

Animal Nutrition (I002653)

Wegens Covid19 kan mogelijk afgeweken worden van de onderwijs- en evaluatievormen. Dergelijke afwijkingen zullen via Ufora worden gecommuniceerd.

Cursusomvang	<i>(nominale waarden; effectieve waarden kunnen verschillen per opleiding)</i>		
Studiepunten 5.0	Studietijd 150 u	Contacturen	50.0 u
Aanbodsessies in academiejaar 2022-2023			
A (semester 2)	Engels	Gent	

Lesgevers in academiejaar 2022-2023

Fievez, Veerle	LA22	Verantwoordelijk lesgever
Michiels, Joris	LA22	Medelesgever

Aangeboden in onderstaande opleidingen in 2022-2023

	stptn	aanbodsessie
Master of Science in de bio-ingenieurswetenschappen: landbouwkunde	5	A
Uitwisselingsprogramma bio-ingenieurswetenschappen: Food Science and Nutrition (niveau master-na-bachelor)	5	A
Uitwisselingsprogramma bio-ingenieurswetenschappen: landbouwkunde (niveau master-na-bachelor)	5	A

Onderwijstalen

Engels

Trefwoorden

Ruminant nutrition, pig nutrition, feed evaluation, requirements, diet formulation

Situering

This course deals with ruminant and pig nutrition. The course describes feeding standards in relation to the physiological processes (maintenance, labour, growth, lactation, pregnancy) from which feeding systems for the different classes of farm animals are derived. Further, emphasis is put on specific requirements and nutritional disorders in relation to the physiological (weaning, growth, early lactation, reproduction) and metabolic status of the animal. Feed resources and their characteristics are discussed. Feed technology is introduced and new nutritional developments are discussed with stakeholders. Sustainability dilemmas related to animal nutrition, choice of feed resources and possibilities to mitigate environmental threats are quantified and interactively discussed.

Inhoud

FEED RESOURCES & TECHNOLOGY

1. Feedstuffs, their chemical and nutritive characteristics
2. Vitamins, minerals and trace elements
3. Feed additives
4. Introduction to feed technology

RUMINANT NUTRITION

1. Energy, protein and nutrient-based evaluation systems
2. Feeding lactating animals
 - 2.1. Nutritional management during transition
 - 2.2. Nutritional strategies to prevent or cure metabolic, oxidative and immune stress
 - 2.3. On farm tools to assess nutritional success and problems
3. Feeding cattle in other physiological stages

- 3.1. Specific aspects related to feeding of beef cattle
- 3.2. Specific aspects related to feeding calves

PIG NUTRITION

1. Energy, protein and amino acid evaluation systems
2. Feeding gestation and lactation sows
3. Feeding growing pigs
4. Feeding piglets

FORMULATING SUSTAINABLE DIETS

1. Ruminant nutrition and the environment
2. Pig nutrition and the environment

Begincompetenties

Animal Nutrition bouwt verder op bepaalde eindcompetenties van opleidingsonderdeel Animal Physiology; of de eindcompetenties werden op een andere manier verworven.

Eindcompetenties

- 1 Having profound knowledge in determination of nutrient content and evaluation.
- 2 Animal species specific requirements and their integration in energy and protein evaluation systems are known.
- 3 Formulation of diets based on requirements according to the production stage and level.
- 4 Application of linear programming to formulate diets.
- 5 Critically evaluate current feed evaluation systems and new developments.
- 6 Profound insight in the origin of metabolic disorders and the functions of non-nutritive feed additives.
- 7 Relate nutritional composition to animal responses and vice versa.
- 8 Relate nutrition to emissions towards the environment, animal health and animal welfare and assess trade-offs.

Creditcontractvoorwaarde

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk mits gunstige beoordeling van de competenties

Examencontractvoorwaarde

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

Didactische werkvormen

Begeleide zelfstudie, excursie, hoorcollege, integratieseminarie, practicum, werkcollege: geleide oefeningen, werkcollege: PC-klasoefeningen

Toelichtingen bij de didactische werkvormen

Theory: oral lectures ('hoorcollege'). A limited part of the theory is offered via a learning path.
Feedstuff characteristics: personal collection of data for dairy cattle & pigs ('begeleide zelfstudie') + discussion sessions & feedback on personally collected data
Exercises: practical exercise in relation to feed evaluation, calculations in relation to energy and protein evaluation system & diet formulation (personal preparation ('zelfstandig werk') - preparation of the exercises + discussion sessions ('geleide oefeningen')), practical on farm evaluation of nutrition and production characteristics + pilot compound feed installation (excursions), compound feed formulation based on linear programming ('PC-klasoefeningen'), interactive discussion on sustainable diets with stakeholders

Leermateriaal

Course material is available. This is offered via Ufora.
Optional excursion to feed design lab (additional costs - to be determined)

Referenties

cfr. extensive list of references in the course material

Vakinhoudelijke studiebegeleiding

During the contact hours, the different topics are discussed under supervision of the lecturer.
Exercises are prepared by the students based on guidelines provided by the lecturer.

Evaluatiemomenten

periodegebonden en niet-periodegebonden evaluatie

Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode

Schriftelijk examen met open vragen, mondeling examen

Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode

Schriftelijk examen met open vragen, mondeling examen

Evaluatievormen bij niet-periodegebonden evaluatie

Mondeling examen, participatie, verslag

Tweede examenkans in geval van niet-periodegebonden evaluatie

Examen in de tweede examenperiode is enkel mogelijk in gewijzigde vorm

Toelichtingen bij de evaluatievormen

Theory: period aligned evaluation

Exercises: non-period aligned evaluation

Possibility for period aligned evaluation of exercises (agreement between lecturer and student).

Exercises: assessment of cooperation and interaction during exercises and exercise preparation reports

Eindscoreberekening

10/20 - non-period aligned evaluation

10/20 - period aligned evaluation