Pieninių galvijų bandos produktyvumo didinimas naudojant bandos ir šėrimo valdymo sistemas bei somatinių ląstelių skaitytuvą

1. **Keywords:** Herd management system, Feeding program, Somatic cells, Milk quality, Productivity of cows, Lactation

2. **Area:** Livestock farming

3. **Subarea:** Housing and welfare of dairy cattle

4. **Theme:** Improving productivity of dairy cattle using herd and feeding management systems and somatic cell scanner

5. **Year:** 2017

6. **Summary:** The main activity of JSC Upytes Experimental Farm is a cultivation of agricultural products (cereals, flax and other crops), dairy farming, raising beef cattle, breeding heifers and calves. The farm has 823 cattle, including 298 dairy cows and 36 Charolais beef cattle. There are also Lithuanian Red, Swedish Red and Dairy Simmental breed cattle. There are 16 workers who take care of the cattle: 6 milkers and 10 auxiliary workers. In 2017, the company implemented the following technological innovations: herd and feeding management systems and a somatic cell counter. These innovations were chosen because it is very important for the farm to reduce production costs, use information more efficiently and timely, increase productivity, improve milk quality, animal health and profitability of the farm.

7. **More detailed version of the summary:** The herd management system (HMS) made it easier to manage data of each cow: pedigree, milk per session/day/week/month/life, to monitor the cattle heat cycle calendar, and how much semen was used and its residues. The program provides up-to-date information on the cow heat cycle and health: list of drugs, voluntary waiting period, the exact time of vaccination, etc. A study on the effectiveness of the HMS was conducted with 250 cows. By analyzing the benefits of the HMS for the farm, an attempt was made to determine whether it has an impact on milk quality, animal health and farm profitability. After the installation of the HMS, it was monitored (according to the rations) whether all the feeds are mixed and in what order, how long the feed is mixed, weather all mixed feed is given to the animals. It was decided to purchase a somatic cell scanner because the number of somatic cells in milk was twice the permissible limit. 50% of the company’s veterinary costs included mastitis treatment. The somatic cell scanner was used because of a suspicion that cow was suffering from sub-clinical mastitis. The device instantly helps determine which quarter of the udder contains the inflammation and what its intensity is. Since 2017, the company's production rates have been recorded and compared with the previous situation in order to assess the benefits and impact of these investments on farm production. The analysis showed that investments had a positive impact. According to the specialists of the company, investing in a HMS is beneficial for medium-sized and large farms that want to manage their herd more rationally and easily. A feeding management system would be useful for both small and large farms, because not only the added feed is important, but also the process of adding ingredients and the time of mixing are important for the preparation of the feed. The independent consultants carried out an analysis of the company's production prior and three years after the investment. The analysis revealed that the investment had a positive effect on cow health, the lactation period has been prolonged, problematic cows were more rapidly culled, and milk quality parameters have improved.

8. **Effect:** Sustainable Farming, Economical

9. **Argumentation:** The implemented innovations had a positive effect on cow health - the cost of veterinary procedures related to mastitis treatment decreased by 4.01%. The more rapid identification and elimination of problematic cows significantly reduced their number in a herd. The age of cows increased with lactation (0.2 lactations). The milk quality parameters improved: fat increased by 0.02% and protein increased by 0.12%.

10. **Project description:** -

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12. **URL:** http://genetiniaiistekliai.lt/

13. **Images:**
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14. **YouTube:** -

15. **Documents:** Upytes_methodology.pdf