



## STATEMENT

on a dissertation work for obtaining the educational and scientific degree "PhD" in: field of higher education 6. Agricultural sciences and veterinary medicine, professional direction 6.3 Animal husbandry, the scientific specialty Zoohygiene

**Author of the dissertation:** Smilyana Alexandrova Tasheva - full-time PhD student at the Department of Animal Husbandry Sciences at the Agricultural University, Plovdiv

**Topic of the dissertation:** "Influence of basic microclimatic and technological parameters on some parameters characterizing the comfort of free-range dairy cows"

**Reviewer:** Prof. Yovka Miteva Popova PhD; Agricultural Institute – Stara Zagora, field of higher education 6. Agricultural sciences and veterinary medicine, professional direction 6.3 Animal husbandry, scientific specialty "Cattle and buffalo breeding" and "Breeding of farm animals, biology and biotechnology of reproduction", designated as a member of the scientific jury by order № РД-16-1233/21.11.2022r. from the AU Rector.

### 1. Relevance of the problem

In the field of cattle breeding, there is a trend of concentration on technological renewal. This involves significant investment. The fact that the funds invested in construction and stationary equipment predetermine the efficiency of production for many years to come, that requires a very careful approach from the very beginning. On the other hand, in order animals to feel good and realize its genetic predispositions for productivity to the maximum extent, not only appropriate feeding, breeding, adequate treatment and care on the part of the farmer are necessary, but also ensuring the comfort of the animals.

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

### 2. Purposeo tasks, hypotheses and research methods

The aim of the dissertation work is to study the influence of basic microclimatic and technological parameters on some indicators characterizing the comfort of freely growing dairy cows in the region of the Upper-Thracian lowland. It is well formulated, corresponds to the topic of the dissertation and is scientifically argued by the literature review. The author has defined 6 tasks that allow the achievement of the research goal.

The used analysis methods fully correspond to the set tasks, they are developed in detail and clearly. The PhD student demonstrates a good level of methodological training,

has mastered modern methods of analysis, as well as a good command of statistical software products for processing information.

### **3. Visualization and presentation of the obtained results.**

The dissertation work is structured correctly and meets the requirements of LDASRB and the Regulations of the Agricultural University for its application. It is written in 154 standard pages, including title page, list of abbreviations used, table of contents, introduction, literature review, aim and objectives, material and methods, results and discussion, summary, conclusions, recommendations for practice, contributions of the dissertation, literature and articles related to the dissertation. The dissertation is illustrated with 34 figures, 28 tables and 22 photographs. The tables and figures fully reflect the research carried out and are a good basis for analysis.

### **4. Discussion of the results and used literature**

The dissertation is written precisely, clearly, in a good scientific style. The results have been thoroughly analyzed, which is an indicator of the competence of the PhD student. The Results and Discussion section takes the largest share in the structure of the dissertation work, it is developed in detail in accordance with the purpose and set tasks. There are detached six subsections. The main mesoclimatic factors were investigated; a hygienic evaluation of the ventilation and the architectural construction and technological solutions of the investigated buildings was made; the main elements of the microclimate are studied; the temperature-humidity indices and the comfort indices were established; the influence of the temperature-humidity indices on the physiological and biochemical changes also, as well as the influence of the production environment on the health status of the animals, was established. The own results are skilfully compared with the findings of other researchers, which is an indicator of the awareness of the author. 12 conclusions were formulated, which logically summarize the obtained results, and the 4 recommendations made are directly aimed at cattle production. A total of 258 sources are indicated in the list of literature, of which 30 are in Cyrillic and 228 in Latin.

### **5. Contributions of the dissertation work**

The PhD student has formulated 5 contributions that logically derive from the conducted research.

#### **Scientific contributions**

- A complex methodology was applied to assess the comfort conditions of dairy cows.
- The assessment of the byre environment has been expanded, and the data of the temperature-humidity indices have been compared and supplemented with the temperature tolerance coefficients of Benezra and Dmitriev.
- Changes in biochemical parameters and metabolic processes associated with seasonal fluctuations in temperature and temperature-humidity indices were found.

#### **Scientific and applied contributions**

- A correlation between the temperature-humidity indices and the comfort indices in the buildings for dairy cows was established.
- A correlation between the comfort indices and the percentage of cows suffering from technopathies was established.

## 6. Critical remarks and questions

At the preliminary discussion of the dissertation work, I had provided my notes and recommendations to the author, most of which she complied with.

## 7. Published articles and citations.

In connection with the dissertation, the author has presented 5 scientific publications, with which she meets scientometric requirements, 4 of them are in English and 1 in Bulgarian. Two of the publications are in journals refereed and indexed in the global database Web of Science (Scientific Papers. Series D. Animal Science and Agricultural Sciences/Agrarni Nauki). Three of them the PhD student reported at scientific conferences.

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

## CONCLUSION:

Based on the research methods learned and applied by the PhD student, the correctly performed experiments, the summaries and conclusions made, I consider that the presented dissertation meets the requirements of the LDASRB and the Regulations of the Agrarian University for its application, which gives me reason to evaluate it **POSITIVE**.

I allow myself to suggest to the esteemed Scientific Jury also to vote positively and award Smilyana Alexandrova Tasheva the educational and scientific degree **"PhD"** in the scientific specialty of Zoohygiene

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