



## NATURAL FOOD - HEALTH OF THE NATION

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**Abstracts:** The article highlights the problem of healthy eating, as one of the main, concerning the health of the nation. Consumption of food for vegetables contributes to solving the problem of protein nutrition, which in recent years has deteriorated significantly. Since the consumption of meat has decreased, the need for a balanced diet due to proteins of plant origin has increased. Its significance is determined by the fact that it is represented in them by water and salt-soluble proteins, most balanced in amino acid composition. In animal proteins, there is no tryptophan, phenylalanine, lysine, leucine, and a number of other amino acids that play an important role in nutrition, and root proteins, for example, contain all essential amino acids. Most of all protein is among the root crops in beets and trout. A lot of protein contains peas, food lentils, beans and kidney beans. Protein-rich spinach: 100 grams of spinach contains an average of 20-30 calories (one egg gives 80 calories). The research was carried out by specialists of the All-Russian Scientific Research Institute of Meat Industry. VM Gorbatov and the AllRussian Scientific Research Institute of the Dairy Industry. At present, the protective role of vitamins C, E, β-carotene, selenium has been sufficiently well studied. Recent epidemiological data show that the beneficial effect of regular consumption of fruits and vegetables in curbing the development of aging diseases is achieved not only through these vitamins, but also other phytochemical compounds that are not vitamins, but have high antioxidant activity. Of particular importance are polyphenolic compounds and, in the first place, flavonoids, which possess anti-inflammatory, allergic, antiviral and anticarcinogenic properties. Of considerable interest is the determination of the general antioxidant capacity of fruits and berries. Antioxidant activity of juices is estimated as follows: grape> grapefruit> orange apple. Fruits and berries are also a source of macro- and microelements. It has been established that for normal human activity it is necessary to have more than 30 minerals that take part practically in all vital processes of the body. Foods enriched with vitamins and minerals are part of a large group of functional foods, that is, products that are enriched with functionally, physiologically useful food ingredients that improve human health. These ingredients, along with vitamins and minerals, also include dietary fiber, lipids containing polyunsaturated fatty acids, useful species of live lactic acid bacteria, in particular bifidobacteria and the oligosaccharides necessary for their nutrition.







## НАТУРАЛЬНЫЕ ПРОДУКТЫ ПИТАНИЯ – ЗДОРОВЬЕ НАЦИИ

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**Ключевые слова обогащение:** овощи; плоды; питание; функциональный продукт.

Абстрактный: В статье освещена проблема здорового питания, как одна из основных, касающихся здоровья нации. Потребление в пищу овощей способствует решению проблемы белкового питания, которое за последние годы существенно ухудшилось. Так как потребление мяса уменьшилось, увеличилась необходимость сбалансированного питания за счёт белков растительного происхождения. Значимость его определяется тем, что он представлен в них солерастворимыми белками, наиболее сбалансированными аминокислотному составу. В животных белках отсутствует триптофан, фенилаланин, лизин, лейцин и ряд других аминокислот, играющих важную роль в питании, а белки корнеплодов, например, содержат все незаменимые аминокислоты. Больше всего белка среди корнеплодных растений в свекле и брюкве. Много белка содержит горох, чечевица пищевая, бобы и фасоль. Богат белками шпинат: 100 г шпината содержит в среднем 20 – 30 калорий (одно яйцо даёт 80 калорий). Исследования проводились специалистами Всероссийского научно-исследовательского института мясной промышленности им. В. М. Горбатова и Всероссийского научно-исследовательского института молочной промышленности. В настоящее время достаточно хорошо изучена защитная роль витаминов С, Е, β-каротина, селена. Последние эпидемиологические данные показывают, что полезный эффект регулярного потребления плодов и овощей в сдерживании развития болезней старения достигается не только за счет указанных витаминов, но и других фитохимических соединений, которые не являются витаминами, но обладают высокой антиокислительной активностью. Особую значимость представляют полифенольные соединения и, в первую очередь, флавоноиды, обладающие противовоспалительными, аллергическими, антивирусными и противоканцерогенными свойствами. Значительный интерес представляет определение общей антиокислительной способности плодов и ягод. Антиоксидантная активность соков оценивается следующим образом: виноградный > грейпфрута > апельсиновый > яблочный. Плоды и ягоды являются также источником макро- и микроэлементов. Установлено, что для нормальной жизнедеятельности человека необходимо более 30 минеральных которые принимают участие практически во всех процессах жизнедеятельности организма. Пищевые продукты, обогащенные витаминами и







