Unlike vitamins and artificial supplements, spirulina is a natural component, so absorption and assimilation of useful elements is easier, in greater quantities. Compared to soybeans, algae are 3.5 times more energy efficient and provide 20 times more protein. During sports activities, free radicals are formed in the body that destroy protein. Consuming spirulina will help replenish the reserves of this component and further prevent its destruction. Another remarkable property is the elimination of toxins, salts and other harmful components formed in the process of life from the body. The ecology of modern cities is far from ideal, the air contains many impurities that enter the lungs. Spirulina reduces the negative impact of these adverse factors and restores health and activity.

Conclusions: The analysis of scientific literature data made it possible to conclude that spirulina, as a valuable source of protein and a complex of biologically active substances, is a promising raw material for the development of formulations for sports nutrition.

BACTERIOPHAGES - AS AN ESSENTIAL ALTERNATIVE TO ANTIBIOTICS

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Introduction. Bacteriophages are viruses. They do not affect humans or animals. Bacteriophages destroy only bacteria, or rather - devour them (from the Greek *phagos* - "eater"). They are widespread on our planet, they can be found almost everywhere: in water, deep underground, in the soil and even in a macroorganism. Bacteriophages are used in scientific research, but, of course, their main practical application is the fight against bacteria.

Aim. The aim is to study the state of production and use of bacteriophages as a means of anti-infective therapy, an alternative to the use of antibiotics.

Materials and methods. Use of information from printed and electronic sources, reports and research of scientists.

Results and discussion. Before the advent of antibiotics as a treatment for infectious diseases, life expectancy was quite short. Since the discovery of antibiotics, infectious agents have also started to evolve - they have simply become resistant to them, prompting scientists to modify existing antibiotics. The variety of existing antibiotics is due to many existing bacteria. At the same time there is a problem of emergence of "super-bacteria" which will be multidrug-resistant to antibiotics. This problem is created by people themselves through the thoughtless use of antibiotics, not really knowing what they are suffering from: an infection caused by a bacterium or a virus. Moreover, some bacteria are not sensitive to some antibiotics, so it is important to treat the disease properly, given the type of bacterium that causes the disease. Unfortunately, there are situations when antibiotics can not save a person at all, and have to resort to experimental drugs. It happened to 52-year-old German Tanya Didern. In 2019, she took antibiotics to live with her ailment - hydradenitis. It is an infectious disease in which the apocrine sweat glands become inflamed and are accompanied by pain. For more than 30 years, she has been taking antibiotics, which have worked worse and worse over time. In desperation, in August 2019, she went to Tbilisi, Georgia, to try an experimental method of treatment - with the help of bacteriophages, which led to success.

Bacteriophage therapy, or phage therapy, allows people to save their lives, or the lives of loved ones when antibiotics do not help, through the lysis of pathogenic bacteria. This can be an effective alternative to antibiotics. Treatment with bacteriophages is based on two main properties:

specificity for the recognition of appropriate complementary receptors and rapid destruction of the pathogen. The appropriateness of the use of bacteriophages as a means of treatment is less negative impact on the human body in contrast to antibiotics.

Conclusion. In modern conditions, the fight against bacteria that cause infectious diseases is "the main challenge of time." The problem of antimicrobial resistance is considered globally, and the world scientific community is actively looking for ways to solve it. Therefore, the production of drugs based on bacteriophages is a very important stage in the development of antimicrobial drugs. The production of bacteriophages is a cheaper and more effective way to fight infectious diseases, as opposed to the production and improvement of antibiotics.

PROSPECTS FOR THE USE OF YEAST OF THE GENUS *BRETTANOMYCES* IN BREWING

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Introduction. Today, the use of non-standard types of yeast, which include *Brettanomyces*, is becoming more and more popular in the food industry. The best known uses for *Brettanomyces* are the spontaneously fermentable beers of lambic and gueuze. This beer is characterized by a long fermentation time (up to several years) and a rich, complex taste with specific tones associated with a rich bacterial and fungal microflora. The volatile phenolic compounds in these beers, which are responsible for the main aroma profiles, are associated with *Brettanomyces*.

Aim. To analyze the history of origin and characteristics of the yeast of the genus *Brettanomyces*, their use in brewing.

Materials and methods. We used the method of descriptive research: data from scientific literature were analyzed.

Results and discussion. *Brettanomyces* yeast was first described in 1904 by Niels Hjelte Claussen (Carlsberg Brewery). He isolated them from secondary fermentation beer and determined that they were responsible for the development of the characteristic flavors of English ales. The potential of *Brettanomeces* as a yeast in industrial fermentation processes is increasingly recognized. They are tolerant to low pH and have a highly efficient metabolism.

In the modern classification, the yeast of the genus *Brettanomyces* (family *Saccharomycetaceae*) is non-spore-forming. *Brettanomyces* are capable of fermenting a wide variety of carbon sources, but at different rates. For example, it was found that *Brettanomyces* are capable of fermenting maltose and fructose, although at a lower rate than glucose. Fermentation of sucrose can also indicate the high competitiveness of this yeast.

Brettanomyces, unlike Saccharomyces, are capable of fermenting complex sugars such as cellobiose and dextrins. Most strains of *Brettanomyces* are highly resistant to ethanol, which is critical for survival in a fermentation environment. In some beers, such as Belgian-style lambic or American ale coolship, the presence of *Brettanomyces* is essential for the aroma of the beverage. Lambic-style beers are characterized by a long fermentation time (which can be up to several years) and a rich, complex flavor with specific tones associated with a rich bacterial and fungal microflora. There are various terms for describing the aromatics of *Brettanomyces*, including clove, spice, murine, smoky, phenolic, metallic, biscuit, apple, floral, tropical fruit, citrus, but it is more convenient to combine them under the term “*Brettanomyces* aromatics”.