

# Srutų rūgštinimo technologijos Baltijos jūros regione

**1. Keywords:** Slurry acidification, Soil fertilization, Ammonia emissions, Slurry acidification methods

**2. Area:** Organic Farming, Agro-environmental protection

**3. Subarea:** Slurry acidification technology

**4. Theme:** Slurry acidification technologies in the Baltic Sea region

**5. Year:** 2019

**6. Summary:** In order to reduce nitrogen losses on animal husbandry farms as the main source of ammonia emissions, farmers in the Baltic Sea region are introduced to the latest slurry acidification technologies and encouraged to implement them on their farms. These technologies will be of great benefit not only to nature, but also to farmers themselves - acidified slurry retains more organic nitrogen, therefore, crops need to be fertilized less with mineral fertilizers.

**7. More detailed version of the summary:** For more than a decade an innovative manure and slurry acidification technology created in Denmark has been used by 18% of this country's animal husbandry farms. It is considered as a completely new practice in many European countries. By sharing good practice with other countries in the Baltic Sea region, reducing ammonia evaporation and reducing the eutrophication process (algal blooms) in the Baltic Sea is expected to contribute to the region's environmental goals. According to the Danish experience, acidification of slurry can be done in several ways: 1. Acidify the slurry circulating under the barn floor (in-house technology). 2. Acidify slurry in a liquid manure tank / lagoon (in-storage) and later use it to fertilize crops. 3. Acidify slurry just before spraying (in-field). Acidified slurry can be used to fertilize a variety of crops. Soil is not acidified by acidified slurry used, and acidification does not affect soil degradation. On the contrary, it enriches soil and does not harm the microbiological activity in soil at all. If slurry is not acidified, more nitrogen and sulfur will be needed to add to mineral fertilizers. When fertilizing fields with acidified slurry, on average 9.44 percent of nitrogen content in soil increases in comparison with fields fertilized with non-acidified slurry, and in comparison with fields fertilized with mineral fertilizers, nitrogen content in soil increases by 9.41 percent. When testing this technology, detailed soil studies were performed, in which not only soil pH but also other parameters of its quality - humus content, conductivity and others - were monitored. Soil studies show that the use of mineral fertilizers acidifies the soil more than acidified slurry. This is explained by the ability of slurry to restore alkalinity quickly enough (the pH of acidified slurry is fully restored within a few weeks). Using this innovative technology, it is possible to obtain higher yield and better quality crops, while at the same time modeling natural soil formation processes so that soil is used very responsibly and rationally. The project "Baltic Slurry Acidification" in Lithuania was coordinated by the Lithuanian Agricultural Advisory Service (LAAS). The project was completed in 2019. And although animal husbandry farms in Lithuania are declining in number during recent years, they are expanding in size and this technology is useful not only for large agricultural enterprises or cooperatives. and farmers.

**8. Effect:** Agro-environmental protection, Economical, Sustainable Farming, People's health

**9. Argumentation:** Cattle manure contains more dry matter (about 10%) than pigs. The more dry matter there is, the more acid is needed to lower the pH of slurry. It is most economical when slurry pH is 6.4. To reach this pH, 3 l acid per m<sup>3</sup> (for pig slurry) is required. Emissions per kg ha<sup>-1</sup> decrease from 12.5 (without acid) to 1.7 (with 3 l/m<sup>3</sup> acid); the acidity of the slurry decreases accordingly from 7,9 iki 6..

**10. Project description:** -

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**12. URL:** <http://balticsslurry.eu/>

**13. Images:**

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**14. YouTube:** <https://www.youtube.com/watch?v=gwbXh5IRvsA&t=1s>

**15. Documents:** -