

BIOPREPARATION AND PROCESSING TECHNOLOGY TO INCREASE THE STORAGE OF POTATO PRODUCTS

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ABSTRACT

“Technology of prolonging the storage period of potatoes with the help of Zamin-M biopreparation” on the effect of processing with the biopreparation Zamin-M (based on *Bacillus subtilis*, *Bacillus megaterium* and *Pseudomonas stutzeri* strains) on the storage period and the technology of extending the storage period. information is provided. The dependence of the storage period of the potato tuber with biopreparation on the temperature regime is shown. Research on the preservation of potato tubers was conducted at Termiz State University.

Keywords: potato, dormancy period, biopreparations, Zamin-M, treatment period, storage period.

INTRODUCTION

Potatoes are the main food crops on our planet. Maintaining potato quality is critical for the seed, fresh and processing industries. The industry has always innovated and improved post-harvest storage of investments. However, the pace of technological change has increased and will continue to increase. For example, more stringent legislation and changing consumer attitudes have fueled interest in developing alternative or complementary treatments to traditional post-harvest chemical weed control and disease control. Potato tubers (*Solanum tuberosum*) have been cultivated for over 6,000 years. Currently, potatoes are the fourth most cultivated crop in the world, with an annual output of . Among the current problems of the potato industry, maintaining the quality of the bush during storage, preventing the growth of potato tubers, is a very important stage for managing the quality of potatoes during storage.

Research methods and techniques.

Experiments were conducted at Tashkent State University in September and October 2023. Potatoes were treated with bacterial preparations on the basis of generally accepted methods for storing potatoes, and the storage period of potatoes was continued for 14 days in a warehouse at a temperature of 18 OC. After the treatment period, the temperature was lowered intensively by 0.5-1 oC during the day. Then, all experimental variants were kept for 1 month at 4±1 OC relative humidity of air at 90-

95 0C recommended for storage of edible potatoes. Potato tubers treated with biopreparation were treated for 10-15 days at a temperature of 18 0C. The cooling period was reduced by 1 0C every 2 days at a temperature of 14-18 0C, and after 32 days it was transferred to the wintering period. During the winter period, the temperature regime was 30C and the air humidity was 85-95%. Experimental and control options were placed in the warehouse, processing was carried out at two different temperatures: the treatment period was $18 \pm 1 \text{ }^\circ\text{C}$ -14 days and the storage period was 21 days at $3 \pm 1 \text{ }^\circ\text{C}$.

According to the technology of potato storage with the help of biopreparation, the process of potato storage was carried out according to the following scheme: treatment of potatoes with a biopreparation → treatment → storage → winterization was carried out.

The natural decrease in potato mass during storage. The analysis of some indicators of Arizona and Evolution potato varieties treated with Zamin-M biopreparation is presented in the following pictures.



Fig. 1. Biopreparat not sprayed.



Fig. 2. Biopereparat is sprayed

During the tests, these biological preparations showed a high efficiency of use, which increases the volume of production and the time of sale of the product. The purpose of this work is to develop a new method of extending the shelf life of the biopreparation Zamin-M.

CONCLUSION

Industry and academic communities must work together to ensure the quality of potato chips in the future, taking into account consumer preferences. The use of Zamin

M biopreparation in combination with molecular and improved methods to improve the knowledge of mechanisms mediating physiological effects during post-harvest storage and processing improves the quality of potatoes. This collaborative effort will benefit the creation of new varieties with improved traits and provide guidance for sustainable agricultural techniques and conservation strategies. At the same time, there is a need to adopt and further implement alternative pre-harvest and post-harvest technologies by the potato industry.

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