

Module of classes:

FORAGE CONSERVATION

ECTS	2
Status	complementary
Form of final credit	credit unrated
Prerequisites	knowledge and skills in animal husbandry, especially in animal nutrition

Field of study:

ZOOTECHNICS

Profile of study	General-academic
The code of the form of study and the level of study	SI
Semester of study	
Language of study	English

The leading faculty, department and the lecturer of the module:

Name of the competent unit for the coordinator	Faculty of Animal Sciences, Department of Nutrition and Biotechnology of Animals, and Fisheries
Course coordinator	Prof. dr hab. Zygmunt M. Kowalski

Learning outcomes of the module/subject

The code of the description component (symbol of the effect)	Description	Relation to (code)	
		field effect	discipline#

KNOWLEDGE – the student knows and/or understands:

FC_W1	basic issues in the field of animal nutrition, with particular emphasis on the use of preserved forages in the diets	ZOO1_W09	RZ
FC_W2	biological processes occurring during drying and fermentation, with particular emphasis on ensiling	ZOO1_W09	RZ
FC_W3	rules for assessing the fermentation quality of preserved feed and for assessing the nutritional value of feeds	ZOO1_W09	RZ

SKILLS – the student can:

FC_U1	prepare of preserved roughages on a microscale	ZOO1_U08	RZ
FC_U2	take representative samples of preserved forages and assess their quality by organoleptic and chemical methods	ZOO1_U08	RZ
FC_U3	determine and evaluate the nutritional value of preserved forages	ZOO1_U08	RZ

SOCIAL COMPETENCE- the student is ready to:

FC_K1	presenting an active attitude in the area of dissemination and implementation of practical knowledge and professional skills	ZOO1_K01	RZ
FC_K2	assessment of risk and consequences of activities related to production of conserved forages	ZOO1_K05	RZ
FC_K3	taking care of own safety and the safety of persons participating in a given undertaking, as well as care for one's own health and physical fitness	ZOO1_K10	RZ

Teaching content:

Lectures		8	hours
Subjects of lectures	Forages in animal nutrition		
	Methods of forage conservation		
	Hay production. Artificial drying		
	Ensiling of grasses and lucerne		
	Ensiling of corn (whole crop silage, high moisture grain)		
	Practical use of conserved forages		

Realized learning outcomes	FC_W1, FC_W2, FC_W3, FC_K1, FC_K2, FC_K3
Verification methods and criteria of effects evaluation	Test covering messages provided to students during lectures. Positive mark - getting at least 55% positive answers

Classes (laboratories, field exercises, auditorium exercises etc. ...)		7	hours
Subjects of the classes	Ensiling of grasses in micro-silos. Sampling of representative samples of conserved forages		
	Assessment of the quality of conserved forages: organoleptic assessment, fermentation quality assessment (determination of pH, ammonia, silage acids), particle size distribution		
	Assessment of the nutritional value of conserved forages		

Realized learning outcomes	FC_U1, FC_U2, FC_U3
Verification methods and criteria of effects evaluation	Test covering messages given to students during classes. Positive mark - getting at least 55% positive answers

Seminars		0	hours
Subjects of the seminars	not applicabele		

Realized learning outcomes	not applicable
Verification methods and criteria of effects evaluation	not applicable

Literature:

Basic	1. Jamroz D. i wsp., 2009. Żywnienie zwierząt i paszoznawstwo. Tom 3. Praca zbiorowa pod red. D. Jamroz. PWN 2009. 2. Park R.S. 2005. Silage Production and Utilization. Wageningen Academic Publisher. 3. Podkówa W., Podkówa Z., 2017. Technologia kiszenia biomasy na cele paszowe i produkcję biogazu. PWRiL.
Supplementary	1. Mitrik T., 2018. Silazovanie. Feed Lab, Slovakia.

Structure of learning outcomes:

Dyscipline – animal husbandry and fishery (RZ)	2	ECTS*
Dyscipline –...	...	ECTS*

Structure of student's activities:

classes carried out with direct participation of the teacher	25	hours	1	ECTS*
including:	lectures	8	hours	
	classes and seminars	7	hours	

consultations	7	hours		
participation in research	0	hours		
mandatory practices and internships	0	hours		
participation in the exam and credits	3	hours		
classes carried out with the use of e-learning	0	hours	0	ECTS*
student's own work	25	hours	1	ECTS*