

Aim. To master the methods of mycelium isolation from the *Pleurotus ostreatus* fruit bodies. Choose the right nutrient medium for optimum biomass accumulation. Compare the mycelium growth on different nutrient media.

Materials and methods. Traditional methods of mycological research were used in the work. Mycelium, was grown in regulated aseptic conditions on solid medium: potato-glucose agar, Czapek's medium, agar for wood-destroying fungi, Saburo medium.

Studies of the intensity of growth were carried out at the level of 3-4 passages by measuring the linear parameters of the colony diameter. In analyzing the results obtained, the methods of mathematical statistics were applied.

Results and discussin. As a result, it was shown that for the primary isolation of the mycelium from fungal fruiting bodies by the effectiveness of use, the nutrient media can be arranged in the following order: potato-glucose agar, Czapek's medium, agar for wood - destroying fungi, Sabouraud agar.

The most suitable media for further use were potato-glucose agar and Chapec's medium. Their advantages are in the simplicity of preparation, low probability of contamination, good mycelium growth, rapid mycelium adaptation.

We have established that the growth rate of the *Pleurotus ostreatus* mycelium on potato-glucose agar at the level of 3 passages (duration of the experiment is 27 days) is 56.67 ± 5.00 mm, which is 1.4 times faster than the result of growth on Sabouraud medium.

Conclusion. The literature data analysis about *Pleurotus ostreatus* biological peculiarities, practical significance and growth conditions has been established that optimal for the *Pleurotus ostreatus* mycelium isolation from fruit bodies are: application of a 3% hydrogen peroxide solution as a disinfectant. The dependence of the *Pleurotus ostreatus* mycelium growth rate on the composition of the test nutrient media is established. Optimal nutrient medium for the mycelial biomass accumulation was selected – the potato-glucose solid nutrient medium and a 26 °C for cultivation.

INFLUENCE OF SOME PREBIOTIC COMPONENTS ON COMMERCIAL AND CLINICAL STRAINS OF PROBIOTIC CULTURES

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Introduction. Probiotics and prebiotics are not only the subject of complex scientific research, but also represent an important commodity in the world market. Nowadays a wide range of consumers are available hundreds of probiotic and prebiotic foods and drugs whose manufacturers promise to address a wide range of health problems.

Without normal microflora, complete digestion and assimilation of food, maintenance of the constancy of the internal environment of the organism, its protection against pathogenic microflora is impossible. The number of beneficial bacteria that coexist with the macroorganism, approximately two orders of magnitude exceeds the number of cells of the macroorganism itself.

The search for ways to normalize the useful microflora in the body has become one of the most urgent tasks of science. Probiotic and prebiotic drugs, their widespread use and implementation are becoming increasingly relevant worldwide. Therefore, the theme of the work is relevant.

Aim. Research of the influence of prebiotic components on commercial and clinical strains of probiotic cultures, which will allow us to conclude that they can be used separately for stimulation of own microflora, as well as for probiotics in the design of effective drugs for the prevention and treatment of dysbiotic conditions.

Materials and methods. A key point in the characterization of prebiotics is their selective stimulation of the beneficial for the human body of the representatives of the intestinal microflora, to which in the first place are bifidobacteria and lactobacilli. The objects of the study were selected classic domestic probiotics - Lactobacterin and Bifidumbacterin, as well as clinical isolates, as representatives of human

normoflora, provided by the Institute of Health of Children and Adolescents. Among the probiotic components we stopped at the widely used L-lysine, inulin and immune stimulant - mumiyo.

The classical microbiological methods were used, some of which were modified by us according to the individual characteristics of each of the components. The characteristics of probiotics and prebiotics, the mechanism of action and classification were considered, a list of cultures included in the probiotic agents was studied.

Results and discussion. The addition of prebiotics of inulin and lysine positively affects probiotic cultures (stimulates their growth) both on commercial strains and on clinical isolates - representatives of normoflora, and the addition of mummies leads to a slight positive effect on Lactobacterin and does not affect normoflora and Bifidumbacterin. Also, there are the following trends: the clinical strains better affects lysine, commercial - inulin; there is a significantly greater positive effect on lactobacilli than on bifidumbacteria.

Positive results were obtained when applying plant biogenic stimulants - aloe and echinacea preparations. We conducted a study on the influence of organo-mineral stimulator - mumiyo, which was widely used in non-traditional medicine, and is now also available in the form of pharmaceutical forms by the domestic pharmaceutical industry.

The main indicator of the usefulness of any probiotic drug is the amount of lactobacteria and bifidobacteria, which in this work was determined by the Koch's method.

To determine the influence of the selected components, the combined cultivation of microorganisms of probiotic drugs and clinical insulates of normoflora with each prebiotic component in a liquid nutrient medium was performed, after 48 h incubation, microorganisms were counted. The studies were carried out in three replicates, calculating the arithmetic mean and confidence interval.

Conclusions. During the study the types of prebiotics, their mechanism of action, principles of use with preventive and curative purposes, the market of prebiotics, used as separate biologically active additives and preparations, as well as in the complex means, were researched; objects of this work - inulin and lysine, as well as mumiyo, as a representative of mineral-organic biogenic stimulants, were selected.

The market of probiotics is considered; identified the most popular probiotic cultures that are part of their composition; Among them, the research objects were chosen - classic domestic mono-drugs Lactobacterin and Bifidumbacterin. The study of the properties of data from commercial probiotics has shown that they are effective and not lost their relevance and now, despite the emergence of many others, including complex ones.

The properties of clinical strains of lactic acid bacteria (provided by the Institute of Health Care of Children and Adolescents of the National Academy of Medical Sciences of Ukraine) were studied as models of representatives of the normoflora.

The influence of selected prebiotic substances on commercial strains, which are the basis of Lactobacterinum and Bifidumbacterinum, is investigated. The influence of selected prebiotic substances on commercial strains, which are the basis of Lactobacterinum and Bifidumbacterinum, is investigated. It has been determined that the highest positive effect on them is inulin, which allows to recommend it in the form of one dosage form in the development of complex probiotic drugs, the influence of mummies is insignificant, therefore, given the complexity of its processing, its use in the complex dosage form is inappropriate.

The influence of prebiotics on clinical strains, which is a model of human normoflora, is investigated. It was determined that the strongest stimulating effect on clinical isolates of normal human flora has lysine, which allows it to be recommended as an independent supplement to stimulate its own microflora. An important task of modern food biotechnology is to obtain additives for physiologically functional foods based on the processing of raw material of animal and plant origin, which promote the proliferation of representatives of the normal intestinal microflora of man.