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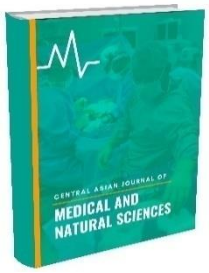

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# Sanitary and Hygienic Features of Working Conditions in Poultry Farms and Farms

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**Abstract:** Working conditions at poultry farms are inextricably linked with the specifics of the structure of the enterprise building, the method of keeping poultry is inextricably linked with the degree of mechanization of the main and auxiliary technologies used in their care, climatic, geographical conditions and time of year. Poultry farms of industrial type are characterized by a certain level of physical activity on the motor base and sensory organs.

**Key words:** Poultry complex project, technological process, climatic conditions.

Working conditions in poultry factories are inextricably linked with the uniqueness of the construction of the enterprise building, the method of keeping poultry, the level of mechanization of the main and auxiliary technologies used in their care, climate, geographical conditions, and the season. Industrial type poultry farms are characterized by a certain level of physical pressure on the organs of movement support and sensory organs.

Workers often work in customized, semi-dark rooms in white coats and white backgrounds, which causes fatigue to the eyes and the whole body.

A large amount of physical labor is performed in the chick rearing workshop, personally caring for them for 10-15 days. This is manifested in the fact that the workers' stature is in a forced working position for a long time, in the position of bending down or raising the hand when caring for birds in cages.

Animals on the ground increases, the number of hand operations increases, that is, physiologically, they bend the body from 100 to 150 times, they go from shop to shop, they walk up to 8 km in one shift. Conveyor operation in poultry slaughterhouse is done manually. This position is performed by bending the body forward several times in a forced standing or sitting position.

At a high speed of the conveyor (7.5 m/min), numerous and uniform worker movements and a short duration of the work process (2-3 seconds) lead to work monotony, straining the organs of vision and making it difficult to concentrate.

Physiological changes in the dynamics of the organism, the results of the study of the nature of the work process lead to the conclusion that:

the work of the workers working in the feed shop and egg warehouse belongs to the category of heavy physical and medium-intensity work;

the work of an incubator shop operator and a poultry keeping shop operator kept in cage batteries is of medium intensity and intensity;

the work of slaughterhouse workers is classified as medium-heavy and high-intensity;

Non-mechanized poultry houses and poultry houses are classified as labor-intensive and medium-intensive.

The work of the workers of the poultry rearing workshop belongs to class 3.1, according to the working condition of the body, it belongs to class 3.1-3.2. The work of the poultry operator of the feed store is considered to be "harmful" of the 2nd level, and "harmful" of the 1st level in terms of intensity.

Workers who take care of poultry in poultry farms stay for a long time (6-8 hours) in a building where poultry are kept in certain microclimatic conditions according to zootechnical requirements.

In the environment of cooling and heating effects of microclimate, homeostasis is maintained as a result of cardiovascular, respiratory, endocrine organs, salt-water, and protein metabolism. These determine the physiological function of the body, and the disruption of these functions increases the harmful effects of various physical and chemical factors. Under the influence of an unfavorable microclimate, the functional state of the organism deteriorates, work capacity decreases , and the level of morbidity increases.

For the first 10 days, the temperature in the chick care shop should be 35-36 $^{o}$C, then 26-20 $^{o}$C, room temperature 28-18$^{o}$C, relative humidity 55-57%, air movement speed 0.8 m/s.

But the microclimate in poultry factories does not always meet sanitary and hygienic requirements.

In the main production hatcheries and slaughterhouses, the temperature increases (28-35$^{o}$C) and the relative humidity is 78-90% in the hot and cold seasons of the year.

In the cold season of the year, the temperature in the building where chicks are kept rises to 27.6-34.2$^{o}$C. In the hot season, the temperature changes and is 16.2-35.4$^{o}$C, the relative humidity is 49-98%, and the air speed is 0.85 m/s.

In the building where eggs are laid and the industrial group is maintained, on the contrary, the temperature is kept in low conditions (3-14$^{o}$C) in winter. In this season, the relative humidity ranges from 40 to 86% and the wind speed is up to 2.0 m/s .

In the cold season of poultry keeping in ground conditions, the temperature in the building is 7-14$^{o}$C, the relative humidity is up to 75%, and the air speed is 0.9-1.0 m/s. In the hot season of the year, the room temperature is from 21 to 29$^{o}$C, the relative humidity is from 50 to 60%, and the air speed is 1.1-1.9 m/s.

In addition, most heated poultry houses have uneven horizontal temperature patterns due to non-uniform heat distribution.

The air of buildings where poultry is kept is polluted with gases, in particular, ammonia, hydrogen sulfide, intestinal gases, carbon II oxide. These gases arise from the life activity of poultry, decomposition of organic matter (feed, bedding, feathers, poultry litter). The amount of gases that appear in the air of the buildings depends on the age of the birds, the condition of their storage and the power of the air exchanger.

In addition, the mandatory use of chemicals (formalin, formaldehyde, chlorophos, various alkalis, acids) in poultry farms causes additional gases to appear in the air. The amount of gases in the air of

buildings where chickens, egg-laying birds and poultry for meat are kept is determined in accordance with zootechnical requirements in the following amounts: ammonia-10 mg/m³, hydrogen sulfide 5 mg/m³, carbon dioxide 0.2%.

