

Sustainable Livestock Farming in the Environment

Overview

This module aims to provide an understanding of the threats presented by changes in the environment on livestock production and wildlife population, and explains the ways in which global and regional environmental change can impact on sustainability of farming systems, conservation of ecosystems and animal health.

It will outline approaches that can be used to minimize unwanted environmental impacts of modern farming and land use systems, as well as consider the values academics, researchers, veterinarians and livestock specialists attach to the environment and to conservation issues.

The course will also guide students in the approach they take in future when considering animal–environment interactions.

Welcome to the course

Sustainable Livestock Farming in the Environment is an optional module in the Livestock Health and Production programme of the Royal Veterinary College. The module may also be studied as a 240-hour Individual Module.

This course uses a large number of examples of environmental challenges in describing the principles of environmental science in livestock production, and is designed to allow you to become familiar with the way environmental science can be applied, as well as understanding some of its foundations. Key issues examined in the course include the effects that the disappearance of livestock can have on an ecosystem, urban livestock farming and keeping companion animals in cities, some of the emerging and re-emerging animal diseases and the types of environmental change that may be responsible for their development, and the interrelationships between wildlife and both zoonotic and livestock diseases.

The course has a UK and European focus in topics such as pollution from farm wastes and the impact of livestock farming on wildlife. When considering topics such as soil erosion, soil salinity and landscape change, attention is directed at semi-arid regions of the world. In the case of vertebrate pest management, much of the material is based on experience in Australasia. Overall, the focus is at the farm and regional level, rather than on global environmental issues. Nevertheless, many examples with worldwide relevance are described.

What will you learn from this course?

The aims of this course are to give you an understanding of how:

- plant and animal successions occur in changing landscapes
- wildlife conservation can interact with the farm environment
- soil is eroded in pastoral farming systems
- water resources can be protected
- livestock wastes can be rendered safe
- the changing environment is affecting disease patterns in livestock
- rising soil salinity is affecting some semi-arid livestock properties
- natural disasters present threats to animals
- national environmental policies can be translated into objectives at farm level

Course structure

The course consists of ten units of study, all of which you should complete. They make up the following three modules.

Module 1: Managing the Farm for Environmental Sustainability

This module (Units 1–3) provides material that will help you to appreciate how animal production and environmental sustainability have to be balanced. It focuses on some of the impacts that livestock farming can have on the environment. These include changes in plant and wildlife composition in ecosystems, soil erosion, effects on groundwater and surface water quality, and disease hazards for other species.

Module 2: Ecology, Environment and their Effect on Livestock

The second module (Units 4–7) examines some of the hazards and impacts of climate change and rising population density. It is predicted that the present trend towards urbanization of the world's population will continue for at least another 25 years. Along with this there will be continued growth in horticulture and in the production of crops and poultry around the major towns and cities, as ungulate farming is displaced to more remote areas which are generally less suitable for arable farming. This module looks at the effects that these trends are having on the sustainability of livestock farming. It also examines the parasite hazards associated with climate change, urban livestock farming and keeping companion animals in cities, as well as some of the emerging and re-emerging animal diseases.

Module 3: Wildlife Biology and Habitat Encroachment

In the final module (Units 8–10) you will consider the issue of wildlife habitats in relation to livestock production and other forms of agriculture. There is growing emphasis in farming policy on conserving wildlife species, especially those that are at risk of becoming endangered or rare. In the European Union large amounts of financial assistance are now going towards this aim, replacing some of the former commodity-based subsidies. Traditionally there has been a need to control unwanted wildlife, and in particular wildlife that transmits diseases to livestock, companion animals and humans. This need still exists, but traditional methods are to some extent being replaced by schemes that aim at damage control rather than pest elimination.

Tutor-marked assignments

In addition to your work on the ten units, you are required to complete and submit at least one tutor-marked assignment (TMA) for assessment. If you submit more than one – and you may submit up to two – your best TMA will be used in the calculation of your final mark.

Full information on how to approach and submit TMAs is provided in the Programme Handbook and in the assignments themselves. You should bear in mind that your TMA will count for 20% of your final mark for the course.

Study time

The entire course, including revision and examination, is designed to take approximately 240 hours to complete. This is made up of between 15 and 20 hours' study time for each unit, 10–20 hours for the TMA(s) – so that the units and assignments will require a total of about 190 hours – and the remaining time for personal study and revision. You may find that some units will take you more or less time than estimated, depending on your familiarity with the subject.

Assessment

Your work for this course will be assessed by means of a 3-hour unseen written examination paper which will take the form of essay questions. In addition, you must submit at least one and up to two TMAs.

The grade awarded will be based on the mark obtained in the written examination (80%) and on the mark for the compulsory TMA (20%).