



Summary

Cereals supply the most calories per acre, can be stored safely for a long time, and can be processed into many products acceptable throughout the world. The term cereal encompasses members of the grass family, Gramineae, that are grown for their edible grains and supply the basic nutritional needs of mankind. Barley is the world's fourth most important cereal crop after wheat, maize (corn), and rice. Barley probably came into cultivation about 10,000 years ago. The common, husked barleys are richer in fiber and lignin than naked grains. Barley grain has two main principle uses, animal feed and malting. Barley also makes a nutritious food for humans; with several health benefits to its credit. It has a rich nutty flavor and pasta-like consistency. Today, Canada, United States, Germany, France, Spain and the Russian Federation are the leading commercial producers of barley. Oats(*Avena sativa*) are a hexaploid crop, which evolved from three distinct diploid progenitor species through natural interspecific hybridization and polyploidization. Residues and by-products of cereals are excellent sources of furfural, a basic raw material in many industrial technologies. The nutritional profile of oat groats compares favorably with other unfortified cereals (Welch, 1995). Oats have a higher oil content and thus a higher energy density. Oat protein has a relatively good amino acid balance, and oats also contain significant amounts of dietary fiber, which is high in