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ASSESSMENT OF LIVESTOCK WORKERS' HEALTH BASED ON MEDICAL EXAMINATION RESULTS.

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✓ ***Resume***

This study evaluates the health status of livestock workers based on the results of medical examinations. The research analyzes common occupational diseases, risk factors, and the impact of working conditions on employees' well-being. Special attention is given to respiratory disorders, musculoskeletal issues, and infectious diseases prevalent among livestock workers. The findings highlight the importance of regular health monitoring, preventive measures, and improvements in workplace safety to reduce occupational health risks. Recommendations for enhancing medical support and implementing effective health protection strategies are also provided.

Key words: Livestock workers, medical examination, occupational diseases, working conditions, health assessment, preventive measures, respiratory diseases, musculoskeletal system, infectious diseases, occupational hygiene.

ОЦЕНКА ЗДОРОВЬЯ РАБОТНИКОВ ЖИВОТНОВОДСТВА НА ОСНОВЕ РЕЗУЛЬТАТОВ МЕДИЦИНСКОГО ОБСЛЕДОВАНИЯ.

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✓ ***Резюме***

Здоровье рабочего класса населения является основным богатством государства и является показателем потенциальной силы общества.

С целью оценки состояния здоровья работников животноводческих ферм они проходят углубленный медицинский осмотр на основании приказа № 200 от 2012 года Министерства здравоохранения Республики Узбекистан.

Ключевые слова: Работники животноводства, медицинское обследование, профессиональные заболевания, условия труда, оценка здоровья, профилактические меры, заболевания дыхательной системы, опорно-двигательный аппарат, инфекционные заболевания, гигиена труда.

ТИББИЙ КЎРИК НАТИЖАЛАРИ АСОСИДА ЧОРВАЧИЛИК ИШЧИЛАРИНИНГ СОҒЛИҒИНИ БАҲОЛАШ

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✓ ***Резюме***

Ушбу тадқиқот тиббий кўрик натижалари асосида чорвачилик соҳасида ишловчи ишчиларнинг соғлигини баҳолайди. Тадқиқотда касбий касалликлар, хавф омиллари ва иш шароитларининг ишчилар саломатлигига таъсири таҳлил қилинади. Хусусан, нафас олиш тизими касалликлари, таянч-ҳаракат тизими муаммолари ва чорвачилик ишчиларида кенг

тарқалган инфекцион касалликларга алоҳида эътибор қаратилган. Тадқиқот натижалари мунтазам тиббий назорат, профилактик чора-тадбирлар ва иш шароитларини яхшилаш орқали касбий касалликларнинг олдини олиш муҳимлигини кўрсатади. Соғлиқни сақлаш тизимини такомиллаштириш ва самарали профилактика стратегияларини жорий этиш бўйича тавсиялар берилган.

Калит сўзлар: Чорвачилик ишчилари, тиббий кўрик, касбий касалликлар, иш шароитлари, соғлиқни баҳолаш, профильактик чора-тадбирлар, нафас олиш касалликлари, таянч-ҳаракат тизими, инфекцион касалликлар, меҳнат гигиэнаси.

Research Object (Study Object)

The research object of this study is the health status of workers employed in modern livestock complexes and the impact of occupational factors on their well-being. The study focuses on evaluating the working conditions, exposure to physical and chemical hazards, and the prevalence of occupational diseases among livestock workers.

The research specifically examines:

- Physical and chemical factors influencing workers' health, including exposure to noise, temperature fluctuations, heavy physical labor, and chemical agents.
- Occupational diseases such as respiratory disorders, peripheral nerve pathologies, musculoskeletal conditions, and allergic reactions.
- Socio-economic factors affecting workers, including wages, job satisfaction, and lifestyle habits.
- Preventive measures and recommendations for improving workplace conditions and reducing health risks in livestock complexes.
-

The purpose of the study: to develop measures for the early detection and rehabilitation of diseases among workers working in livestock farms as a result of medical examination.

