Frequently asked questions:

Q1. What is sorghum?

Answer: Sorghum is an ancient cereal that originated in Africa and is currently grown in many regions around the world. It is an ideal crop for its ability to tolerate drought and requirement of fewer nutrients in soil to thrive compared to the other grains. Sorghum is high in insoluble dietary fiber and is an ideal whole grain to add to any diet.

Q2. Describe sorghum as a cereal for human consumption?

Answer: Sorghum is the fifth most important cereal crop in the world after wheat, rice, corn and barley. Whole grain sorghum contains all three parts of the grain: bran, germ and endosperm. Consumers are becoming increasingly aware and educated about the benefits of including whole grains into their daily diets. Sorghum can be popped like popcorn, cooked in soups or pastas, ground into gluten free flour or even brewed into beer.

Q3. What is pearling?

Answer: Pearling is the process of removing the bran (outer coating) and some of the germ from the sorghum kernel. This allows for faster cooking times and a product containing a higher level of starch which is great for baking certain types of products like cakes. Pearled sorghum grain is an excellent alternative to white rice or couscous.

Q4. What is the difference between whole grain sorghum and pearled sorghum?

Answer: Whole grain sorghum is the grain in its complete form, including all three parts of the kernel – bran, endosperm and germ. Foods made from whole grain sorghum contain all the essential parts and naturally occurring nutrients of the entire grain seed in its original proportions. If the whole grain has been processed (e.g., cracked, crushed, rolled, extruded and/or cooked), the food product should deliver similar rich balance of nutrients that are found in the original grain seed. Pearled sorghum is created when the outer coating (or bran) and some of the germ has been removed from the sorghum kernel. Pearled sorghum has a softer bite and finds great use in salads and soups.

Q5. Describe the nutritional value of sorghum.

Answer: Sorghum grains contain 10-13% protein, 2-3% fat and 70-80% carbohydrates. Compositionally sorghum is very similar to the other cereal grains and can be used almost interchangeably with maize. However, it is regarded as food of low value mainly because of tannins which occur in the seed coats of brown sorghum grains. Also a large proportion of the protein in sorghum is prolamine which is an alcohol-soluble protein and has low digestibility in humans.

Q6. Does sorghum have any nutraceutical potential?

Answer: Sorghum is a naturally gluten free grain and is ideal for consumption by individuals who live with celiac disease, gluten intolerance, or gluten sensitivity. Thus, it has long been considered a safe grain alternative for people with celiac disease and gluten sensitivity. New molecular evidences confirm that sorghum, in addition to being gluten-free, provides health benefits that make it a worthy addition to any diet. Various varieties of sorghum like burgundy, black and sumac are known to contain high level of antioxidants. Due to such health benefits sorghum can be a promising grain for replacement of rice or corn among the general population.

Q7. What are the factors responsible for less use of sorghum as a staple diet for most of the populations of world?

Answer: Sorghum has not realized its full potential as a crop because of several drawbacks that have kept its production at lower levels as compared to other cereals. According to The National Academy of Sciences (1996), the major drawbacks of sorghum include:

1. Lack of status, with the crop being regarded as a “coarse grain” fit for animal feed and being food of the peasant classes.
2. Regard as a crop of low food value, though it hardly differs from maize and wheat. It is regarded as food of low value mainly because of tannins which occur in the seed coats of brown sorghum grains and a large proportion of the protein is prolamine, an alcohol-soluble protein that has low digestibility in humans.
3. Difficulty in processing.

Q8. Differentiate between waxy and non-waxy sorghum.

Answer: Sorghum is generally classified as waxy and non-waxy on basis of the endosperm composition. Non-waxy sorghum starch has approximately 75% amylopectin and 25% amylase. It stains deep purple with iodine. On the other hand, waxy sorghum starch contains nearly 100% amylopectin. It stains reddish-brown with iodine. The gross composition of waxy sorghum is nearly identical to that of non-waxy sorghum. However, the starch in waxy sorghums is hydrolyzed more rapidly than that of the non-waxy counterparts. This explains why waxy sorghums do not generally have acceptable food quality.

Q9. Discuss the health benefits of sorghum?

Answer: Every day, more and more studies show the benefits of whole grains. Sorghum is a whole grain with many healthy properties, for example:

1. Naturally high in protein, fiber and iron.
2. Rich in antioxidants, which are believed to help lower the risk of cancer, diabetes, heart disease and some neurological diseases
3. Full of policosanols that may have a positive impact on human cardiac health.
4. Naturally cholesterol-free and contains beneficial components that may help to manage cholesterol.

Q10. What is the impact of sorghum consumption on diabetic patients?

Answer: The glycemic index test results for sorghum have demonstrated a mid-level range. Thus, it can be said that sorghum produces a lower blood glucose response which is an important consideration for those with diabetes and those at risk of developing it.

Q11. What is sorghum syrup made from?

Answer: In regions of the southern U.S., varieties of sweet sorghum are used to create sorghum syrup, which is often referred to as "*sorghum*." Sorghum syrup is a natural sweetener created from juice squeezed from sweet sorghum stalks. It has a rich,

dark color and consistency similar to molasses but with a milder taste. The syrup is tasty when drizzled over pancakes or biscuits and is also a great addition to barbecue marinades, salad dressings, granola and premium spirits. Plus, sorghum syrup is lower in fructose levels than other sweeteners and is high in potassium.

Q12. What is Sweet Sorghum?

Answer: Sweet sorghum is made from 100 percent pure, natural juice extracted from sorghum cane. The juice is cleansed of impurities and concentrated by evaporation in open pans into clear, amber colored, mild flavored syrup. The syrup retains all of its natural sugars and other nutrients.

Q13. Describe the process of sorghum dehulling.

Answer: Generally, sorghum is dehulled prior to use. The equipments required for dehulling of the grains include deep mortar and pestle, winnower, some water, a fairly large container and a flat surface or mat for drying. The method involves putting sorghum into the mortar. Grains are moistened by sprinkling little quantity of water on them. The damp grains are pounded with the pestle to loosen the bran until dehulling of all grains is complete; the dehulled grains are winnowed using local winnower. The winnowed, dehulled grains are put into a large container and washed with water until clean. Grains used in the dehulling process are naturally dried to moisture contents as low as 6-9 %. The method described is a domestic procedure used by all housewives in the areas where dehulling is done. Mechanical equipment for dehulling is not available.

Q14. Describe the commercial process used for milling of sorghum.

Answer: The dehulled grains are washed, drained and dried by spreading on a mat or mats. Then the dried, dehulled grains are dry milled using the machine grinder or mill. Most common models of such mills are the Premier Grinding Mill which uses electricity, and the Amuda Grinding Mill which uses a diesel engine. The electric mills are more common in urban areas while the diesel mills are common in the smaller towns and villages.

Q15. What is ogi?

Answer: Ogi is a free-flowing, thin, fermented porridge made from sorghum with a creamy consistency and smooth texture. It is prepared from paste (endosperm fractions) developed by wet milling. The ingredients include approximately two tablespoons of the wet sorghum paste and 6 cups of water. The paste is mixed to a smooth, thin consistency in two tablespoons of water. Then the paste is poured into boiling water with continuous stirring until the paste gelatinizes. The bowl is covered with a lid and cooked for an additional 2 min. The thin porridge can be sweetened as desired. It is consumed immediately without storing.