RESEARCH AND ANALYSIS OF MODERN TECHNOLOGIES FOR SEASONAL PREPARATION OF PATIO FACILITIES

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Abstract. Annotation: this article presents the main stages of the process of growing silk stumps for silk production and provides a review of the literature on the seasonal preparation of silk Bud nests.nnotation: this article presents the main stages of the process of growing silk stumps for silk production and provides a review of the literature on the seasonal preparation of silk Bud nests. The main influencing factors are an.

Keywords: Textile industry, silk cocoon, silkworm house, silkworm , quartz light, disinfection , device

Аннотация. В статье рассматриваются основные этапы производства коконов и проводится обзор литературы по подготовке шелководческих помещений для процесса выращивания шелкопряда. Анализируются ключевые факторы, влияющие на процесс, и обозначаются ожидаемые результаты правильной сезонной подготовки. Включены практические рекомендации по улучшению условий, дезинфекции и освещения.

Ключевые слова: Текстильная промышленность, шелковичный кокон, шелководческое помещение, шелкопряд, кварцевое освещение, дезинфекция, устройство

Annotatsiya. Ushbu maqolada ipakchilik uchun ipak qoqonlarini yetishtirish jarayonining asosiy bosqichlari taqdim etiladi va ipak kurtaklari uylarini mavsumiy tayyorlash bo‘yicha adabiyotlar sharhi beriladi. Asosiy ta’sir etuvchi omillar tahlil qilinadi hamda samarali tayyorgarlikning kutilayotgan natijalari ko‘rsatib o‘tiladi. Amaliy tavsiyalar – atrof-muhit sharoitlari, dezinfeksiya va yoritish tizimlarini yaxshilash bo‘yicha keltirilgan.

Kalit so‘zlar: To‘qimachilik sanoati, ipak qoqoni, ipak kurtak uyi, ipak kurtagi, kvarts yoritgichi, dezinfeksiya, qurilma

INTRODUCTION

The development of the textile industry, particularly the silk production sector, is closely linked to the effective organization of silkworm rearing processes. One of the most critical stages in this field is the seasonal preparation of patio facilities and silkworm houses, which directly affects cocoon quality, productivity, and overall production efficiency. In recent years, the rapid advancement of digital

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technologies and innovative technical solutions has created new opportunities for improving traditional silkworm farming practices.

Seasonal preparation involves a complex set of measures, including cleaning, disinfection, environmental control, and technical readiness of facilities. Failure to properly implement these measures can lead to unfavorable microclimatic conditions, increased disease risks, and reduced cocoon yield. Therefore, the application of modern technologies, such as digital monitoring systems, automated control devices, and advanced disinfection tools, has become increasingly important in ensuring optimal conditions for silkworm development.

In the context of global digitalization, integrating software-based management systems into the preparation and operation of patio facilities allows for more accurate planning, real-time monitoring, and effective decision-making. These technologies not only improve biological safety and production stability but also contribute to resource optimization and labor efficiency. This research aims to analyze modern technologies used in the seasonal preparation of patio facilities, assess their effectiveness, and identify key factors influencing the successful organization of silkworm farming processes.

Silk fiber, which has a place in the raw material base of the world's textile industry, is distinguished by its elegance and softness, has its buyers in the world market, and since it is considered more valuable than other fibers, special attention is paid to reducing its production and cost, and preserving its naturalness.

Current on the day world textile in the market of silk share very small - from 0.2 % less . In this regard 70 of the world close in countries silk working is released .

The largest silk producers and suppliers to the world market are China and India. One tenth of the world's silk is produced by Brazil, North Korea, Thailand, Uzbekistan and Vietnam. Currently, the sericulture sector in Uzbekistan helps to provide employment to the rural population and, by providing well-paid jobs, prevents population migration to large cities, does not require large investments and special attention is paid to the supply of silk raw materials, which are valuable for the textile industry.

Considering the main stages of the cocoon production process, preparing these worm houses for the worm rearing process is one of the current issues. It is known that currently, disinfection and preventive work is not carried out in the worm houses where silkworms are reared before the rearing season, or even if it is carried out, it is transferred to the name. As a result, during the silkworm rearing process in the worm houses, diseases are observed in the silkworms and their death. As a result, it affects the productivity of obtaining quality cocoons.

