



## CHEMISTRY OF FOOD PRODUCTS OF PLANT ORIGIN

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### Abstract:

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Food technology is a branch of practical science dealing with the study of food production methods. The modern food industry covers dozens of industries with unique technologies, equipment and equipment. The enterprises of these industries produce cereals, flour, cereals, animal feed, bread, pasta, confectionery, oils and fats, sugar, meat, milk, canned food, alcohol, beer and other food products necessary for human nutrition

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Chemical analysis of food products is a very important analysis that provides information about the chemical composition, processing, quality control and contamination of food products, as well as ensures compliance with legal norms in the preparation, storage, transportation and trade of food products.

Food analysis is a prerequisite for product quality control, the application of regulatory methods and verification of compliance with national and international food standards, contract specifications and food labeling. Food additives used in the preparation and processing of food products and containing preservatives, antioxidants, sweeteners, and dyes are used to improve food safety and quality.

Today, high-performance liquid chromatography (HPLC) and many similar analysis methods are used in advanced laboratories for chemical analysis of food products. These methods include advanced detection systems that can identify compounds from different chemical groups in a single analysis.

In short, chemical analysis of food products is a diverse interdisciplinary field of research that is of great importance for health, social and economic consequences. Chemical composition, quality, observability, sensory perception of food, nutritional value and its characteristics from the point of view of safety. The molecular composition of food is often very complex. This depends on various factors such as genetic and geographical origin, environmental and climatic conditions, type of agriculture, cultivation and processing methods, and the presence of pollutants.

Garlic contains important substances - potassium, calcium, phosphorus, vitamins B and C, selenium, manganese, iodine and essential oils. Medicinal properties of the product: - supports the immune system and brain; - helps to get rid of pathogenic microflora in the intestine; - improves digestion and accelerates metabolic processes; -

reduces bad cholesterol, prevents the formation of blood clots and heart attacks;

- prevents the development of cancer by removing free radicals from the body that cause abnormal cell development;
- helps with liver and gallbladder diseases-dilutes bile, thereby preventing the formation of stones;
- elimination of inflammatory processes in the genitourinary system does;
- it is used as a method of prevention and treatment of helminthiasis in children. To achieve maximum effect, garlic should be consumed raw.

### Green tea

Green tea is the leader in the top of the most useful and nutritious products. This is due to the high content of polyphenols, powerful natural antioxidants. A separate type of this substance is catechins, which are part of green tea. They remove free radicals that affect cells and are the cause of disease and aging.

The healthy drink also contains vitamins A, C, B, K, P, F and trace elements. They improve the health of hair, skin, the functioning of the nervous system, regulate blood sugar levels and strengthen blood vessels, promote kidney function and metabolism. 20 types of amino acids and glutamic acid stimulate the brain and restore the nervous system. Caffeine and L-theanine increase tone, and theobromine has a diuretic effect, contributing to weight loss.

### Avocado

The pulp of the fruit contains many minerals (calcium, phosphorus, iron, iodine, etc.), vitamins (groups B, E, A, F, C, folic acid), fiber and saturated fats. Thanks to unsaturated fatty acids, avocado accelerates the absorption of nutrients, normalizes weight, reduces cholesterol and blood sugar levels. This product is recommended for people with diseases of the cardiovascular system and gastrointestinal tract. Due to its high fiber content, the fruit is especially useful for those who are prone to constipation, as



dietary fiber improves intestinal health and is a breeding ground for beneficial bacteria.

#### **Carrot**

It is a unique vegetable that is a source of valuable nutrients. The main components contained in carrots and allowing the body to stay healthy:

Keratin-normalizes the work of the reproductive organs and vision. According to a study, people who consume large amounts of carrots have a 40% reduced risk of developing chicken blindness with age.

#### **Biotin-promotes cell growth and regeneration.**

Pantothenic and folic acids are involved in the breakdown of fats and carbohydrates, in the production of red blood cells and sex hormones, and in the synthesis of cholesterol.

Vitamins C, B1, B2, B3, E, K and PP-improve the functioning of the immune system.

Phytoncides are natural antibiotics that inhibit the growth of bacteria and viruses.

Essential oils-improve digestion, strengthen the immune system, help cleanse the body, support the cardiovascular system.

Minerals: potassium, magnesium, zinc, calcium and iodine - improve blood circulation and reduce stress on the cardiovascular system. These are the main helpers for the normal functioning of the body. They are not produced by the body itself and come only with food.

A healthy heart and blood vessels, a strong immune system, a good digestive system, cancer prevention, healthy skin, eyes, teeth and gums - the list of useful properties of carrots is endless.

#### **Legumes**

Beans, peas and lentils contain large amounts of vegetable protein, so they are among the 10 most beneficial foods for human health. Eating beans helps to normalize cholesterol levels and reduce blood pressure. Dishes made from this product are suitable for the prevention of heart disease, diabetes, and osteoporosis. They also effectively cleanse the body and stimulate the intestines, quickly satisfy hunger and give energy. Legumes are rich in vitamins B and A, carbohydrates and proteins, as well as plenty of fiber. This composition helps to improve the condition of bone tissue, improves the hormonal background, slows down the aging process, improves brain activity.

Most of the agricultural land has already been sown in almost all regions of the world. This means that in the future, increased food security will mainly be associated with the intensification of agriculture on cultivated soils, which implies the continuation of the practice of applying fertilizers to maintain high yields.

If current trends continue, then by 2050, global nitrogen consumption is projected to increase 2.7 times compared to today, and phosphorus by 2.4 times; according to other estimates, the growth in fertilizer use will be less, about 1% per year.

A decrease in the amount of nutrients not only reduced soil fertility, but also led to Land degradation, since a decrease in the amount of organic matter leads to a decrease in water retention capacity, a decrease in physical maturity and physical structure of the soil, as well as increased susceptibility to erosion. The loss of nutrients and organic substances leads to a gradual decrease in yields, an even greater decrease in the intake of organic substances and an increase in soil degradation.

In many regions of the world, including sub-Saharan Africa (sub-Saharan Africa - 48 countries) and parts of Latin America, the frivolous or unbalanced use of fertilizers leads to nutrient depletion and the removal of nitrogen, phosphorus and minerals

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