

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	bachelor
Semester of study	winter or summer
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:**

<b>Lectures</b>	<b>8</b>	<b>hours</b>
Subjects of	Forages in animal nutrition Methods of forage conservation Hay production. Artificial drying	

lectures	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

<b>Classes (laboratories, field exercises, auditorium exercises etc. ...)</b>	<b>7</b>	<b>hours</b>
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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

<b>Seminars</b>	<b>0</b>	<b>hours</b>
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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. Podkówka W., Podkówka 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*