UNIVERSITY OF LIFE SCIENCES
"KING MIHAI I" FROM Timisoara
**Multidisciplinary Conference on
Sustainable Development**
30-31 May 2024

2024 MULTIDISCIPLINARY CONFERENCE ON SUSTAINABLE DEVELOPMENT

Evaluation of somatic cells count in relation to traits of milk components in breeding herd of the Slovak Spotted dairy cows

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Abstract: The aim this work was to evaluate the somatic cells count and milk components (control samples of milk production) in breeding herd of the Slovak Spotted dairy cows in the Liptov region of the Slovak Republic.

• Introduction

Milk yield, composition, and quality are important factors affecting dairy farm's profitability. Milk composition and somatic cell count (SCC) play a key role to monitor milk quality. Somatic cell count in milk is used as an indicator to monitor the degree of the udder health.

• Material and method

The material for evaluation of agricultural enterprise in the Liptov region.
A total of 342 dairy cows (2,487 control samples) from 2020 to 2024 years were observed during evaluation: milk in kg, fat in %, proteins in %, lactose in % and somatic cells count in ml^{-1}.
The basic statistical and variability characteristics were evaluated using the SAS (2016).

• Results and discussions

The basic traits of milk components and SCC in of Slovak Spotted dairy cows were 24.6 kg MY, 4.08 % FY, 3.62% PY, 4.70% LY and 403.78 cells in ml^{-1}. In the year evaluation 2020 were analysed 318 samples with 22.52kg MY, 4.07% FY, 3.53% PY, 4.61% LY and 365.11 cells x ml^{-1} SCC. In the years 2021, 2022, 2023 and 2024 was found a higher average value of the control milk yield, components and SCC. The linear model to represent R^2 on SCC was the highest effect of sire $R^2 = 0.2077$ and effect of HYS $R^2 = 0.0117$. These results are similar with conclusions of different authors, who engage in similar analysis.

• Conclusions

This study indicates that high SCC negatively affects not only milk production but also milk composition and quality.