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Influence of treating laying with reagents upon microclimate of poultry yard and reproductive qualities of turkey-cocks

Aim. To investigate influence of treatment of bedding reagents on the microclimate of poultry house and reproduced indexes of turkey-cocks. Methods. In the complement of bedding added superphosphate and solution of ac.a. Studied the dynamics of humidity and pH of bedding dung, content of ammonia, carbon dioxide and to the sulphuretted hydrogen in mid air, quality indexes of sperm and incubation internalss of eggs. Results. Treatment of bedding provided the decline of content of harmful gases an ac.a. and superphosphate midair and humidity of bedding, increase of content poultry house in the bedding dung of nitrogen and phosphorus. Conclusions. The improvement of microclimate in an apartment positively influenced on the reproduced indexes of turkey-cocks.

Key words: turkey-cocks, maintenances, bedding, reagents, microclimate of poultry house, reproduced internalss.

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Entry. It is known that for maintenance of bird on bedding in mid air poultry houses content of harmful gases the basic source of that is bedding rises often [1]. Excessive maintenance of these gases midair poultry houses negatively influences on stored and productive indexes of bird, and them vent extrass - on an environment [3, 11]. In the row of works possibility of diminishing to emission of harmful gases was shown from bedding by the method of her treatment by the special reagents [6, 8, 10]. However to many from these reagents are those or other remarks in relation to safety for an environment and bird, negative influence on an equipment and quality of bedding dung as raw material for making of organic fertilizers [5, 7, 9]. From data of the searching researches conducted at the State experimental station of the poultry farming of NAAS (DDCP NAAS), to the safest reagents for treatment of bedding superphosphate and ac.a. are reckoned [2].

An aim of researches is a study of influence of treatment of bedding by superphosphate and ac.a. on the microclimate of poultry house and reproduced indexes of tribal turkey-cocks.

Materials and methods. Researches conducted in experimental poultry-farmer of DDCP NAAS. 2 groups of turkey-cocks-males of cross-country race were formed "Kharkiv", which was contained in bedding in separate isolated apartments at the standard closeness of landing and ventilation parameters. [4]. In the complement of the bedding in a section, the turkey-cocks of the experienced group were placed in that, the added reagent: superphosphate (Ca (H2PO4) 2 • H2O + CaSO4) in an amount of 0.5 kg and 9% of ac.a. (CH3COOH) is 0.5 liters per 10 kg of bedding. In case of necessity, the bedding in the experienced section has been added to a new portion of the reagents. In a section with the control group of turkey-cocks reagents did not add to bedding. Two groups of turkeys-females of the same patriotic herd of the same cross-country race are also formed, one of which was artificially inseminated by the sperm of the turkey-cocks of the experienced group, and another by the sperm of the turkey-cocks of the control group. During the period of researches studied: dynamics of humidity and pH of bedding dung, content of ammonia, carbon dioxide and to the sulfur content of hydrogen in mid air, quality of the sperm and indices of the egg incubation. At the end of experience determined chemical composition of bedding dung.

Results of researches. Experience lasted 120 days. As the got results witnessed, adding to bedding of reagents provided the substantial decline of emission of harmful gases during not less than 4th weeks. Farther added new portion of reagents. Emission of ammonia (in 2-4 times) went down most, least - carbon dioxide (in 1,1-3,1 раза) and to the sulphuretted hydrogen.

Diminishing to emission of harmful gases took place, for certain, first of all due to the decline of pH-value (pH) of bedding. If in a control apartment during the period of maintenance of turkey-cocks of pH of bedding

dung presented 8,12-8,78, then in the experienced apartment as a result of treatment of bedding by reagents - 6,26-8,23.

By other factor that provided diminishing to emission of harmful gases, in particular to the ammonia from bedding, there was their direct fastening by reagents. For adding to bedding of superphosphate in a chemical reaction phosphogypsum (CaSO4) entered with an ammonia, and also group Ca(H2PO4) 2·H2O on a chart:

CaSO4+of 2NH3+2H2O --> Ca(OH) 2 + (NH4) 2SO4,

Ca(H2PO4) 2 + 2H2O + 2NH3 --> Ca(OH) 2 + 2(NH4)(H2PO4).

Other possible chart of passing of reaction of phosphogypsum with an ammonia: 2NH3 + CO2 + H2O --> (NH4) 2CO3 - Q, CaSO4·2H2O + (NH4) 2CO3 --> CaCO3 + (NH4) 2SO4 + 2H2O.

As a result of reactions appeared sulfate to the ammonium (of NH4) 2SO4 and phosphate to the ammonium (of NH4)(H2PO4), that can be used as mineral fertilizers. Hydroxide of calcium can enter into further reactions, for example with the sulphuretted hydrogen:

H2S+ Ca(OH) 2 --> CaS + 2H2O.

An ac.a. reacted with an ammonia on a chart:

NH3 + CH3COOH --> CH3COONH4,

CH3COONH4 +H2O --> CH3COO - + NH4+.

However these reactions can take place and in reverse direction, the decline of emission of ammonia took place that is why, consider the use of ac.a., mainly due to the decline of pH of bedding dung.

On the whole, treatment of bedding assisted the increase of content select reagents in him to nitrogen on 0,31%, to phosphorus - on 0,36%, to diminishing to humidity of bedding - on 5,9-16,7% (of P<0,001).

The improvement of terms of maintenance of turkey-cocks in the experienced apartment positively influenced on their reproduced indexes (table). For the turkey-cocks of the experienced group found out anymore on the average on 0,16 mls volume of one еякуляту (of P<0,01) and on 0,71 milliards/of ml concentration of sperm (of P<0,05). For turkeies that was impregnated by sperm of males of the experienced group the impregnated of eggs was anymore on 6% (of P<0,05).

Conclusions

Adding to bedding for maintenance of turkey-cocks of paternal herd of superphosphate and 9% of th solution of ac.a. in an amount 0,5 kg of every reagent on 10 kg of bedding gave an opportunity to decrease emission of ammonia from bedding in 2-4 times, carbon dioxide - in 1,1-3,1 раза during 4 weeks from the moment of their bringing. Treatment of bedding also assisted the decline of humidity of bedding these reagents on 5,9-16,7%, to the increase of maintenance of nitrogen - on 0,31%, to phosphorus - on 0,36%. The improvement of terms of maintenance of bird in an apartment in that bedding was treated by the offered reagents positively influenced on the reproduced internalss of turkey-cocks : the volume of one еякуляту increased on the average on 0,16 mls (P<0,01), concentration of sperm - on 0,71 milliards/of ml (P<0,05), impregnated of eggs - on 6% (P<0,05).

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