

HYGIENIC CHARACTERISTICS OF WORKING CONDITIONS IN HORTICULTURE (ON THE EXAMPLE OF BUKHARA REGION)

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INTRODUCTION

Today, horticulture is one of the key sectors of agriculture that plays an important role in the economy of our country, particularly in ensuring food security. Horticultural products are not only vital for domestic consumption but also significantly contribute to the increase of export potential. At the same time, labor activity in this field is characterized by a high level of physical exertion and exposure to numerous sanitary and hygienic factors affecting workers' health.

Key Words: Horticulture, working conditions, occupational hygiene, agricultural workers, microclimate, physical workload, pesticide exposure, occupational safety, health risk assessment, preventive measures.

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ВВЕДЕНИЕ

Садоводство является одной из ключевых отраслей сельского хозяйства, играющей важную роль в экономическом развитии Республики Узбекистан, особенно в обеспечении продовольственной безопасности страны. Продукция садоводства не только удовлетворяет внутренние потребности населения в качественных продуктах питания, но и служит важным источником экспортного потенциала, внося значительный вклад в валовой внутренний продукт страны.

Ключевые слова: садоводство, условия труда, профессиональная гигиена, сельскохозяйственные рабочие, микроклимат, физическая нагрузка, воздействие пестицидов, охрана труда, оценка риска для здоровья, профилактические меры.

Inadequate organization of working conditions leads to occupational diseases, chronic fatigue, heat exposure, dusty environments, and various allergic conditions among workers. Therefore, protecting the health of workers, improving the hygienic conditions of the work environment, and increasing production efficiency in horticulture are among the current and important tasks.

In the conditions of the Bukhara region, horticultural activities are mainly carried out outdoors, under high temperature climates, and with predominantly manual labor. This creates unfavorable working conditions for workers and negatively affects their performance and general health. Therefore, studying the hygienic aspects of labor in this region and developing practical recommendations to improve it is of great relevance.

Horticulture is one of the leading branches of agriculture in Uzbekistan and plays a crucial role in the country's economy, especially in ensuring food security. In the Bukhara region, the horticultural sector has been rapidly developing in recent years. The local climatic conditions — characterized by extremely hot and dry summers and mild winters — create favorable opportunities for the cultivation of fruits and vegetables.

However, horticultural labor is mainly carried out in open-air environments. Workers are often exposed to high temperatures, direct sunlight, dust, and various chemical substances. These factors adversely affect their health and require serious hygienic evaluation and preventive measures to improve working conditions.

The main hygienic factors influencing the work environment in horticulture include:

Climatic factors: air temperature, relative humidity, wind speed, and solar radiation intensity.

Physical factors: noise, vibration, and inadequate or excessive lighting.

Chemical factors: exposure to hazardous substances during the use of fertilizers and pesticides.

Biological factors: the impact of insects, fungi, and plant allergens.

Psychophysiological factors: physical exertion, continuous energy expenditure, and limited rest opportunities.

During the summer season in the Bukhara region, the air temperature can rise to 40–45°C, which exposes workers to heat stress. In addition, the lack of water and shaded areas increases the risk of fatigue and heat stroke among workers.

Most horticultural activities — such as planting trees, irrigation, pruning, and harvesting — are based on manual labor. In these processes, certain muscle groups, particularly in the shoulders, back, arms, and legs, are subject to significant strain. Prolonged work in static positions can cause muscle fatigue and overstrain on the musculoskeletal system.

Moreover, the long duration of work (8–10 hours per day) and insufficient rest time lead to general fatigue and mental stress. In many cases, these conditions contribute to decreased work productivity and the development of health problems.

The hygienic analysis conducted in several horticultural farms of the Bukhara region revealed the following results:

The concentration of dust in the air exceeded sanitary standards by 1.5–2 times.

The temperature regime ranged between 35–45°C, which is above the physiological norm.

The rate of protective clothing usage among workers was low (only 35–40%).

A significant portion of workers reported fatigue, headaches, and symptoms of chronic tiredness.

Purpose of the Research

To analyze the working conditions of horticultural workers, identify factors affecting their health, and develop scientifically based practical measures to improve these conditions.

Research Objectives

To study the sanitary and hygienic characteristics of the working environment in horticultural farms of the Bukhara region.

To identify the main risk factors affecting workers' health.

To analyze the relationship between working conditions and health indicators.

To develop practical recommendations for improving the hygienic conditions of labor.

Object of the Research

Workers employed in horticultural farms of the Bukhara region and their working environment.

Subject of the Research

Sanitary-hygienic, physiological, and ecological factors affecting the working conditions of horticultural workers and methods for their improvement.

Research Methods

During the research, sanitary-hygienic analysis, sociological surveys, measurement of physical parameters of the work environment, and analysis of medical data regarding workers' health were used.

Scientific Novelty

For the first time, the main hygienic indicators of the working environment of horticultural workers in the Bukhara region were systematically studied, and practical recommendations for improving labor conditions were developed.

Practical Significance

The results of the research can be used to ensure labor hygiene in horticultural farms, improve sanitary regulations, and develop effective measures to protect workers' health.

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