



OPINION

on a dissertation work for obtaining an educational and scientific degree "Doctor of Philosophy" in field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional field 6.3. Animal husbandry, scientific specialty „Zoohygiene“

Author of the dissertation: Smilyana Alexandrova Tasheva, a PhD student at Department "Animal Sciences", Agricultural University, Plovdiv

Topic of the dissertation: "Effect of basic microclimatic and technological parameters on some indicators characterizing the comfort of loose housed dairy cows"

Reviewer: Assoc. prof. Dimo Prodanov Dimov, PhD, Trakia University, Stara Zagora, Faculty of Agriculture, field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional field 6.3. Animal husbandry, scientific specialty „Zoohygiene and organization of veterinary services“

Appointed as a member of the Scientific jury by order No. RD-16-1233/ 21.11.2022 of the Rector of AU - Plovdiv.

1. Relevance of the problem.

The development of the cattle breeding practice requires attention to improving the living conditions of the productive animals and providing their necessary comfort. The evaluation of these parameters requires the use of new, complex approaches and methods, and one of them is the quantification of the comfort of dairy cows by using the comfort indices and evaluating the influence of microclimatic indicators in cattle buildings on their values.

In this regard, the topic of the present study is relevant and significant for the development of dairy cattle breeding.

2. Aim, tasks, hypotheses and research methods.

The purpose of the dissertation clearly, accurately and correctly reflects the essence of the study. For its implementation, 6 tasks have been accomplished, which emphasize the individual aspects of the overall study. The tasks and the sequence in which they have been performed are completely sufficient to achieve the intended goal.

3. Visualization and presentation of the obtained results.

The dissertation submitted to me is written in 154 pages of main text, including an introduction, four main chapters, a summary, 12 conclusions, 4 recommendations, 5 contributions and a list of references from 258 sources. It is illustrated with 34 figures, graphs, 22 photographs and 28 tables. The dissertation also includes mathematical dependencies. All are appropriately and well laid out and convincingly illustrate the

results obtained.

4. Discussion of results and references used.

The analytical and experimental data from the conducted research are presented in separate sections of the dissertation, in a logical sequence according to the tasks set. The obtained results are competently analyzed and interpreted and are clearly presented in tables and graphs.

Through an in-depth analysis of field research records, the PhD student establish the influence of certain factors on the comfort of dairy cows.

The literature review is very well developed. All aspects of the issues under consideration are covered. The majority of cited publications are by foreign authors. Innovative studies and indexes are indicated.

5. Contributions of the dissertation.

I accept the contributions formulated by the author. 5 contributions are presented.

Scientific contributions

1. The assessment of the barn environment has been extended, and THI data have been compared and supplemented with the temperature tolerance coefficients of Benezra and Dmitriev.
2. A dependence between THI and comfort indices in buildings for dairy cows has been established.
3. Changes in biochemical parameters and metabolic processes related to seasonal fluctuations in temperature and THI were found.
4. A dependence was established between the comfort indices and the percentage of cows suffering from technopathies. The CCI and SUI indices have the highest effect on all the diseases included in the study ($p \leq 0.01$ and 0.001), while the stall standing index (SSI) strongly affects the percentage of metabolic diseases ($p \leq 0.01$ / and weakly on the various forms of mastitis ($p \leq 0.1$).

Scientific and applied contributions

A complex methodology was applied to assess the conditions of comfort for dairy cows, including a study of the influence of the natural and climatic conditions of the area, the construction-constructive and technical-technological features of the buildings, their thermal technical capabilities, quality and efficiency of the ventilation system, physical, biological and mental condition of animals and possibilities for prevention of basic diseases.

6. Critical Notes and Questions.

The dissertation work and materials on the procedure presented to me do not give me grounds for critical notes. At a meeting of the extended department council, I pointed out some omissions and inaccuracies, which were removed in the final version of the dissertation.

7. Published articles and citations.

5 scientific publications are presented, four of them in English and one in Bulgarian. In two of the articles, the author is first author. Three of the articles have been reported at scientific conferences.

The presented abstract reflects objectively the structure and content of the dissertation work.

CONCLUSION:

Based on the various research methods learned and applied by the doctoral student, the correctly performed experiments, the generalizations and conclusions made, I believe that the presented dissertation meets the requirements of the LDASRB and the Regulations of the Agricultural University for its application, which gives me reason to evaluate it POSITIVE.

I allow myself to propose to the honorable Scientific Jury to also vote positively and award Smilyana Alexandrova Tasheva the educational and scientific degree " Doctor of Philosophy" in the scientific specialty "Zoohygiene".

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Plovdiv

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