Faculty of Biotechnology and Food Sciences
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1. Department of Biochemistry and Biotechnology
2. Department of Chemistry
3. Department of Animal Physiology
4. Department of Evaluation and Processing Animal Products
5. Department of Food Hygiene and Safety
6. Department of Microbiology
7. Department of Storing and Processing Plant Products
Faculty of Biotechnology and Food Sciences (FBFS) is part of the Slovak University of Agriculture in Nitra (SUA) is a specific organization, that combines fundamental, strategic and applied research with innovative education at BSc, MSc and PhD levels.

This extensive research base enables us to meet the urgent need for expertise in agriculture, the food industry, non food agricultural production, evaluation and processing of specific products of agro biotechnologies.

The main objective is the implementation of biological and technological integrity of the system „From stable to table“. From the point of view: „Food safety, food quality, functional foods, agrobiotechnology and environment – related aspects of leisure are focus are as that recently gained interest“.
Higher education - tertiary

„Study programme“ or „Stages“

1. Bachelor (3 years)
2. Master´s (2 years)
3. Doctorand (4-5 years)

Higher education - tertiary
The principal mission of FBFS is to prepare experts for agricultural, food processing industries and biotechnology, as well as cooperating industries. Our staff is involved in teaching, research extension activities, and cooperation with the private sector.

The FBFS as a specialised academic workplace in Slovakia extended and improved modern education in the programmes Applied Biology, Agri-Food Processing, Biotechnology, Hygiene and Food Safety. The faculty was successfully accredited for the following fields: 12 – Chemistry, Chemical Technologies and Biotechnologies, 13 – Life Sciences and 14 – Agricultural and Forestry Sciences. Concurrently 7 study programmes were accredited in the full-time and part-time mode of study for the BSc and MSc level, and 3 study programmes for the PhD level. The FBFS acquired the right to perform of habilitation process and inauguration of professors in the study programmes Biology, Biotechnology and Food Technology. In view of study attractiveness, an important indicator is the interest of students. On average there are 880 students at the Faculty annually. In that respects, an increase of foreign students on an annual basis at all levels of study school also be mentioned.
Bachelor’s degree  
1 (3 years)  
- Agro Food Science  
- Applied Biology  
- Agrobiotechnologies  
- Food Safety and Control  
- Viniculture

Master’s degree  
2 (2 years)  
- Food Technology  
- Applied Biology  
- Technology of Agricultural Product Processing  
- Biotechnology

“Study programme“ or „Stages“
Doctorand’s degree

3 (4 years)

Technology of Food Science

Biotechnologies

Molecular biology

„Study programme“ or „Stages“
The internationalisation of education is part of international activities of the Faculty and is reflected in the interest in studies from foreign countries.

The teaching of 25 courses in English, mobility programmes of students and teachers within the international programmes Erasmus and Ceepus, bilateral agreements, etc. make a significant contribution to this fact.

The trend of increasing these activities is positive and is supported by the adopted and implemented credit system (ECTS). The SAV was the first Slovak University that is allowed to use ECTS .... This Level is guarantees the quality of the study programmes. The Level is an acknowledgement of the international character of the university.

The credit system following the rules of the European Credit Transfer System (ECTS) was introduced in 1998 for the organisation of all levels and forms of higher education study.
• An important element of increasing the educational process quality is the scientific activity of students, which represents a platform for teachers' individual work with students, reinforces the ability of an individual fostering of creative abilities, and significantly contributes to the professional growth and the future professional orientation of students.

• The practical training of students with the relevant value of credits is incorporated in the higher education system. Further education is provided by the Faculty by means of the University of Third Age (UTA) in the course of Food, Nutrition and Health, in 9 specialised courses of lifelong learning in the Summer School of Food Safety, which is organised by the Department of Food Hygiene and Safety.
• The PhD. study is at the top of the education provided in the study programmes Biotechnology, Molecular Biology and Food Technology. All these programmes of the FBFS are accredited for four years of the standard study length (full-time mode of study) and for five years of the standard study length (part-time mode of study).

• The Faculty has created together with the Italian Universita degli Studi del Molise, Campobaso, and Polish Universtiy of Technology and Life Sciences, Bydgoszcz, a joint international PhD. programe Welfare Biotechnology and Quality of Animal Production, which is being successfully developed and represents an educational programm of European importance.
Key orientations of scientific research activities at the FBFS are focused so that the development of individual study programmes is supported together with increasing the qualification structure of the workplace. Attention is being paid primarily to actual and prosperous issues associated with biotechnologies, agri-food processing and biodiversity.

