



FREQUENTLY ASKED QUESTIONS:

Q1: What are the major features of barley grain?

Ans: Barley grains are roughly cigar shaped, larger and more pointed than wheat, with a shallow furrow running along the ventral side. The kernel of covered barley consists of the caryopsis and the flowering glumes. The husk consists of two membranous sheaths that completely enclose the caryopsis. Cross cells are in a double layer and their walls do not appear beaded. There are two to four aleurone layers present.

Q2: Comment on the chemical composition of barley?

Ans: Barley grain is rich in starch and sugars, relatively poor in protein and very low in fat. The husk is mostly composed of lignin, pentosans, mannan, uronic acid, hemicelluloses and cellulose fibers. The starchy endosperm is composed of about 85-89% starch enclosed in cell walls. Embryo consists of about 7% cellulose, 14-17% lipids, 14-15% sucrose, 5-10% raffinose, 5-10% ash and 34% proteins.

Q3: How dietary fibers are helpful in lowering cholesterol level in blood?

Ans: The dietary fiber in barley aids in the production of acetic acids and propionic acid which serve as the fuel for liver and



muscle cells. Propionic acid also restricts the action of HMG-CoA reductase, which is involved in cholesterol production in the liver. In this way, barley helps in reducing the cholesterol level in blood.

Q4: What are the different foods products obtained from barley?

Ans: The different products obtained from barley are barley flakes, caffeine- free health drink, beers, whiskies, malt extracts, malt vinegar.

Q5: What are the various therapeutic effects of oats?

Ans: Various therapeutic effects of oats include Plasma cholesterol lowering, Modulation of plasma glucose levels and improvement of gastrointestinal function.

Q6: How oats are helpful to patients with celiac diseases?

Ans: Celiac disease is characterized by a severe adverse immunological reaction of the intestinal mucosa to gliadins. Gliadins are a component of the gluten protein found in wheat, rye and barley, and these cereals are excluded from the diet of patients with celiac disease. Recent two studies have shown that the consumption of oat products did not result in adverse effects in patients with celiac disease



Q7: Comment on the chemical composition of oats?

Ans: The various components in Oats are not uniformly distributed in the kernel. The hull and bran are high in cellulose, pentosans, and ash; the germ is high in oil and rich in proteins, sugars, and, generally, ash. The endosperm contains the starch, has a lower protein content than the germ and the bran and is low in fat and ash. Oats also contain significant amounts of dietary fiber and also contribute to significant amounts of dietary minerals (Mg, P, Fe, Cu, Zn) and vitamins (thiamine, vitamin E, folate, niacin).

Q8: What are the various health benefits of barley?

Ans: Barley helps to reduce the blood cholesterol level. It also reduces the risk of cardiovascular diseases. It is effective against diseases like atherosclerosis, diabetes, insulin resistance and ischemic stroke.

Q9: What are the major features of oats grain?

Ans: Oats is covered cereal enclosed in a husk which consists of two membranous sheaths (lemma & palea) that completely encloses the caryopsis. The testa comprises a single cellular layer with cuticle. In cross section the nucellar epidermis can be seen as a thin colorless membrane. In endosperm there is a single aleurone layer. The cell walls are not thick.



Q10: Define groats?

Ans: Hull- less oats are called groats i.e., when husk is removed from oats, they are called groats.

Q11: What is the protein composition in groats?

Ans: Oat groats have relatively good amino acid balance, high in globulin (salt -soluble fraction) and low in prolamins (alcohol-soluble fraction).

Q12: What are the main pigments present in barley grain?

Ans: Anthocyanins of the cyanidin type is found in the green organs of barley cultivars and catechins in the seed coat and mature kernel. The tannins that complex with proteins and often account for off- colors that are noted especially during processing

Q13: Define avenanthramides and what are its main sources?

Ans: Avenanthramides are phenolic compounds, consisting of anthranilic and hydroanthranilic acid linked to one of several hydroxycinnamic acids through an amide bond. Oats is the only source of avenanthramides. The three most predominant avenanthramides in oats are avenanthramide 1,3& 4 .Its levels range from 40 -132 micro g/g in the oat grain. It is heat stable during processing.



Q14: What is the percentage of husk in barley and oats grain?

Ans: Oats contain 30% of husk whereas barley contains only 11% of husk.

Q15: Define whiskey?

Ans: Whiskey is a type of distilled alcoholic beverage made from fermented grain mash. It contains about 36% alcohol.

