

EMISSION OF AMMONIA IN SINGLE TYPE LIVESTOCK BUILDINGS

Sabina Mikulionienė, Stanislovas Būdvytis, Gedvaldas Povilaitis

Lietuvos žemės ūkio universitetas, Noreikiškės, LT - 4324 Kaunas - Akademija; tel. 8 37 75 23 61;

faks. 8 37 39 75 00

Summary. The EU's General Agricultural Policy pays the greatest attention to the environmental questions and developments of ecological agriculture. While Lithuania seeks access to the European Union, it regularizes agricultural strategy and policy according to the EU. In order to fit to the new markets of agricultural production, Lithuanian agriculture requires great changes. The implementation of Lithuanian Rural Development Strategy will require many resources. That is why it is so important to use present resources, at least in the primary stage. It applies especially to the use, reorganization and readjustment of present livestock buildings for traditional as well as ecological stock-raising development. Since milk production is one of the most developed stock-raising areas, the use of present livestock buildings is economically very important. The microclimate in livestock buildings can have direct influence on the quality of milk. For this reason there were a lot of investigations on emission and elimination of gas in livestock buildings made in different countries and in this regard the amount of pernicious gas has to be estimated in every livestock building, and the means for its elimination have to be determined. The gas investigation using the Dräger's equipment system showed, that in the air of 2 places, 100 places and 200 places livestock buildings CH₄, NO and H₂S gases were not found. Ammonia was found in all livestock buildings, which amount was different in the morning, in the afternoon and in the evening. The largest amount of NH₃ was estimated before milking in the morning; in 2 places livestock building it was 8–16 ppm, in 100 places it was 5–15 ppm and in 200 places it was 0–5 ppm. In various places of livestock buildings, a different amount of NH₃ was detected. Estimated results were statistically computed by ANOVA program for EXCEL vers. 3.1 using dispersion method, which showed that the Fisher factorial mean of the most part of variants was bigger than theoretical one ($F_{\text{fact}} > F_{\text{theor}}$). That is, there are great variances in NH₃ amount in livestock buildings during different periods around the clock, which stand for $P < 0.005$ and $P < 0.001$ meanings. The smallest amount of NH₃ was found in 200 places livestock building, where extracting ventilation and steady elimination of manure was available. In order to reduce the amount of ammonia in other livestock buildings, the reconstruction of ventilation and elimination of manure from them is required.

Keywords: ammonia, emission of ammonia, Dräger's equipment system, livestock buildings.