Result and discussions

As a result of the medical examination, it was observed that the lor organs were registered in them. (-54.6±4.6 percent in the first group, 47.4±4.2 percent in the second group, r<0.05). Diseases of the larynx are shown in Figure 1.

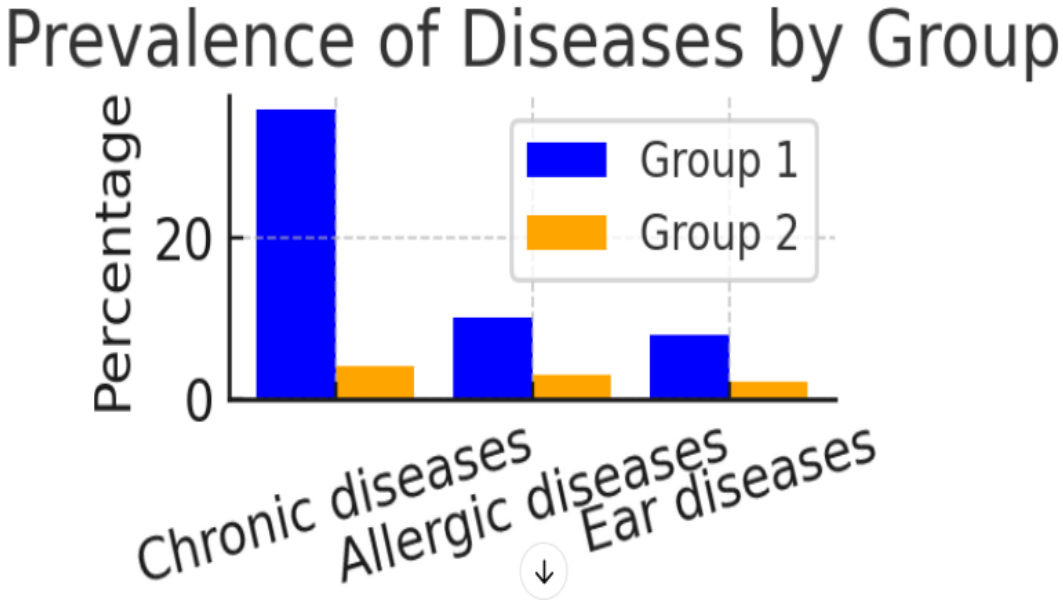


Figure 1: Prevalence of Chronic, Allergic, and Ear Diseases in Two Worker Groups

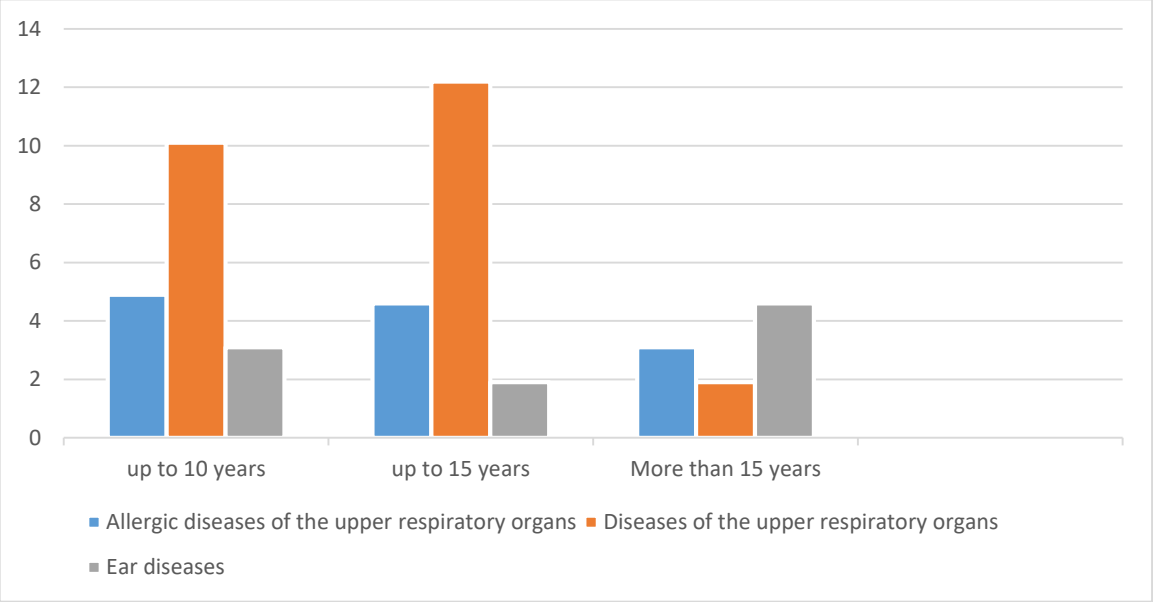
Chronic diseases – These are significantly more common in Group 1, with an approximate prevalence of 35-40%, whereas Group 2 shows a much lower percentage. Allergic diseases – Present in both groups but appear slightly higher in Group 1 compared to Group 2. Ear diseases – These conditions