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In order to solve this problem, a number of works are being carried out by domestic and foreign scientists. Based on this, we consider the implementation of worm farms using traditional methods before raising silkworms by implementing modern advanced mechatronic systems into the process to be one of the modern methods of today .

Implementing the required disinfection of cocoons using modern mechatronic devices will help prevent quality deterioration of silk and cocoons and ensure that the market receives high-quality silk and other materials.

A number of well-known foreign scientists have made a significant contribution to solving issues such as controlling the disinfection and preventive work of wormholes using a mechatronic system to prevent deterioration of silk and cocoon quality, disinfection using quartz light, chemical poisoning, water vapor (heat), radioactive rays (in a hermetically sealed state), using electric voltage and frequencies, creating a cold environment (freezing), and controlling preventive work in vacuum conditions using a mechatronic system. For example, LNGrabov (Ukraine), VRBorovsky (Russia), KM Rozhdestvenskaya (Russia), SN Korytko (Czech Republic), NVKorneyeva (Poland), MILuzin (Yugoslavia), PTPivovarov (Azerbaijan), SNShenkov (Germany), LALapidus (Hungary), IMDolidze (Georgia), AAKopev (Poland), ISPavlov (Russia), LAFinkel (Germany), B.YA.Khaimov (Kyrgyzstan), UFArifov (Russia), GAKleinlar (Poland), ADAbramov (Kazakhstan), SAGinzburg (Germany), J.Murodov (Kyrgyzstan) R.Baydzhanov (Kyrgyzstan) and others.

Also, prominent scientists of Uzbekistan, such as Sh.A. Kadyrov, K.R. Avazov, A.M. Mamatkhanov, III.Ibragimov, A.K. Karimov, XX.Jabborov, R.Mukhamedjanov, EXTadzhiyev, SF.Parpiyev, A.Turdiboyev and O.Khaliqnazarov, conducted scientific work in this field.

Analyzing the work of foreign and local scientists in this field, the goal and task is to increase the quantity of quality cocoon products by creating equipment to control the disinfection and preventive work of wormholes using a mechatronic system to prevent quality deterioration of silk and cocoons.

In the process of implementing these goals and objectives, a hierarchical control system and the factors influencing it are selected. One of them is to use various types of tools to effectively influence the effect of light , as well as various types of equipment and devices used to increase the productivity and capabilities of wormholes. To increase the light insulation of wormholes in the optimal control mechatronic system, aluminum foils were used on the inside of the wormholes.

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Figure 1. The aviary internal from the side quartz rays with processing to give for used aluminum foil

The aluminum foils used serve to properly direct the light and increase efficiency, and serve several purposes.

In order to solve these tasks:

- Study the specific functions and operating principles of quartz beam focusing equipment in disinfection operations;
- Determining the requirements for mechatronic system equipment in the process of controlling preventive work in wormeries using a mechatronic system to prevent quality deterioration of silk and cocoons;
- creation of a new system for controlling preventive work in silkworm cocoons using a mechatronic system to prevent quality deterioration;
- development of a mechatronic system that controls the preventive work of wormholes to prevent deterioration of silk and cocoon quality;
- It is intended to bring the system to the state required by the advanced era by conducting experimental testing results and justifying the parameters of the optimal operating modes of the system.

CONCLUSION

In conclusion, it can be stated that in the era of advanced digitalization, the application of modern technologies in the seasonal preparation of patio facilities plays a decisive role in improving the efficiency of silkworm farming. The integration of digital monitoring systems, modern software tools, and innovative organizational devices enables comprehensive control over environmental parameters such as temperature, humidity, lighting, and sanitation. This ensures that worm houses are prepared in accordance with biological and technological requirements before the rearing process begins.

Furthermore, the effective implementation of modern disinfection methods, including the use of quartz lighting and specialized devices, significantly reduces the risk of diseases and creates a stable and hygienic environment for silkworm development. Proper planning and rational use of these technologies not only

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enhance cocoon quality but also optimize labor productivity and resource utilization.

As a result, the adoption of advanced technological solutions in the preparation and management of patio facilities contributes to sustainable development of the textile and silk industry. It allows producers to achieve higher yields, improved product quality, and greater economic efficiency, while meeting modern standards of biosecurity and production management.

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