In the first 10 days in the rooms where chicks are kept, it ranges from 0.7 to 10.7 mg/m³ in winter and 1.7 to 23.7 mg/m³ in summer. Ammonia was determined in the amount of 8.2 mg/m³ in the rooms where mother birds are kept (keeping birds in cage batteries) and 16.7-27.3 mg/m³ in the ground method.

During the daily mechanized cleaning of poultry waste, a low amount of hydrogen sulfide (up to 4.5 mg/m³) is determined in the air of the building. Soot gas, fatty acids, mercaptans, sulfides, indal, scotal, aerol-2 appear in the air of buildings where poultry are kept.

The air of the hatchery workshop contains formaldehyde (0.2-8.7 mg/m³) and in some cases mercury vapors appear in the air due to technical malfunctions of the equipment used in poultry care.

The amount of dust that appears in workplaces of poultry factories depends on the age of the birds and the storage conditions. A high level of dust in workplaces can be caused by the ineffectiveness of air exchangers and the improvement of poultry care technology (manual feeding of birds, poor cleaning of rooms).

Poultry factory workplaces can be extremely dusty.

The amount of dust in the air of the chick care shop in the first 10 days is 5-15.5 mg/m³, in the rooms where hens are fed, in the 60-70 days the amount of dust in the air is 12.6-44 mg/m³, in the cage batteries 3.0-48.2 is mg/m³.

In addition, the amount of dust in the rooms where chicks are kept was 2.8-10 mg/m³ in the first ten days and 29.0-30 mg/m³ in 60-70 days. The dust content of hens and broilers is 6.0-58.2 mg/m³.

During the sorting of chicks in the hatchery workshop, dust around the respiratory organs of the workers is detected in the amount of 6.0-49.0mg/m³.

In the main sections of poultry farms, the amount of dust in an average shift is determined to be 12-46 mg/m³.

The highest amount of dust around workers' respiratory organs appeared during distribution of dry feed and sorting of poultry. Despite the presence of a common air exchange system and deflectors, the amount of dust in the dry feed preparation workshop is 1.5-20.3 times higher than the permitted norm, and in the workplace of the poultry operator, it is 1.9-5.2 times higher.

poultry factories and farms is 273-680 mg/m³.

In poultry factories, organic dusts contain 3-6% clay, up to 70% wet organics, 7-10% extraction ether, feathers, pieces of chicken waste, fungi, microorganisms, combicorn dust, feed additives . Dust contains biologically active substances: vaccines, vitamins, biovitamin concentrates, enzymes, antibiotics, hormones.

The composition of organic dust consists of carbon II oxide. Dust particles can contain bacteria, fungi, insects, and they appear in large numbers.

In the results of scientific research, the amount of allergens, taking into account the protein content in it, is set at 0.1 mg/m³.

In poultry factories, conditionally pathogenic microflora (golden and epidermal staphylococci, hemolytic streptococci, Escherichia coli) and saprophytic bacteria, gram-positive spore-forming B.

subtili, B. mesentericus are more common. In addition to these, causative agents of colienteritis, anthropozoonosis-ornithosis and toxoplasmosis appear in the air of poultry factories.

The norm of microbial aerosols in workplaces of poultry factories is $5 \cdot 10^4$ cl/m³, fungi-Aspergillus SPP and Candida SPP 20 and not more than 0.04%, salmonella 0.1, Escherichia coli and hemolytic strains from 0.02% of the total amount of bacteria. it should not be much.

Although the composition of microbial aerosols in poultry factories is constant their concentration is $2.4 \cdot 10^5$ -1.4 $10^6$ kl/m³ when keeping poultry on the ground and $8.3 \cdot 10^4$ kl/m³ when keeping them in cell batteries.

Bacterial contamination of the air in the air of poultry factories in the care of birds in single-cell cage batteries was recorded from 7.5 to 22 thousand microbial bodies per 1 m³, and from 509 thousand to 1 million in their care on the ground.

Noise is another factor affecting the health of workers in poultry factories and farms. Noise affecting the workers' body comes from several sources: feed distribution, litter removal, air exchange (ventilation) from electric motors, technological equipment in shops at a frequency of 5-8 thousand noise in poultry factories and farms, feed shop, feed preparation section and workplaces of poultry-operators it is 2-9 db higher than the permissible norm. This situation was also observed in hatcheries, feed preparation and poultry slaughterhouses.

Another problem in workplaces in poultry factories and farms is lighting. According to zooveterinary requirements, lighting for poultry in the technological process of poultry farms should be 5-30 lux.

Building construction in poultry factories and farms requires the following natural lighting: 1:10-1:12 in the place where large poultry are kept, 1:8-1:10 in chick rooms, 1:20 for broiler birds, 1:12-1 for service rooms :20. In recent times, natural light is being abandoned in the poultry houses. Therefore, the work of workers is carried out in low light conditions at workplaces .

Illumination in workplaces is 22 lk in buildings where poultry are kept, 24 lk in auxiliary rooms, 19 lk in sanitary-household rooms.

In conclusion, it should be noted that despite the improvement of production technology in poultry factories (transition from ground maintenance to the cage method) and the use of technological equipment based on the needs of the times (cell batteries), they are subject to physical and nervous-emotional pressure, mixed dust, biologically active substances, microbes in the workplace. , characterized by the appearance of chemical compounds, unfavorable microclimate, low lighting, high noise level.

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