are also more frequent in Group 1, although the difference between the two groups is smaller compared to chronic diseases.

The relationship between diseases of the laryngeal organs and the length of service among workers in industrial complexes is illustrated in **Figure 2**. The data presented in the figure clearly indicate that the prevalence of chronic diseases affecting the upper respiratory tract is strongly correlated with the duration of employment. As employees accumulate more years of service, the incidence of chronic conditions tends to rise, highlighting the prolonged exposure to occupational risk factors.

However, a contrasting trend is observed in allergic diseases. The data suggests a decline in allergic conditions as work experience increases. This decrease can be attributed to the body's gradual adaptation to workplace environmental factors, reducing hypersensitivity reactions over time. The immune system may develop a form of tolerance to the allergens frequently encountered in the work environment, leading to a lower incidence of allergic diseases in more experienced workers.

Further analysis of the data confirms a significant relationship between work experience and the prevalence of upper respiratory conditions. Chronic diseases exhibit a rising trend with longer service duration, whereas allergic diseases show a declining pattern, likely due to physiological adaptation. These findings emphasize the need for targeted occupational health interventions, particularly for long-term workers, to mitigate the risks associated with chronic respiratory conditions.



It should be noted that more than 50% of the examined workers were found to have respiratory tract pathologies, while approximately one-third suffered from upper respiratory tract allergies. These findings highlight the significant impact of occupational exposure on workers' respiratory health.

Furthermore, medical examinations revealed a high prevalence of peripheral nerve and musculoskeletal system diseases among the workers. These conditions were observed at an alarming rate, indicating that workplace factors contribute significantly to their development.

According to scientific literature, physical stress is a major contributing factor to muscle and peripheral nerve pathologies [2]. Consistent with these findings, our study also documented a high incidence of peripheral nerve injuries, particularly affecting the back and upper limbs. These results underscore the necessity of implementing preventive occupational health measures to reduce the risks associated with prolonged physical strain and exposure to workplace hazards.

Table 1 shows the prevalence of diseases of the peripheral nerves and musculoskeletal organs among workers-servants of the livestock complex.

1 table

Prevalence indicators of diseases of the peripheral nervous and musculoskeletal systems (in percentage terms)

T/r	Diseases		Professional groups	
			1 group p =100	2 groups p =90
1	Bone and joint diseases	Polyostechandrosis	4.0±2.10	5.8±2.12
		Shoulder-scapular priorosis	18.7±3.7	11.2±3.12
		Shoulder epicondylosis	28.4±4.9	22.6±4.9
2	Vertebrogenic radiculopathy and muscle-reflex diseases	Lithuania	18.2±3.09	5.4±2.14
		Cervicalgia	28.4±4.6	22.6±4.9
		Thoracalgia	6.8±2.0	5.6±1.90
		radiculopathy	1.6±1.0	1.1±1.20
3	Neuromuscular diseases of the hand	Vegetomyalgia	3.6±1.9	0
		Vegetosensor polyneuropathy	10.6±2.8	0
4	Registration of peripheral nerve and musculoskeletal diseases		40.1±3.65	59.2±4.4

Significance is p<0.05

This analysis highlights the significant prevalence of muscular-reflex osteochondrosis of the spine, particularly among workers engaged in heavy physical labor involving frequent bending, lifting, and moving heavy loads. The data indicate a 38.6±3.80% prevalence of these conditions in the 1st group, compared to 18.4±3.60% in the 2nd group ($p < 0.05$), suggesting a strong correlation between occupational activities and spinal disorders.

