



FREQUENTLY ASKED QUESTIONS

1. Define cereals?

Ans. Cereals are herbaceous plants belonging to the grass family *Graminaceae* or *Poaceae* (the only exception being buckwheat) grown mainly for their grain. Cereal grains such as wheat, rice, corn, barley, oat, rye, sorghum and millets are used primarily for human consumption and animal feed.

2. What is the nutritional importance of cereals?

Ans. Nutritionally, they are important sources of dietary protein, carbohydrates, the B complex vitamins, vitamin E, iron, trace minerals and fiber. Cereal grains contain relatively little protein compared to legume seeds, with an average of about 10%–12% dry weight. Cereal crops are energy-dense, containing 10,000–15,000 kJ/kg, about 10–20 times more energy than most succulent fruits and vegetables.

3. What are the uses of hard and soft wheat flour?

Ans. The wheat flour is known as “strong” if it has high gluten content and “soft” if the gluten content is low. Strong flour is used for bread making while soft flour is used for cake or biscuit making.

4. What is the proximate composition and uses of rice starch?

Ans. Rice flour of 9-13% moisture content contains 5-9% of protein, 0.4-1.0% of fat and yields 0.4-0.7% ash. It is used in refrigerated biscuit manufacture to prevent sticking, in baby foods as a thickener and in waffle and pancake mixes as water absorbent. In India, rice flour is also used in the preparation of vermicelli, papad, sandige and in a number of other preparations.

5. Define wheat beer and its common types?

Ans. It is a beer that is brewed with a significant proportion of malted wheat. It is common for wheat beers to also contain malted barley. Wheat beers are brewed using both ale and larger brewing techniques. The two most common varieties of wheat beer are Belgian *Witbier* and German *Weizenbier*.



6. How parched rice is prepared?

Ans. About 4-5% of the total supplies of rice in India is converted into the rice products- parched rice, parched paddy and rice flakes. Parched rice is prepared by throwing rice into sand heated to a high temperature in an iron or earthen pan. On stirring, rice begins to crackle and swell. Then the contents of the pan are removed and sieved to separate the parched rice from sand. Parboiled rice is preferred in making parched rice.

7. What are the different uses of rice starch?

Ans. Rice starch is used as food, especially in puddings, ice creams, pies and custard powder. Its principal use is in laundry as a stiffening agent. Rice starch also finds use in cosmetics, in face and dusting powders, as a thickener, in calico printing, in finishing textiles and for making dextrans, glucose and adhesives.

8. What are the common uses of maize oil?

Ans. Oil is extracted from germ, while bran and germ meal are utilized as animal feed. Maize oil rich in essential fatty acids, finds use as a salad oil. Its high smoke point makes it suitable for use as cooking oil.

9. Name different millet crops grown in India?

Ans. The name “millet” is applied to numerous small seeded grasses which oriented in Asia or Africa. The major millet crops of India are pearl millet (*Pennisetum typhoideum*), called “bajra” and finger millet (*Eleusine coracana*) known as “ragi”. A number of other minor millets are grown and they are the common millet or proso millet (*Panicum miliaceum*), foxtail millet (*Setaria italica*) and kodo millet (*Paspalum scorbiculatum*).

10. Define coarse grains?

Ans. along with maize and sorghum are considered “coarse grains” and constitute the food of the economically weaker sections of the population in India.

11. What are the uses of malted ragi?

Ans. Malted ragi flour is called “ragi malt” and is used in the preparation of milk beverages. A fermented drink or beer is also prepared from the grain in some parts of



the country.

12. Discuss briefly the Chemicals produced from cereals?

Ans. A range of solvents (e.g., ethanol, butanol, acetone) and acids (e.g., acetic, propionic, butyric, lactic, etc.) can be produced from cereals by fermentation and aromatics can be produced by hydrolysis or chemical means fairly directly (ferulic acid, vanillin, furfural) or through complex catalytic chemistry starting with ethanol or synthesis gas. Excluding food and pharmaceuticals, some products such as itaconic acid are produced in large volumes by fermentation.

13. What are the different medical and pharmaceuticals application of cereals?

Ans. Starches are used as carriers or binders as well as raw material for production of ascorbic acid and fermentation products in medical and pharmaceuticals application. Carriers include cyclodextrins, where their structure enables them to entrap the active ingredient. Polyols are also finding increasing use since some are distinguished by their chirality, one of the most rapidly growing areas of medicine.

14. Discuss the uses of cereals in textiles?

Ans. Starch is widely used as a size or stiffener in fabric especially printed cottons where it can be used to hold materials and prevent diffusion. The choice of starches both origin and amount of processing or derivatisation, is complex with cereal starches competing with potato or tapioca on price and performance.

15. What are the different adhesive applications of cereals?

Ans. The adhesive applications consist of many ingredients including solvents, fillers, antifoams, stabilizers and plasticizers, as well as the resin or glue itself.