

HABILITATION THESIS

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ABSTRACT

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Quality and composition of products of animal and vegetable origin

The habilitation thesis titled: "Quality and composition of products of animal and vegetable origin" presents my results obtained both as a researcher and as a professor in the field of animal husbandry and biotechnologies. These results were obtained by the participation in national and international conferences and symposia and also the results were published in scientific articles.

This thesis is structured in three parts. In the first part is presented my professional and academic activity, obtained since 2008 (after I obtained my PhD) until now. In the second part of this thesis described in detail the research directions, which are the base of this habilitation thesis. The third part presents my scientific results disseminated in scientific papers (ISI) and papers (BDI), and some results were published in scientific books. Since 2008 until now, I published a total of 7 scientific books and 3 university textbooks in the field of this habilitation thesis. These have been published in CNCSIS recognized by publishing houses.

I directed and managed 2 projects, which were won by myself in the national competition, and other 2 research projects with the business environment. I was involved in other 7 researcher projects as a member of the project team. Results obtained during the research projects were disseminated in national and international scientific events (e.g. congress, conferences).

In the project "Study on the main quality indices for the production of milk from buffaloes in different lactations, ecological and conventional exploitation" (PN II-TD) was

analyzed the qualitative parameters of buffalo milk. In this project was carried out studies about different components of milk and milk products by using analytical methods in order to detect very low concentrations of some components of milk.

The second project that I directed was “Conservation of the biodiversity of the Romanian buffalo in the complexity of Transylvanian ecosystems through modern techniques in the operation of milk and dairy products” (PN II-TE). The project lasted three years (2010 – 2013). The main objective of this project was to study the different conservation methods of the Romanian buffalo by applying and using the state-of-arte biotechnologies technique’s in order to identify the local genetic heritage of the buffalo, identifying the sustainable exploitation, and applying the molecular techniques to genotype the Romanian buffalo. In this project was evaluated the quality of buffalo under the influence of different factors such as: lactation, season, diet, climatic conditions, area and physiological condition. Moreover, in this project was evaluated the metabolic profile (biochemical, hematological profile under the influence of lactation, season and period of colostrum) of other animal species. The results of this project were presented and disseminated in important conferences and published in scientific papers.

The research activity of these projects was spited in two direction : (i) it was evaluated the chemical composition of milk and colostrum (characterization of physics-chemical composition according to lactation; season; species; feed; evaluation of physics-chemical changes for colostrum from different species depending on the postpartum day, analysis of cholesterol and fatty acids in colostrum and milk depending on the season, lactation and postpartum day) obtained from different species; and it was established the quantitative and qualitative productions of milk and genotyping the breed - the Romanian Buffalo. In the researches carried out on the Romanian Buffalo, new haplotypes were discovered for the Romanian Buffalo breed, which were registered in the international GenBank database; characterization of the chemical composition of some animal and plant products using different analysis techniques. The second direction was focused on analyze the level of contaminants for all products of plant and animal origin. In the products of animals origin were analyzed the polycyclic aromatic hydrocarbons under the influence of the different factors (spice from which the meat comes; the anatomical region; the smoking process used).

In the second part is presented the studies about the heavy metal residues from

various plant and animal sources. The results were also disseminated in scientific articles published in international journals and conferences. In addition, it was performed tests with laboratory animals in order to evaluate hematological, biochemical and technical changes after administration food additives. The plant extracts were used in order to reduce the effects of food additives.

Third part of this thesis presents the activities will be realized by the doctoral coordinator. These activities will be based on my scientific experiences gained until now in this area. This scientific area is very vast and can involve multiple possibilities to address a multidisciplinary and interdisciplinary research topics.

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