Another key finding is the high incidence (17.4%) of peripheral vegetative-vascular pathologies affecting the hands. These conditions represent the early stages of vegetomialgia or vegetative-vascular polyneuropathy. Notably, 72.1% of these cases were recorded in workers from the 1st group, where physical stress on the hands is exacerbated by exposure to low temperatures.

Workers in primary occupations within the livestock complex are particularly prone to muscle injuries, periarticular tissue damage, and dysfunctions in the peripheral nervous system. Among workers handling dairy cows and beef cattle, hand-related pathologies—including periarticular, trophic, vascular, neural, and muscular injuries—are more frequently observed. Veterinary workers are also at risk, with myofascial pain syndrome, nerve branch injuries, and shoulder nerve damage being common occupational health issues.

Given the complex pathology of the muscular-nerve vessel system in workers, these conditions can be classified as occupational diseases. The structure of chronic therapeutic diseases in production departments and storage buildings within the livestock complex further underscores the occupational health risks associated with this work environment. Preventative measures, ergonomic interventions, and medical monitoring are crucial for mitigating these health risks.

Table 2 shows the prevalence of chronic somatic diseases among livestock workers.

Table 2 presents data on the prevalence of chronic somatic diseases among livestock complex workers. The findings indicate that gastrointestinal (GI) pathology is the most prevalent condition, particularly among workers in Group 1, where the incidence reaches 28.0±3.5%. This rate is more than twice as high compared to Group 2, which has a prevalence of 12.4±1.4% ($p < 0.05$), suggesting a significant occupational influence on digestive health.

Among GI diseases, cholecystitis is the most frequently diagnosed condition, with an incidence of 8.5% in Group 1 and 4.9% in Group 2. Other common disorders include pancreatitis, which affects 4.8% of Group 1 and 2.2% of Group 2, as well as stomach and intestinal ulcers, accounting for 3.6% of cases.

The high prevalence of gastrointestinal disorders in Group 1 workers may be attributed to factors such as irregular eating habits, stress, physical exertion, and exposure to workplace environmental conditions. These findings highlight the need for targeted health interventions, dietary monitoring, and workplace wellness programs to reduce the risk and impact of chronic GI diseases among livestock workers.

The study found that gallstone diseases, detected via ultrasound scanning (UST), accounted for 2.2% of cases among workers.

The prevalence of vegetative nervous system diseases was notably higher among workers in Group 1 (19.4±3.1%) compared to Group 2 (12.1±2.6%). Scientific research suggests that vegetative nervous system dysfunction plays a crucial role in the development of cardiovascular diseases, including arterial hypertension and ischemic heart disease.

The incidence of cardiovascular system diseases was 17.1±2.6% in Group 1 and 12.4±2.1% in Group 2. The data indicate that age and work experience significantly impact the prevalence of arterial hypertension, with higher rates among older workers and those with prolonged occupational exposure (8.9% in Group 1 vs. 6.7% in Group 2).

Among bronchopulmonary diseases, chronic bronchitis was the most frequently diagnosed condition, affecting 4.4% of Group 1 and 2.1% of Group 2. Some cases of chronic bronchitis were associated with respiratory failure, while others presented asthmatic syndrome, indicating varying degrees of disease severity.

These findings highlight the occupational health risks associated with livestock work, emphasizing the importance of regular medical monitoring, preventive measures, and improved workplace conditions to mitigate the impact of these diseases.

The **comparative assessment** of **occupational hazards** and the **prevalence of work-related diseases** among livestock workers is presented in **Table 3**. This table highlights the **etiological contribution** of occupational factors to workers' health conditions.

