

Veterinary Medicine

VETERINARY MEDICINE AT THE UNIVERSITY OF BERN

The [Vetsuisse Faculty](#) at the University of Bern is one of the university's smaller faculties, but it covers a very broad range of topics. In addition to running clinics for large and small animals, the Vetsuisse Faculty in Bern conducts basic and applied re-search on various aspects of animal health, as well as basic biomedical research on pathogens, immune responses, and disease pathogenesis. Depending on the field, the research may focus on individual animals (especially small animals and horses), livestock, or wildlife populations; on diseases themselves or on conditions – in terms of animal husbandry or environmental influences – that promote disease; on animal behaviour or the behaviour of animal owners; or on animal health and the health of people who come into contact with animals or consume animal products, and related preventive measures [1].

In teaching, the Vetsuisse Faculty in Bern aims to provide students with knowledge and practical skills in all these areas, prepare them for the Federal Examination in Veterinary Medicine, and train the next generation of systemically important experts in animal health [2].

How is veterinary medicine linked to sustainable development, and how has this influenced practice?

Human, animal, and environmental health are closely linked. Veterinary medicine is therefore an integral part of the One Health approach, which takes a holistic view of animal, human, and environmental health. The One Health approach is based on the premise that experts in human medicine, veterinary medicine, and the environmental sciences must work together for the sake of a sustainably healthy planet [3].

At the same time, few academic subjects are as interconnected with all areas of society as veterinary medicine. It touches on human health, including mental health (e.g. when pets are involved); the production of animal feed

and pet food; the impact of pasture management on habitats and water parameters; the management of zoonoses in wildlife populations; human food security (e.g. through bee health); and much more. There is hardly a Sustainable Development Goal (SDG) in the UN 2030 Agenda that cannot be related to animal health issues, and almost all animal health issues have social, economic, and environmental dimensions.

Examples: Zoonoses, use of pesticides and drugs to support animal health, and how both affect humans

Zoonoses are an important topic for human and animal health, as nearly 75% of emerging infectious diseases in humans originate in animals. This issue is being addressed through interdisciplinary approaches in disease ecology, an emerging field in veterinary research. Disease ecology research examines the links between environmental conditions and the emergence, spread, and manifestation of infectious diseases (**SDG 3**). For example, researchers are currently investigating the behaviour of wild boar in human-dominated landscapes to better understand the dynamics and development of African swine fever [4]. Other studies are aimed at improving wildlife health monitoring in Switzerland or investigating the transmission of emerging diseases from wild animals to humans [5].

Another area of veterinary medicine that is closely related to sustainability issues is the use of pesticides and medicines to ensure animal health. Antibiotics are used to treat bacterial infections in animals. However, they also cause resistance in humans and animals and the spread of resistant germs in the environment. Anthelmintics (dewormers) promote human and animal health, but can also have adverse effects on soil communities, bees, and fish. Knowledge about the adverse effects of certain medicines and pesticides on the environment, as well as on species that play an important role in the food chain, informs the development of measures to restrict their use, including bans, to protect aquatic and terrestrial ecosystems (**SDG 14** and **SDG 15**). This contributes to food security as well as human and animal health (**SDG 2**, **SDG 3**, and **SDG 6**).



As in research, the Vetsuisse Faculty in Bern also promotes sustainable development in teaching by means of iterative, inter- and transdisciplinary processes. A novel teaching–learning concept on sustainability, commended and funded by the University of Bern, has been incorporated into the first year of study since 2021. In a one-year process, students and interested faculty members, acting as mentors, jointly address and develop a portfolio of specific sustainability issues that are relevant to veterinary medicine. In doing so, both parties take up the concepts and contents of the “Sustainable Development” module of the University of Bern’s “Competencies for the (Digital) Future” programme. They learn to approach the topic of sustainability scientifically, and transfer the knowledge gained to their own discipline [8]. These competences are deepened during the study programme in many fields of veterinary medicine.

How does the Vetsuisse Faculty at the University of Bern incorporate the topic of sustainable development into research and teaching?

Antibiotic use and resistance are key areas of focus in teaching and research at the Vetsuisse Faculty in Bern. Research on the topic is both basic and applied. Basic research projects seek to understand resistance mechanisms and the spread of resistant isolates in humans, food-producing animals, pets, and wildlife. Applied research projects include field studies on reducing the use of antibiotics, or investigating alternative treatment strategies in practice. The Vetsuisse Faculty also participates in advancing the national Strategy on Antibiotic Resistance (StAR), for example by offering an online tool called “Antibiotic Scout”. Antibiotic Scout supports the sustainable use of antibiotics in veterinary medicine, based on guidelines of the Federal Food Safety and Veterinary Office (FSVO) [6,7]. The tool makes a significant contribution to ensuring the effectiveness of antibiotics in treating bacterial diseases in humans and animals by minimizing antibiotic resistance.

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