THE AIR IN THE HOUSE WITH RUBBER FLOORING

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The air in the premises for keeping cattle determined by heat-humidity conditions, the balance of hazards in the volume space. Modern rubber flooring, as opposed to organic, do not provide absorption NH3. The article deals with the issue of changing air regime building on keeping cattle according to a constructive solution roofing layer floor.

The air, rubber coating, air treatment cattle.

Rapid world population growth leads to increased demand for food and the need to increase production capacity of agricultural enterprises. As a result, one of the most promising and attractive investment destinations investments in Ukraine today is agriculture.

In recent years Ukraine has seen active rehabilitation and reconstruction of a large number of businesses in growing and maintaining cattle. The process of modernization of these enterprises is accompanied by the introduction of modern equipment and materials to conduct technological cycles and processes. At the same time reconstruction of engineering systems of heating and ventilation is reduced to the replacement of obsolete equipment with modern without changing the operational parameters of operation of these systems, leading to deterioration of microclimate in the volume space and, consequently, the quality and quantity of the final product.

Depending on the technology cattle distinguish litter and manure bezpidstylkovyy, wherein the composition, method of storage and use. The method of keeping cattle defines the parameters engineering process parameters and the microclimate inside the building, including indoor air temperature, humidity, its mobility, concentration of pollutants in the volume of the room and so on. It is known that these parameters directly determine the capacity of the heating system, the working parameters of the general exchange ventilation and air conditioning, the number of original products, including milk.

Bold ammonia in the life of cattle is at the bottom of the working area of the room. In the process of evaporation from the wetted surfaces due to the fact that its density is less than the density of the air, it goes to the top of the room working area, gets to the respiratory tract of cattle and staff, impairs their health. In this regard, ammonia is one of the major hazards along with hydrocarbons and hydrogen sulfide, which measures the intensity of air in the volume of housing for cattle.

A characteristic feature of organic bedding material is absorption of ammonia, which is released during the life of cattle. This absorption of ammonia at the molecular level observed in peat litter. In other types of organic flooring observed absorption of aqueous ammonia of organic mass that periodically removed from service personnel volume of space.

The disadvantage of organic bedding material is its vidsyryuvannya during operation, leading to deterioration of sanitary welfare and reduce time off cattle within the box.

Synthetic materials used in the manufacture of rubber floor mats, unlike organic pidstylok not provide the absorption of ammonia. Application of the pidstylok rather organic, at constant system performance zahalnoobminnoyi ventilation increases the concentration of ammonia in the volume of the building to a level exceeding the maximum allowable. This leads to the deterioration of microclimate in the volume of space to hold the cattle, and consequently, the deterioration of health service staff, increased incidence of beast reduce growth of live weight and milk supply. So one of the challenges that must be addressed when replacing organic bedding on rubber mats are research intensity change of air to combat hazards in the volume of this space and system performance changes in general exchange ventilation.

The purpose of research - analysis of air changes required to combat the hazards on the premises for keeping cattle at change of bedding material for organic synthetic variable at ambient temperature.

Material and methods research. As the subject of studies reviewed barn located in the city. Poltava. Number of cattle - 50 cows, with an average weight of 500 kg each. Permitted concentration of harmful gases in the air of industrial housing for

cattle is: for carbon dioxide - 2.5 l / and for ammonia - 0,013 l /. Average hourly intensity of carbon dioxide animals - 116 l / h, ammonia - 0.424 l / h.

Depending on the allowable concentration of pollutants in mid air space for keeping cattle in air combat hazards defined by the formula [4], m3 / h:

The intensity of hazards in receipt amount of space for keeping cattle depends on its stock, supply, group membership is determined by the equation [4].

As noted earlier use of rubber pidstylok engraves cattle and microclimate parameters in the amount of space for keeping cattle by increasing the concentration of NH3. This results in the need for air not only to combat carbon dioxide but also to combat ammonia. Ammonia and carbon dioxide are of summation, under these conditions air indoors determined dependence m3 / h:

Results. The results of the calculation of changes in the intensity of air to combat carbon dioxide, ammonia, depending on changes in ambient temperature.

The analysis results are given indicating that the change of organic bedding material leads to the need to increase the intensity of air in the room for keeping cattle.

Increase air flow necessary to combat harmful gases in the volume space for keeping cattle.

Conclusions

From the calculation results, we can conclude that placing a rubber covering of litter near the improved standards of comfortable rest cattle, the increase in the number of milk cows require additional capital and operating costs for the construction and operation of the system-wide exchange ventilation barn. In particular, the required performance gains and power fans of the system-wide exchange ventilation to ensure regulatory microclimate on average will be 60%.