Code: 10-2-03

NUTRITION OF NON-RUMINANTS

ECTS: 5

Course coordinator: Prof. Dr. Janez Salobir

Lecturers: Prof. Dr. Janez Salobir, Prof. Dr. Mojca Narat

No. of hours: 125
Lectures: 10
Seminar: 5
Lab. work: 25
Other: 85

2. Entry requirements:
At least 30 ECTS gained in previously completed study programs in the fields of nutrition, biochemistry and the physiology of humans or higher animals.

3. Objectives of the course and intended learning outcomes: (competences)
Educational aims: The aim of the subject is that by means of lectures, preparation of seminar tasks and work in the laboratory, students work on individual topical themes in the nutrition of non-ruminants. They learn to solve nutritional problems on the level of supply, animal breeding, health state of the digestive organs, immune system, environment or protection of the environment, the specifics of operation of some fodders and fodder additives in the nutrition of non-ruminants. Students get to know some analytical approaches to resolving research problems of food of non-ruminants through selected practical laboratory exercises.
Intended learning outcome: The intended learning outcome is to qualify the student for planning and implementing reseach connected with these problems and species of non-ruminants.

4. Syllabus outline:
The content is adapted to current topical themes from the field of nutrition of non-ruminants, primarily the fields of:
- needs for food: contemporary methods of assessing energy, aminoacids and minerals with pigs and poultry, influence of supply of aminoacids on production and slaughter quality of animals.
- interaction between food and health state and immune system: influence of food on the immune status of animals, allergenic substances in food (mainly with young animals).
- interaction between food and the environment: reduction of burden on the environment with the aid of food (enzymes, GMO etc.)
- effects of some feed and feed additives in the food of non-ruminants: mainly the effects and operation of classical feed additives (probiotics, organic acids etc.) and more recent ones (e.g., plant extracts).
- antinutritive substances and toxins: operation, impact on health, prevention.
- influence of food on quality of animal products: food influence on sensoric and nutritional (functional) value of meat and eggs.
- planning and implementation of nutrition research in non-ruminants.
Individual themes also include familiarity with research methods. Some analytical
methods will be presented within the framework of laboratory practicals.

5. Literature (in the case of books and monographs, study sources are only selected chapters from them):
   - Current scientific periodicals and selected chapters from:

6. Teaching methods:
   Lectures, seminar work, laboratory exercises.

7. Assessment methods:
   Verification of knowledge: the final grade of the subject is the weighted arithmetic mean of:
   a) oral or written examination (50 %),
   b) positive assessment for seminar (50 %).
   Student obligations:
   a) preparation of a written seminar task and its presentation,
   b) oral or written examination.

8. References:

   Salobir Janez
   2. FRANKIČ, Tamara, PAJK ŽONTAR, Tanja, REZAR, Vida, LEVART, Alenka, SALOBIR, Janez. The role of dietary nucleotides in reduction of DNA damage induced by T-2 toxin and deoxynivalenol in chicken leukocytes. *Food chem. toxicol.*, 2006, letn. 44, št. 11, p. 1838-1844. JCR IF: 2.393, SE (7/96), food science & technology

   Narat Mojca
   1. DEBELJAK, Maruša, FRAJMAN, Polona, LENASI, Tina, NARAT, Mojca, BALDI, Antonella, DOVČ, Peter. Functional analysis of the bovine beta-and kappa casein gene promoters using homologous mammary gland derived cell line. *Arch. Tierz.*, 2005, letn. 48, št. 4, p. 334-345. JCR IF: 0.491, SE (29/43), agriculture, dairy & animal science, x: 0.868
   3. BOGOVIČ MATIJAŠIĆ, Bojana, NARAT, Mojca, ZORIĆ PETERNEL, Metoda, ROGELJ, Irena. Ability of Lactobacillus gasseri K7 to inhibit Escherichia coli
adhesion in vitro on Caco-2 cells and ex vivo on pigs' jejunal tissue. *Int. j. food microbiol.*, 2006, letn. 107, št. 1, p. 92-96. JCR IF: 2.608, SE (4/96), food science & technology, x: 1.025, SE (32/88), microbiology, x: 3.118