The most remarkable results obtained in the field of storing and processing of plant products were related to principal knowledge on the development, structure and rheological behaviour of bread dough by means of rheometry data, water activity and thermic analysis.
• Much to learn was brought by the issue solved in connection with the use of alternative ingredients in traditional baking recipes. The research of fermentation Technologies focused primarily on brewing.

• A significant contribution in the implementation of the PCR DGGE and BIOLOG methods in the genotype and phenotype characteristic of microcenosis, the implementation of nex method for the determination of pathogenic microorganisms by means of PCR together with the optimisation of fast determination, as well as the testing of microscopic fungi isolates on the ability to produce selected mycotoxins.
• Knowledge on the existence of enterococci with antibiotic resistance can be considered a remarkable contribution to research in the field of assessing and processing animal products.

• The most exclusive results were also obtained in the optimisation of molecular and biological markers for the detection of soya in food, lupine allergen, for the detection of freshwater fish allergens, the detection of game meat in raw condition and after thermal treatment, the optimisation of methods for the authentication of milk and bryndza (sheep milk cheese), and nutrigenomics.

• Another significant result is the fact that divalent metals (Ni, Pb, Zn) are able to stimulate cell processes in low concentrations, and heavy metals (Cd, Hg) in minimum concentrations affect the culture of cells toxically. Sperm mitochondrial activity is increased by Cu and Fe.
• Effects of mycotoxins influence the secretion activity of ovarian cells in animal, inhibit the secretion of the IGF-I growth factor, stimulate the secretion of the steroid hormone progesterone, and induce proliferation and apoptosis markers depending on the type and dose of mycotoxin.

• The results obtained by immunochemical analyses of the protein complex of cereal and pseudo-cereal grains in relation to coeliac disease are also considered important. Knowing the role of genetic markers in case of plants, crops and animals is important in the application of geneomic selection as part of biotechnological procedures.

• Results in the field of GMO are accepted internationally. In 2007 the Faculty started to publish the Scientific Journal for Food Industry and in 2011 e-Journal of Microbiology, Biotechnology and Food Sciences.
• The research of allergens and of the authentication of milk as well as that focused on the use of plant essential oils as a substitute of feeding antibiotics is highly compatible with priorities of the European Union.

• The Faculty is a co-researcher of the international project Leonardo da Vinci „From Farm to Fork“ European Food Safety Legislation.

• Beginning with 2010, the FBFS is building the Centre of Excellence for White and Green Biotechnology as a result of the project ITMS 26220120054 „Operational Programme Science and Research“ and of the European Regional Development Fund.
• The FBFS is cooperating within the following scientific research and educational programmes and projects: Leonardo da Vinci, Erasmus Mundus, Socrates, Ceepus, Sixth and Seventh Framework Programme of the European Union, international scientific and technical cooperation with the Czech Republic, Hungary and Poland.

• By virtue of bilateral agreements, there is cooperation with 1 university in Brazil, with 4 universities and 2 research institutes in the Czech Republic, 2 universities in Denmark, with 1 higher education institution in Lithuania, with 3 universities and the National Institute of Chemical Safety in Hungary, 2 universities in Germany, 6 universities in Poland, 5 universities in Austria, 1 university in Slovenia, 2 universities in Spain, 2 universities in Italy, 1 university in the USA and in Great Britain.

• This goal is given shape by the close interaction between science, society and business. Finally, Faculty of Biotechnology and Food Sciences, SAV in Nitra strives to develop active forms of cooperation with other universities and research centres in Slovakia and abroad.
Food production, quality food safety programme at the FBFS is an interactive learning programme. Teaching methods, research, theory and practical assignments are continuously correlated. Examples of recent thesis oriented by:

- Studying in the integration of several quality control system that guarantee safety and quality of products, the environmental and working conditions
- Risk assessment in production processes
- Development of a system to predict food safety
- Analysis of efficiency of a production process of a quality product
- Analysis of partner cooperation in the production chain in order to guarantee quality
- Analysis of factors supporting total quality and sustainable food products from farm to fork
• Analysis on the metabolic and physiological aspects of nutrition. From the point of view nutrigenomics study the effects of foods and nutrients on a cellular or molecular level, including topics such as the absorption and bioavailability of nutrients, diet-gene interaction and nutritional genomics.

• Analysis of product functionality from the focuses on the composition of food, essentially on the role of various components of structures in the quality and functionality of the final product. It depends with sensory, nutritive and texture aspects of foods in relation to their components.
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**THANK YOU FOR YOUR ATTENTION**