable source of calcium. Currently; most urban societies believe that milk is the main source of calcium. As per authentic information calcium content in the following foods per 100 gram portion such as in cow's milk 120mg, Almonds 234mg, Sesame seeds unshelled 1160 mg, Ragi 344 mg & Chickpeas 150 mg.

### **Millets-Gluten:-**

Gluten is the protein found in wheat. It gives wheat the elastic quality that helps it rise & keep its shape while making bread. It does so by creating a gluten network in the dough to trap carbon dioxide during fermentation. This causes the dough to rise & results in a chewy texture.

An acidic environment is created in the body which leads to a host of problems-fatigue, acidity, obesity, cancer, diarrhea to name a few. People with gluten intolerance or celiac disease can't digest gluten & this damages their small intestine. Millets are gluten-free grains & hence suitable for everyone.

Millets are grains that do not have any gluten. Those who have experimented with rolling out ragi, jowar or bajra rotis will vouch for how much easier it is to roll out wheat rotis, jowar. However, this makes millets easy to digest & mildly acidic, if not alkaline. If our diet is rich in gluten, consider adding millets to our diet to help create a more alkaline medium in your body. This will go a long way towards improving our health.

### **Findings:-**

It is unfortunate that the modern world is trying to throw away the best food that the nature had given us & got used to negative grains like wheat & rice that have low in fiber, low in nutrition, Diseases causing mankind is suffering the consequence millet are neglected these days due to influence of illiterate public, policy makers & greed of corporate giants which are interested in seeking the public to get entangled in the web of disease & chemical cures. Today the governments have a huge responsible to keep their population healthy.

### **Conclusion:-**

Millet is staple food sources that are not only providing major nutrients like protein, carbohydrates, fat etc. It also provide ample of vitamins & minerals. In developing country, Occurrence of malnutrition & various health problems like obesity, diabetes, cardiovascular diseases, skin problems, cancer, calcium deficiency etc, are most prominent because of inadequate supply of nutrition. This is mainly due to the little utilized agricultural crops as food & an unawareness of people & lack of knowledge to people. Millets are easily available & cheap in cost.

This study showed that millets are used as alternative cereals potentially healthy to elaborate therapeutic food products like protein & energy rich diet, Diet for diabetes, Gluten free diet etc. This study showed that millets are used as “food medicine”.

Millet foods are also characterized to be potential prebiotic & can enhance the viability prebiotics with potential health benefits.

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