- The data suggest that all the mentioned diseases have a moderate correlation with occupational exposure.
- Although none of the pathologies are classified as exclusively work-induced, occupational factors significantly contribute to their development and progression.
- The analysis reinforces the importance of preventive measures, including ergonomic workplace improvements, protective equipment, and regular health monitoring to mitigate occupational health risks.

3 tables

The share of etiological risk to the health of workers and employees of the livestock complex and production

Diseases	Risk assessment		
	Relative risk RR	Etiological share EF percent	Dependency level
Allergosis of upper respiratory organs	1.5 1.8	35.2 44.1	Average average
Peripheral nerve and musculoskeletal diseases	1.6	30.6	Average
Diseases of the gastrointestinal system	1.9	41.8	Average

We used the method of correct standardization (98) in the analysis of the main diseases of livestock complex workers. This method allows comparing objective clinical assessment and workers' self-assessment of health.

2 tables

Indicators related to the prevalence of chronic somatic diseases among workers-servants of livestock complexes (percentage).

Group	Work stash year	Gastrointestinal diseases						Cardiovascular diseases			Vegetative nervous system	Chronic bronchitis	Other pathology
		Holistic	Gallstone is sick league	Pancratin	Gall bladder muscles	Wound diseases	Total	Arterial hypertension	Neurocirculatory dystonia	Total			
1st group p=95	up to 10 years up to 15 years More than 15 years Total	3.9 0.6 3.9 8.5	0.6 1.4 2.1 2.2	0.5 0.6 4.2 4.8	2.1 0.7 2.2 4.6	0.5 - 2.9 3.6	28.0	0.6 0.5 8.2 8.9	1.1 2.4 3.6 8.3	17.1	9.1 0.5 9.8 19.4	0.6 1.2 3.6 4.4	2.9 0.6 1.5 12.6
2 chi Group P = 75	up to 10 years up to 15 years More than 15 years Total	1.0 1.1 2.9 4.9		- - 2.2 2.2	1.1 - 1.2 2.2	- - 1.1 1.1	- - - 12.1	1.3 1.3 5.2 6.7	1.1 1.1 2.9 4.9	12.4	3.8 - 7.6 12.1	- - 2.1 2.1	- - 1.1 8.6

Conclusions

1. During the work process in modern livestock complexes, workers are exposed to a combination of physical, chemical, and environmental factors, along with harsh working conditions. The hygienic assessment of the working environment for employees engaged in primary occupations indicates that their working conditions correspond to class 3.1-3.2, signifying a moderate to high level of occupational hazards. The subjective perception of working conditions by employees aligns with the objective assessment of workplace factors, including physical strain, chemical exposure, and overall work environment.
2. The results of a social survey revealed that a significant percentage of workers were dissatisfied with their monthly wages and the severity of their working conditions. The survey also highlighted a low prevalence of a healthy lifestyle among employees. A substantial percentage of workers admitted that they do not engage in regular physical exercise, while others reported that they spend their free time engaged in activities such as personal gardening rather than active rest or recreational activities. This suggests a lack of structured programs to promote workers' well-being and physical fitness.
3. Medical examinations conducted among workers revealed a high prevalence of occupational diseases, including laryngeal diseases, upper respiratory allergies, peripheral nerve disorders, and musculoskeletal system pathologies. These health issues were observed in at least 10% of the workforce. Statistical analysis confirmed that these diseases are directly linked to high exposure to occupational hazards in the workplace ($r<0.05$). The findings suggest that prolonged exposure to these risk factors significantly increases the likelihood of developing chronic health conditions.
4. The health status of workers in modern livestock complexes is determined by multiple factors. The primary influencing factor is working conditions, which include exposure to physical, chemical, and biological hazards. The second major factor is socio-economic conditions, such as wages, job security, and access to healthcare. The third factor is lifestyle choices, including nutrition, exercise, and recreational activities. Addressing these factors through workplace improvements, health monitoring, and lifestyle interventions can contribute to the overall well-being and longevity of workers in the livestock industry.

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