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ВИНОГРАДУ

MECHANISED POULTRY KEEPING TECHNOLOGIES

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Summary: The article provides an analysis of modern technologies and equipment for keeping production poultry. Poultry productivity is affected by feeding, housing methods, length of daylight and light intensity, temperature, humidity, gas composition and air movement speed, stocking density, etc. The use of modern equipment at poultry enterprises is an important component of complex mechanization and automation of production.

Key words: poultry, microclimate, system, ventilation, heating, egg collection, equipment, parameters.

Poultry productivity depends on many factors. It is affected by feeding, methods of maintenance, length of daylight and light intensity, temperature, humidity, gas composition and speed of air movement, planting density, etc. [1, p. 172]. Technological factors also significantly affect the level of productive qualities of poultry, which requires compliance with the established parameters of the technological process and further study of their impact on the poultry organism. It is necessary to take care of the development of technical equipment to create optimal sanitary and hygienic conditions for keeping poultry [2, p. 102]. Installation of the ventilation system in the poultry house is a necessary and important condition during its construction. Of all animals, it is especially important for poultry to provide the room where they will be kept with a significant amount of oxygen-enriched air, free from various pollutants. Equally important is the maintenance of optimal humidity

and temperature in the poultry house, which significantly reduces their morbidity [3]. A correctly selected egg collection system is currently an important component of technological equipment for keeping laying hens, as well as floor or cage keeping of the parent flock. This is due to the following three factors: reduction of labor and time costs, the highest egg quality: clean egg; minimal risk of breaking the egg; extremely accurate accounting of laid eggs by tier, row or case [4]. The productivity of the egg collection system must correspond to the capacity of the egg sorting and packaging machines.

The use of modern equipment at poultry enterprises is an important component of complex mechanization and automation of production. Different types of equipment are used to ensure all technological operations and compliance with standards in the breeding and maintenance of poultry, which allows to more fully use the genetically determined potential of poultry productivity [5]. The technological equipment is designed for lighting the room, providing a microclimate, feeding and distributing feed, feeding birds, collecting and transporting eggs, and removing droppings [6, p. 218].

Cage batteries for parent stock. Roosters and hens are kept together in cages designed for natural mating. When using artificial insemination, the rooster is kept in individual cages, and the hens are kept in 2–4 cages each in a cage. The company "Big Dutchman" produces cage batteries "Eurovent Parents" for the joint maintenance of adult cockerels and hens during natural mating. Similar equipment is produced by the firm "Techna" (Ukraine) [7, p. 191].

Distinctive features of the battery "Eurovent Parents" are: the presence of a special longitudinal perch in the middle of each tier, devices for displacing chickens from nests after laying an egg, a flat rail to reduce damage to the eggshell when rolling onto the egg collection belt, preventing eggs from being pecked by birds and litter falling into the lower one cage, as well as litter drying systems [3].

Cage batteries for industrial herd. Laying hens of an industrial flock, which are intended for the production of edible eggs, are kept without roosters. In the countries of the European Union, improved cage batteries are popular, which are designed for

Welfare technology (ensuring the well-being of chickens), which meet the requirements of bioethics of animal husbandry. Batteries of the Avipus type (Big Dutchman) and Veranda Layer (Venkomatik) are equipped with additional equipment elements that allow the bird to implement elements of natural behavior: nests for laying eggs, baths with sand and ash filler for "bathing" in this substrate, perches for rest.

Ventilation is one of the integral components of controlling and maintaining an optimal microclimate in the poultry house [8, p. 124]. Depending on the climate zone where poultry is grown and the ventilation system used, all poultry houses can be conditionally divided into open and closed types. The latter, depending on the location of the intake and exhaust equipment, can be classified into: roof, transverse (wall), longitudinal (end), tunnel, and systems with an integrated litter drying system [4].

The mixed ventilation system has become widespread in the premises of enterprises with a high density of poultry, as a result of which significant air exchange is required in the poultry house. The inflow is carried out both through the roof, where the roof fans are installed, and through the inflow valves, which are installed, if possible, at the end of the building. Exhaust fans are mounted in wall openings, high-performance exhaust fans are mounted at the end of the building opposite the place where the inlet shafts are installed.

In conditions of high summer temperatures, high stocking density has a negative effect on the physiological condition of poultry, which is expressed in a decrease in egg productivity, an increase in culling and the departure of chickens [9, p. 432]. Traditional ventilation systems in poultry houses do not allow to compensate for the negative impact of high temperatures on poultry. However, when using tunnel ventilation, the speed of air movement in the room can be easily adjusted, thanks to which it is possible to achieve comfortable temperatures for the bird even in the heat. The use of a tunnel ventilation system in rooms with poultry cages allows you to avoid the so-called air "stagnation" zones, where the speed of the flow is lower than the maximum allowable norm. Installation of exhaust fans is

carried out between the rows of cellular batteries in the required number.

The system of maintaining optimal conditions for keeping poultry is not limited to supply-exhaust ventilation [3]. It includes such integral components as equipment for heating (heating) in the cold season and cooling in the heat, as well as electronic controllers that allow automating the operation of all equipment located in the poultry house.

The following requirements are placed on egg collection systems: careful egg transportation, high functional reliability, ease of maintenance. There are three main egg collection systems: surface, elevator and elevator [10, p. 24]. The set of egg collection systems can include rotating brushes for cleaning the tape from dirt and dust, an automatic egg counter equipped with infrared sensors, and a photosensor-controlled unit for automatic speed adjustment of egg collection conveyors depending on the load of the receiving table in the egg storage. The use of an automatic counter allows you to count the number of eggs collected in one and (or) all tiers.

The analysis of modern technologies and equipment for keeping production poultry made it possible to determine their advantages and disadvantages. Thus, the system of maintaining optimal conditions for keeping poultry is not limited to supply-exhaust ventilation. It includes such integral components as equipment for heating (heating) in the cold season and cooling in the heat, as well as electronic controllers that allow automating the operation of all equipment located in the poultry house.

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