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Abstract. *In this article set zakonomernosty obtaining yznosostoykyh poroshkovыh materials such karbidostalej based systems "hromystaya karbyd chromium steel" and development workers organs detail agricultural machines.*

Keywords: Rabochie orhanы, abrazyvnoe yznashyvanye, hromystaya steel kompozytsyonnыe materials, Durability, karbyd chromium, pressing horyachaya

Annotation. *In paper conformities to law of receipt of wearproof powder-like materials are set to the type of steel-carbide on the basis of the systems «chromic steel-carbide of chrome» and development of details of workings parts of agricultural machines.*

Key words: workings parts, abrasive wear, chromic steel, composition materials, longevity, carbide of chrome, thermoforming
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CONCEPTUAL FOUNDATIONS OF BIOTECHNOLOGY MIKOBIOPREPARATIV FRUITING BODIES OF FUNGI

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Abstract. *The conceptual technological basis mikobiopreparativ production of fruiting bodies of fungi (Fomes fomentarius (L. Fr.), Gill.). The concept of responsible use of mushroom polysaccharides to protect plants from disease. Biotechnology includes auxiliary (preparation of mushrooms, drying and storage, grinding), and key processes (extraction, separation of liquid fractions blending components) obtain mikobiopreparativ.*

Keywords: mushrooms, crushing, extraction, mikobiopreparat, protection of plants, chitin, glucans, Chemical fertilizers, biological efficiency

Formulation of the problem. The modern concept of implementing integrated and biological (orhanobiolohichnoho, organic, environmental, etc.) agriculture can be achieved in the application of technology in growing crops to protect them from disease resistance inducers mikobiopreparativ-based active substances chitin-glucan and melaninovoho complex. Analysis of scientific publications using glucans and chitosan (chitin derivative) demonstrates the high efficiency of these biopolymers in agriculture. In recent decades studying the properties of chitosan, a dietary substance received much attention for application in various fields: medicine, industry, agriculture, perfumes, and more. As a result of studying the properties of the biopolymer about the possibility of agricultural scientists use positive results to improve plant resistance to disease and adverse effects. [1] The main raw material for chitin and its products - chitosan are breastplates rakopodibnyh primarily krabiv, shrimp,

omariv, lanhustiv. The results of international scientific research towards a biotechnology production inducers of plant resistance to negative influences from chitosan was the appearance on the market of foreign countries biologics - inducers of plant resistance to negative influences such as nartsyss, ahrohit, hitozar, fitohit, and others. These drugs have shown positive results for both biologics, but one of the significant shortcomings wide industrial production of such drugs are not stable supplies of raw materials, which is highly dependent on the price and seasonal besides i fl’connected with vikom and biological krabiv view. Therefore, the solution of this problem has prompted scientists to seek other sources of raw materials to produce chitin and its derivatives, and thus the development process to ensure their production.

As a result of search operations concerning prospective sources of chitin and its derivatives, we have been chosen area of research focuses on developing technology for these fruit til biopolymers with hrybiv [2]. As a result of in-depth analysis of scientific papers found that in addition hitynu in mushrooms are luzhnonerozchynni glucans that are difficult viddilyaty from hitynu because vyhidnishe get hityn-hlyukanovi (HHK) and hitozan-hlyukanovi (HTHK) systems (patent USA 4.368.322). Glucan as elicitors, able to incorporate resistance genes of plants and lead to increased synthesis hlyukanaz and other fitoaleksyniv. Elisytorni properties glucans have long been known.

Hityn-hlyukanovi (HHK) and hitozan-hlyukanovi melanin (HHMK) complexes of fungal biomass can allocate a quantity of up to 10%, and its yield system sensesєARE overlooking the producer and growing conditions. Technical and economic efficiency of these biopolymers confirmed positive indicators recently and is widely used in a plant where hityn, i hitozanїx derivatives є elisytoramy, which stimulate the immune system of plants to adverse impacts, increase their antifungal, antiviral and antibiotic resistance [3, 4].

Our study was aimed to study methods for dietary chitin-glucan complexes (HHK) of higher basidiomycetes (Fomes fomentarius (L. Fr.), Gill.).

The purpose of research was developing biotechnological bases mikobiopreparativ receipt of fruiting bodies of higher basidiomycetes (Fomes fomentarius (L. Fr.), Gill.)

Research results. Morphological indicators bodies of higher basidiomycetes (Fomes fomentarius (L. Fr.), Gill.), As a raw material for manufacturing mikobiopreparatu mikosan, determined in accordance with the technical specifications developed [5]. Humidity fruiting bodies after cleaning and drying determined known methods. Uniformity and degree of grinding fungal biomass was determined by the selection of calibrated holes removable grids Cutter [6].

Growing crops research conducted in each region according to the technology adopted for this soil-climatic zones. The analysis of publications found that prospective and actual raw material for chitin-glucan (HHK) and hitozan-hlyukanovi melaninovyh (HHMK) complexes, which are the basis of the active ingredient mikobiopreparatu mikosan Chemical fertilizers are the fruiting bodies of higher basidiomycetes (Fomes fomentarius (L. Fr.), Gill.). The developed biotechnological process for the active ingredient includes an mikobiopreparatuє a preparatory or auxiliary and basic manufacturing operations.

On the basis of the present scheme of the process can be concluded that the technology for mikobiopreparativ є closed cycle. In BC'connection with the fact that it is virtually bezvidhodna i

ecologistisubstantially pure, in schemesi inidsutni Studiї processing i decontamination of waste.

