Course Unit Descriptor

Study Programme: Animal Production

Course Unit Title: Environmental Contaminants

Course Unit Code: 19.ANM071

Name of Lecturer(s): Igor M. Jajić, PhD, Full Professor

Type and Level of Studies: Master Academic Studies

Course Status (compulsory/elective): elective

Semester (winter/summer): winter

Language of instruction: Serbian

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated:6

Prerequisites: None

Course Aims:

Expanding knowledge about accidental displacement of contaminants in the environment, their inclusion into the food chain and the negative impact on the health of the consumer. Getting to know the detailed legislation in this area in the EU and our country.

Learning Outcomes:

Identifying the most important contaminants of food and the environment. Ability to apply knowledge about the importance of preserving the environment with active participation in projects related to this area.

Syllabus:

Theory

Pesticides: insecticides, rodenticides, fungicides, herbicides; chemical structures, the distribution in food chain, metabolism, residues in tissues, legislation. Heavy metals: arsenic, cadmium, nickel, lead, sources of poisoning the food chain distribution, metabolism, tissue residues, ecotoxicology, legal regulations. Industrial pollutants: polychlorinated biphenyls, dioxins, furans: sources of poisoning, the distribution in food chain, toxicity, metabolism, tissue residues, ecotoxicology, legal regulations. Mycotoxins: aflatoxin, ochratoxin, trichothecenes, zearalenone, the distribution in the food chain, toxicity, metabolism, residues in tissues legislation. Preventive measures for the occurrence of mycotoxins in foods. Radionuclides: natural and artificial, the distribution in food chain, contaminants in animal products, metabolism, monitoring, legislation.

Practice

Chromatographic methods:gas and liquid chromatography, determination of pesticides (organochlorine, organophosphate, pyrethroid, triazine) and mycotoxins (aflatoxins, zearalenone, ochratoxin Aand deoxynivalenol). Atomic absorption spectrometry: determination of heavy metals.

Required Reading:

D'Mello, J.P.F. Ed: Food Safety Contaminants and Toxins, Cab International, 2003.

Sparks, L.D.: Environmental soil chemistry, Academic Press, 1995.

IgorJajić: Kvalitetibezbednoststočarskihproizvoda (Praktikum), 2013.

Šarkanj, B., Delaš, F., Klapec, T., VasićRački, Đ.: Kemijskeifizikalneopasnostiuhrani, Hrvatskaagencijazahranu, 2010.

Havranek, J., TudorKalit, M. isar.: Sigurnosthrane - odpoljadostola, 2014.

Milićević, D.: Mikotoksiniulancuhrane - hemijski, biološkiizdravstveniaspekt, Institutzahigijenuitehnologijumesa, Beograd, 2016.

WeeklyContact Hours:	**Lectures:**2	**Practical work:**2

Teaching Methods:

Lectures, Practical classes, Consultations, study, research work

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	
Practical work	5	oral exam	50
Preliminary exam(s)	40	…….	
Seminar(s)			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.