VARIOUS TYPES OF CEREALS AND THEIR NUTRITIONAL VALUE

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Cereals are belong to a group of cultivated plants from the cole poaceae (grass). Their grains contain the high level of starch and we use it for consumer, industrial and fodder.

Whole – grain is a base of a healthy diet. It should provide about 40% of daily food, perfectly if cereals are grown in organic environment and there are not genetically modified.
The most popular products from cereals are: flour, groats, oil and sirup.

Due to the cultivation method we can divide cereals into:
- **Spring cereals** - annual plants, which the entire life cycle takes place in a period of growing,
- **Winter crops** - annual plants, which to start the cycle all developmental need of the period of low temperatures occurring in winter.
Corn

Corn – annual plant which come from Mexico a height of 2.5m. Its part of utility is a flask with seeds. Nowadays, we usually eat cornflakes, groats, flour, popcorn and very popular corn oil.
Corn

The Corn grains contain 60-70% of starch, quite a lot of roughage, proteins, vitamins from the group B and also vitamins: D, E, K and provitamin A. The corn grains are a source of Omega -3 acids. The corn is a perfect source of minerals, ex:
Corn

- potassium
- sodium
- calcium
- magnesium
- iron
- copper
- manganese
- phosphorus
- selenium
- zinc and iodine
Wheat

Wheat is a cereal grain, 1.5m high which the biggest growing are in Europe, East Asia, India, both Americas and in Australia.
Wheat

It is mainly processed into flour and used in baking, confectionery, pasta production and culinary products. People produce also semolina, cereal. It’s used in the manufacture of starch, malt brewing and dry gluten.
Wheat

It contains a lot of starch and other carbohydrate, 11% of protein, 2% of fat, 13% of fibre, 1% of mineral (iron, phosphorus, potassium, magnesium, calcium, zinc, manganese) and also high amount of vitamins of B group and vitamin PP. Wheat germs are rich in vitamin E and enzymes.
Barley

Barley - cereal with a height not exceeding 1m, producing four or six-ears. It’s cultivated in Europe, Asia, Africa, USA, Argentina. Barley is used to obtain malt in the production of beer, for making porridge, and from the burnt grain is obtained surrogate of coffee.
It contains: 70% of carbohydrate, 11% protein, 10% fiber, 2% fats and minerals (sodium, potassium, phosphorus), and vitamin B.
In young, delicate blades, use for the juice production, is 2 times more magnesium, 5 times more iron, 25 times more potassium and 37 times more calcium than wheat! Young shoots also contain a high content of beta carotene, vitamins B1, B2, B3, B6, E and C.
Triticale - artificially bred hybrid of the two cereals - wheat and rye, which combines features of both species. In its natural state does not occur. Is mainly used as feed for cattle, pigs, sheep and birds.
It contains 12.2% protein, about 55% carbohydrate (e.g., starch), 1.4% fat. Triticale protein has a higher lysine content than wheat.
Oats

Oats - annual crops, the blades do not exceed 1 m height. The oat grain is used for animals’ feed and for the production of groats and flakes. Oats has a very high nutritional value because of fat, twice more than other cereals.
Oats

These are mostly polyunsaturated fatty acids, which in addition to providing energy have a beneficial effect on the body.
Oats

Oats is an important nutrient, protein-rich (high biological value, because it contains 41% of valuable amino acids), calcium, magnesium, silicon, potassium, iron, zinc and vitamins B, PP, K, E. It is rich in low starch polysaccharides, forming the so-called fiber, essential in the daily human diet.
Teff - a very old variety grain domesticated in the north-east Africa, even before the birth of Christ. Teff’s grain can have the colour; from the most prized, to almost black.
Teff

The darker the colour, the stronger the flavor. In Ethiopia, traditionally grown teff for flour to bake a local "bread." It is also used to produce alcoholic beverages.
Teff has a very high nutritional value. It’s got a high content of calcium, iron, magnesium, grain is also distinguished by a high content of folic acid, antioxidants, and dietary fiber. It contains all the amino acids, especially methionine, cysteine, and lysine.
Millet - wheat originating in Asia, is one of the oldest cultivated plants, which produced millet and flour and less gruel and small bread. Cereal can be also used for the production of starch and sugar.
Millet

It also has a wide application in animal nutrition, especially birds such as poultry or exotic birds.
The main component of millet grain are approximately 59% carbohydrates, protein 10 to 18% and fat from 3.6 to 4.8%. They also contain vitamins B₃, A, PP, as well as mineral salts: magnesium, potassium, phosphorus, silicon, iron, copper and do not contain gluten.
Rice

Rice - one of the most widely cultivated cereal in the world, which is the basis for food 1/3 of the population of the Earth. Its blades are thick and plurality, its grows to 1,5 m height of 1,5 m.
Rice

It is grown in hot climates are warm and the entire length of the globe. Dining area are grains that are eaten cooked as a separate dish or used in the preparation of soups, main courses and desserts.
Rice

With grains also produces rice flour and alcoholic beverages (beer, rice, sake, arak). To prepare the rice for consumption it is subjected to a process of "grinding" in which the grain is separated from the shell. At this stage, the resulting product is brown rice. In order to obtain white rice it is subjected to polishing, where the shell is removed.
Sorghum

Sorghum - grass growing up to 5 m in height, which grows on damp areas of the equatorial zone, tropics and subtropics. Today outside Africa are grown mainly in Mediterranean America.
Fruit - cocci are not rich source of nutrients. Contain up to 70% of carbohydrates (mainly starch), and 18% protein (with significant share of two amino acids: lysine and tryptophan), about 5% fat, vitamins (mainly groups B), minerals, especially magnesium, calcium and iron.
Sorghum

It does not contain gluten. Corn is processed groats, flakes and flour, which makes the pancakes, pasta. The leaves are used as fodder for cattle, and sorghum seed is made liquor very similar to beer.
Rye

Rye - the species of grass coming from the Middle East or Central Asia. It is one of the most important cereals (in economic aspect).
Rye

It is grown as an annual plant in sandy or loam soil. Rye is mostly a cereal winter crops, less spring grains.
It is characterized by high resistance to frost and small requirements of soil and heat. Rye is used as feed for farm animals and as the ingredient of bread.
Rye contains 9.5% protein and 1.6% fat and has a high content of carbohydrates, which represent 72-78% of the weight, occurring mostly in the form of starch. It also contains fiber, and compared with other cereals such as wheat has a large amount of minerals - potassium, calcium, zinc, copper, manganese, iron. It also contains vitamins B1, B2, PP, E.
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