Pimeloni inidhody asi formed in the manufacturing processi iniA solution usediin detergentsito merge into consumer channelizatsiS and used for the sanitization fabric utylizuєARE in the domesticidhodamy on musorozvalysche. The insoluble residue mushroomї biomass DrivesєARE in the collectionirnyku i transferredєappear on the inshu technologistil ChNUiNiS, which is used as raw material for the production of technicalichnyh sorbentia heavy metaliini councilsionuklidiin (according to specifications) or production wouldiolohisubstantially activeї in the foodї additives "MiCotonou "(according to specifications).

Liquid extract solution saturated MMC transferredєappear on the subsequent mixing with other components of i subsequent packaging of the finished product. Fruit bodies afiloforalnyh tree destroying fungi (Fomes fomentarius (L. Fr.), Gill.) Harvested in natural conditions under state standard developed [5]. The process includes anє such a transactionїSearch hrybiv; separation from substraktu; transportation to the collection point; Sorting species traits; Previousє podribnennya large-hrybiv of size; drying, packaging, labeling and storage to furtherї processing.

Search hrybiv route scheme conducted in places most probable їx germination. As a great extent be shown on the types hrybiv rozpovsyudzheni mertviy derevyni, but some can zustrity on living trees (Fig. 1). Plodovi body can grow at an altitude Different from the base of the tree to10 meters i more. Therefore, removal of fungi recommendєARE apply dovhi industrial ladder or pole.

Fig. 1. Placing the fruiting body of the fungus (Fomes fomentarius *(L. Fr.), Gill.)*on the trunk of a birch.

Another manufacturing operations in the process vyrobnytstva mikobiopreparativ provides shredding fruiting bodies of fungi (Fomes fomentarius (L. Fr.), Gill.).

Subsequent manufacturing operations in the process of production is mikobiopreparativ extraction of fungal biomass for alkaline extract. This operation is performed in an industrial reactor with optimized components and material balance at reasonable time intervals of operation.

The resulting liquid alkaline extract of mushrooms should be separated from the insoluble residue fungal biomass for this use in the process filtering process operation by using special filters or centrifuges. When creating a pilot plant centrifuge practical application.

The final process operation is getting mikobiopreparatu mixing the resulting alkaline extract with components that enhance storage product and expansion of action under the proven biological efficacy. As a result of research we extract was obtained from chitin, which showed high activity elisytornu. Based on this extract developed Chemical fertilizers "Mikosan" in two versions: "Mikosan-N" for pre-treatment of seeds, bulbs, tubers, roots of seedlings and saplings, and "Mikosan-V" for processing plants during growth.

Conclusions

1. Relevant and promising area of plant protection from diseases is the stimulation of plant defense mechanisms by using mikobiopreparativ based on chitin-glucan complex of fungal origin.

2. The main raw material production mikobiopreparativ proposed and investigated fruiting bodies of fungi afiloforalnyh natural origin (Fomes fomentarius (L. Fr.), Gill.), Growing on birch, poplar and alder.

3. Researched and developed biotechnological production process mikobiopreparatu fruiting bodies of fungi are new scientific solution in the field of plant protection agents and is commercially competitive and attractive.

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Abstract.*Yzlozhenы Fundamentals razrabotannoy production technology mykobyopreparata IZ plodovыh tel mushrooms (Fomes fomentarius (L. Fr.), Gill.). Razrabotannaya TECHNOLOGY vkljuchaet workpiece mushrooms, drying and storage s, yzmelchenye, эkstraktsyyu, otdelenie zhydkoy fraction, smeshyvanye components.*

Keywords: Mushrooms, yzmelchenyya, эkstraktsyya, mykobyopreparat, protection of plants, chitin, glucans, byofunhytsyd, byolohycheskaya Efficiency

Annotation.*Bases of developed technology of production of mikobiopreparat, are expounded from the fruit bodies of mushrooms (Fomes fomentarius (L. Fr.), Gill.). The developed technology includes the purveyance of mushrooms, drying and their storage, growing, extraction, separation of liquid faction, mixing of components.*

Key words: mushrooms, growings, extraction, mikobiopreparat, defence of plants, chitin, glukans, biofungicide, biological efficiency shallow

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ORGANIZATION OF INDEPENDENT AND EXTRAMURAL STUDY OF UNIVERSITY STUDENTS WHILE STUDYING "OCCUPATIONAL HEALTH AND SAFETY" SUBJECTS

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Annotation.*Organization of independent study of University students consisting of "Occupational Health and Safety" subjects is characterized by certain features due to the need to motivate students in order to shape OHS overlook. In addition to traditional forms, that kind of independent study should provide training to participate in business games; analysis of work situations, in particular the development of workplace passports; presentation of scientific research findings in order to attend the conference.*

Key words: *"Occupational Health and Safety" Course Unit, students independent study, shaping OHS overlook*

Introduction. Now, referring to the Bologna Declaration and the Regulations "On organization of educational process in higher educational institutions", approved by the Ministry of Education of Ukraine from 02.06.1993 g. Number 161, Higher Education Institutions (HEIs) are paying great attention to the implementation of different types of

independent study in the learning processes. Independent study is viewed as an important instrument of learning outside the classroom studies.It is found that when students work on their own tasks, ranging from awareness of the problem to the analysis of the results, the rate of assimilation of useful information close to 90 % [1].

"Occupational Health and Safety" course units are focused not only on familiarization of students with scientific and practical bases of these subjects, but also on their acquisition of a high level of knowledge and skills concerning Occupational Health and Safety.This can be achieved