группу обширную минеральными веществами, входят В продуктов функционального питания, т. е. продуктов, обогащенных функционально, физиологически полезными пищевыми ингредиентами, улучшающими здоровье человека. К этим ингредиентам, наряду с витаминами и минеральными веществами, относятся также пищевые волокна, липиды, содержащие полиненасыщенные жирные кислоты, полезные виды живых молочнокислых бактерий, в частности, бифидобактерии и необходимые для их питания олигосахариды.

The importance of vegetables and fruits in human nutrition is well known. This our favorite food countries. Vegetables are tasty, nutritious, good for the health. Many substances contained in them are in both meat and dairy products.

But, in addition to the general availability to the population, vegetables have, in contrast from meat and milk, alkaline reaction and their consumption contributes to the establishment of an optimal acid-base balance in the human body. Later, other types of food - meat, fish, milk, eggs, as well as grain food - bread, strongly pressed "pure" plants in the human diet, for a long time providing them the role of additional, auxiliary food raw materials. Only about 110 - 140 years ago "reverse" movement began -the plants were again drawnserious attention. At first, individual humanist scholars, then vegetarian enthusiasts, botanists, then biochemists, microbiologists, doctors began to advocate a return to the predominant or even exclusive nutrition of plant foods. By our days has become the mechanism of the physiological cleansing, restorative healing effect of plant foods, which by all means should be accompanied by meat, dairy and egg products to improve their absorption, to improve metabolism and the balance of calories entering our organism. The role of vegetables in nutrition is already known in the earliest monuments of ancient Russian literature dating back to the 11th century, and these references are such that they leave no doubt about the importance. Importance was attached to vegetables in Rus'. The compiler respectfully writes "From Bornik Svyatoslav ":" The power in vegetables is great. Prominent scientist F. V. Tserevitinov called fruits and vegetables "poetry and the music of food," because without them our meals would be tasteless. Only aromatic and flavoring the substances contained in them give a unique flavor to the most simple and everyday meals our table. Versatile positive influence of vegetables on human health, determines the need use of all their diversity in food. With general wealth mineral salts, vitamins, phytoncides, enzymes and other useful compounds that play an important physiological role in the functioning of human biological systems, each type of vegetables has unique, properties inherent in it. This feature is one of the factors determining the need to consume a wide range vegetables. Eating vegetables contributes to solving the problem of protein nutrition, which has recently years has deteriorated significantly. So how









meat consumption has decreased, increased need for a balanced diet due to protein vegetable origin. Its significance is determined by that it is represented in them by water- and salt-soluble proteins, most balanced amino acid composition. In animal proteins no tryptophan, phenylalanine, lysine, leucine and a number of other amino acids that play an important role in nutrition, and root proteins, for example, contain all the essential amino acids. Most protein among root crops in beets and rutabaga. A lot of protein contains peas, food lentils, beans and beans. Protein-rich spinach: 100 g of spinach contains on average 20 - 30 calories (one egg provides 80 calories). In Japan, the consumption of yellow-green vegetables is given so great importance that it is under the control of two ministries: agriculture and healthcare. Currently, the range of these crops grown in Japan, includes 180 - 200 species. Versatile approach to solution this problem gave a positive result. Along with others, this factor influenced the life expectancy of the population, an example of this Japan. Studying the problems of one of the terrible diseases of the XXI century - cancer, doctors came to the conclusion that approximately every third case of this disease associated with dietary habits. If fats and meat contribute to cancer, then vegetables, especially those rich in dietary fiber, help to resist it. The inclusion of yellow-green vegetables in the daily menu contributes to the prevention of this disease, reducing the incidence of various forms cancer by 50%. Taking beta carotene at a dose of 30 mg / day, which corresponds to the amount of provitamin A contained in two to three (depending on from the variety) hundred-gram root crops of carrots, inhibits the development precancerous leukoplakia in 75% cases. The content of beta-carotene attract vegetables such as coriander, fennel, sorrel, mustard sheet. The green feather in most perennial bows is significantly richer in carotene than green feather at the onion. Basil, Melissa lemon, peppermint, thyme annual and tarragon are consumed fresh in small quantities but are indispensable for enriching flavored drinks with provitamin A. The use of vitamins helps to increase immunity, and, therefore, prevents the occurrence of many diseases. Yellow green vegetables should be consumed in an amount of at least 100 g per day, and a total of vegetables is at least 400 g. Vitamins are useful mainly in the composition of products, and in tableted form they can even render negative action. The development of science determines new direction of ensuring rational nutrition. Such is the discovery of selenium as a health factor. Like vitamin E (tocopherol), selenium is an antioxidant. The body's resistance to infectionsions, including viruses that cause cancer, to a large extent depends from food containing selenium. It is also necessary for the functioning heart muscle and blood vessels vessels. Selenium among vegetables nodules of stakhis, tomatoes are rich, garlic, vegetable varieties of corn. These vegetables, as a source of selenium, should permanently included in the assortmen grown vegetables for their consumption [1]. In the modern ecological environment, the quality of products consumed by humans acquires special meaning. Under conditions of sharp violations









