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**THE PHYSIOLOGICAL PROCESSES INTENSUTY IN THE MUSHROOMS
OYSTER PLEUROTUS**

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Statistical data of Food and Agriculture Organization of the United Nations indicated that supply population of our planet food is a cause concern. The main problem is the lack of protein and its imbalance in the diet of people. In last decade indicated a rapid increase of production and consumption of cultivated edible mushrooms in fresh and processed form. Scientists projected that in the future much of human needs in proteins will be supply by industrial production of edible mushrooms [1, 2]. It should be noted that Ukraine due to favourable geographical

location and climatic conditions, has the opportunity in the future to become a major supplier of fresh and processed mushrooms to Europe. Today in our country the leading place among cultivated mushrooms had Oyster Pleurotus.

In the processes of storage mushrooms its commercial quality lost [3]. Promising is the use of technologies that provide more long-term preservation as mushrooms and due to intensity inhibition of physiological processes.

One such way is the short post-harvest handling of products by low concentrations of carbon dioxide, a so-called oxygen stress [4].

Therefore, the aim of our study was to determine the effect of postharvest handling mushrooms Oyster Pleurotus by carbon dioxide on intensive flow of physiological processes in them.

In studies used mushrooms of Oyster Pleurotus of strain NK-35 and Amycel 3000 from the collection of living plants higher edible mushrooms Institute of Botany after M.G. Xolodnogo of NAS of Ukraine. These strains are widespread, highly suitable for growing all year round and for general purposes.

Postharvest handling of mushrooms by carbon dioxide carried in hermetically sealed experimental chambers KX-6Y with volume of 6 m³. Gas filed in the required concentrations using flowmeter brand PM-2,5 ГY3. Stirring gas environment carried out by the fans.

Experimental variants of mushrooms Oyster Pleurotus handling the following regimes: 20% CO₂ during 2, 12 and 22 hours. Control experiments were these mushrooms without handled carbon dioxide. Further processed products were stored at temperature 1°C during 6 days. In the production determine intensity of physiological processes: evaporation moisture, breathing intensity and intensity of heat emission.

For determine the influence of handling by carbon dioxide on the intensity physiological processes in mushrooms, they handling by carbon dioxide with concentration 20% during 2, 12 and 22 hours and kept at optimum temperature 1°C during 6 days.

The basic percentage of natural loss during storage of mushrooms makes up the loss of water due to evaporation, because of difference of pressure of water vapour. This percentage depending on the strain of mushroom and handling regime was within 75.0- 83.8%.

The results of studies of the dynamics of breathing intensity mushrooms show that after cutting the fruit body quantity highlighted of carbon dioxide begins to increase rapidly and then at the storage is reduced due to low temperature. Postharvest handling of carbon dioxide significantly effect on the amount of

highlighted CO₂, especially in the first 3 days. There is a tendency that with increasing duration of handling by CO₂ process of breathing is inhibited. The least intensive this process carries out at the regime handling 20% CO₂ during 22 hours.

So, for mushrooms Oyster Pleurotus strain HK-35 after a day storage quantity highlighted of CO₂ in the experimental variant was 7.4 but in the control – 11.1 mgCO₂/kg·h; two days – 9.9 and 12.5 mgCO₂/kg·h; three day – 5.6 and 7.1 mgCO₂/kg·h, respectively. Further breathing intensity control and experimental variants gradually is equalized and on the end of storage difference not significantly (2.9-2.3 mgCO₂/kg·h in research variants but 2.9 – in the control).

Based on data from the breathing intensity were calculated heat emissions of mushrooms, which changes similarly.

Short postharvest handling mushrooms by carbon dioxide with concentration 20 % during 2 to 22 hours has affected on the average heat emission of Oster Pleurotus during its storage. The biggest difference in heat emission values observed in mushrooms up to 3 days of storage. At the end of storage (6 days) the intensity of heat emission for nearly all regimes of handling coincides with the control.

Short postharvest handling of mushrooms by carbon dioxide with concentration 20% effects on the intensity of physiological processes that take place in mushrooms during storage, particularly on the breathing intensity, intensity heat emission and moisture evaporation.

The most effective the regime is handling mushrooms by carbon dioxide with concentration 20% during 22 h, which gives the best result reducing of the breathing intensity and intensity heat emission in the first three days of storage.

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**Матеріали МІЖНАРОДНОЇ НАУКОВО-ПРАКТИЧНОЇ
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