of the ecological balance, the number of people who cannot tolerate certain nutritional components increases, suffer low immune resistance violation of metabolic processes. Taking priority dietary nutritional factor. The role of vegetables thus increases. Being a healing, nutritional element of nutrition, they, in addition to high content in products valuable biological active substances must be characterized by the absence of substances harmful for the human body. Ecological situation of the XXI century is that every person should to possess the information basis of good nutrition. Necessary take into account the wide variability representatives of vegetable crops to the accumulation of ecotoxicants, nitrates. Nitrates in the human body converted to nitrite and nitrite into nitrosamines, which are carcinogenic substances, possess embryotropic and mutogenic action, negatively affect to the central nervous system. According to the ability to accumulate nitrates, vegetables are distributed in the following descending order: cabbage, pumpkin, celery, nightshade. Accumulates a lot spinach, radish, lettuce, dill, beetroot. By consuming vegetables, you can reduce the intake of nitrates from food, without using parts of plants that are most saturated with nitrates. In cabbage, this is a stalk, leaf veins, carrots have a core and top root crop, in zucchini and watermelon the place of attachment to the stem, in pumpkin and cucumbers - peel. It is very important to cleanse the body from the environmental toxicants that have entered it. Vegetables - means that can contribute to this. Pectin substances, the most important component plant cells, in the presence sugars and acids are able to form jellies. Thanks a lot of the adsorption surface of their molecules, pectins (especially water-soluble ones) have the ability to absorb, bind and remove toxic substances, salts of radioactive and heavy metals, radionuclides and cholesterol from the human body. According to the content of pectin substances, carrots, table beet, physalis, pumpkin, zucchini, and tomato stand out the most. It is known that fresh fruits and berries are a rich source of vitamins, minerals, carotenoids, phenolic compounds, enzymes, many of which are antioxidants. According to the World Health Organization, in order to reliably protect the human body from premature aging and the development of many diseases, it is necessary that the daily diet contains at least 700-800 g of fruits and vegetables. The consumption of fruits and vegetables rich in antioxidants helps to deactivate free radicals, carcinogens and it can even influence the processes that inhibit the development of a cell tumor. Epidemiological studies have confirmed that the population group that consumes a relatively high amount of fruits and vegetables, the likelihood of developing cancer, cardiovascular disease and other age-related diseases (more than 60) is quite low. The National Institute for Research on Cancer (USA) recommends eating fruits and vegetables at least 5 times a day. The increased consumption of plant products as sources of antioxidants is more effective than individual antioxidants, since in this case a synergism of the action of phytochemicals and minerals they contain is achieved . At present, the protective role of vitamins C, E,









β-carotene, and selenium has been studied quite well. Recent epidemiological data show that the beneficial effect of regular consumption of fruits and vegetables in curbing the development of aging diseases is achieved not only due to these vitamins, but also other phytochemical compounds that are not vitamins, but have high antioxidant activity. Of particular importance are polyphenolic compounds and, first of all, flavonoids, which have anti-inflammatory, allergic, antiviral and anticarcinogenic properties.

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