PROJECT

Agriculture
Education
Health
Water

Communication Strategies for Reducing Agriculture-related Entry of Veterinary Pharmaceuticals into the Environment

[1]

Residues of veterinary medicines (VETs) can increasingly be detected in soil and water and are becoming the focus of scientific and public debate. The aim of this project was to create the internet portal "Veterinary Medicines in the Environment" and other information and teaching materials for veterinarians and farmers, in order to make them aware of how to prevent VETs from being introduced into the environment.

Entry pathways and environmental impacts of veterinary medicinal products

As with human medicines, veterinary medicines are only partially absorbed by the animal's body. Significant proportions of active substances are excreted unchanged or as metabolites - for antibiotics it is between 40-90% 1. these biologically active substances can enter the environment if, for example, animal excrements are applied as agricultural fertilizers on agricultural land. Veterinary medicines that enter the environment are partially degraded, partly absorbed by organic and inorganic matter and also transported in dissolved as well as sorbed form into water bodies. From the agricultural areas, veterinary medicines and metabolites can seep through the unsaturated soil zone to groundwater, or they can enter surface waters through drainage or surface runoff, where they can impact aquatic organisms. Their biological efficacy can also have consequences for soil organisms, which in turn can have an adverse effect on soil functionality.

Communication of risks of veterinary medicines in the environment

The environmental impact of VETs is a complex issue and many

stakeholders are not aware of the need for action. Furthermore, there is a lack of knowledge and a need for research. In particular, claims for measures are justified by risk minimisation and the precautionary principle. At present, the environmental impact of veterinary medicines is rarely discussed in the education and training of veterinarians and farmers. There is little information and training material available that provides background knowledge for these target groups. Similarly, little material is available on alternatives to the use of veterinary medicines and disposal and recovery of excretions containing veterinary drug residues and resistant microorganisms.

Aim of the project

As part of the previous study on this project, an overview of concepts and measures for the reduction of VETs in the environment was developed and discussed with the interested expert public in a workshop. The workshop participants stressed the need for communication activities aimed at farmers and veterinarians in order to reduce the input of veterinary medicines into the environment.

This project responded to the needs expressed and focused on the development of information products for veterinarians and farmers, which explain the connections in a targeted way and point out possible options for action. It aims to illustrate the effects and side effects of their actions in order to create an awareness of the potential environmental impact. In this way, these professional groups are sensitised to environmentally friendly handling of veterinary medicines and their willingness to think more intensively about alternative measures for maintaining the health of individual animals and livestock is awakened.

Methodology of the project

First, the state of knowledge on the environmental impacts of veterinary pharmaceuticals was assessed. Subsequently, selected information and teaching material on the use of veterinary drugs for veterinarians and farmers were analysed. Special focus was given to examining whether and how the material addresses environmental aspects and antibiotic resistance. Based on this communication analysis, an overarching communication strategy and concepts and contents for the following information products were developed:

- Information brochures for veterinarians [2] and farmers [3],
- educational materials for veterinarians and farmers in training and practice,
- online platform [4] within www.umweltbundesamt.de [5]

The content of the information products was discussed with the expert public at a workshop.

Tasks of Ecologic Institute

Ecologic Institute led the project and was responsible for communication analysis, the preparation of information brochures and the online platform. Another focal point for Ecologic Institute is the target group-specific editing and visualisation of information.

Sources

Engels, H. (2005). Verhalten von ausgewählten Tetrazyklinen und Sulfonamiden in Wirtschaftsdünger und in Böden. Cuvillier Verlag.
Kemper, N. (2008). Veterinary antibiotics in the aquatic and terrestrial environment. Ecological Indicators, 8(1), 1–13. http://doi.org/10.1016/j.ecolind.2007.06.002 [6]
Winckler, C., Engels, H., Hund-Rinke, K., Luckow, T., Simon, M., & Steffens, G. (2004). Verhalten von Tetrazyklinen und anderen Veterinärantibiotika in Wirtschaftsdünger und Boden: Wirkung von Tetrazyklinen und anderen Tierarzneimitteln auf die Bodenfunktion (Texte No. 44/04) (S. 157). Berlin: Umweltbundesamt.

Main Link

UBA internet portal: Veterinary Pharmaceuticals in the Environment [German]

Related Articles

- Internet Portal on "Veterinary Pharmaceuticals in the Environment"
- Landwirtschaft – Tierarzneimittel – Umwelt
- Veterinärmedizin – Tierarzneimittel – Umwelt
- Verschleppung von Tierarzneimitteln in die Umwelt
- Umweltwirkungen von Tierarzneimitteln
- Umweltaspekte von Tierarzneimitteln in der tiermedizinischen Praxis
- Minimierung der landwirtschaftlichen Einträge von Tierarzneimitteln in die Umwelt
- Tierarzneimittel in der Umwelt: Abbau, Verlagerung und Verbleib
- Effekte von Arzneimitteln auf Nichtzielorganismen
- Verschleppung von Tierarzneimitteln im Stall
- Umwelt-Checkliste für den Einsatz von Tierarzneimitteln
- Krankheitserreger in Tränkeeinrichtungen für Schweine richtig entfernen
- Konzepte zur Minderung von Arzneimitteleinträgen aus der landwirtschaftlichen Tierhaltung in die Umwelt

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Links

[1] https://www.ecologic.eu/sites/files/project/2016/2590-lossless-page1-800px-nrcswi00015_-_wisconsin_6801nrcs_photo_gallery.tif_.png
[2] https://www.ecologic.eu/node/15388
[3] https://www.ecologic.eu/node/15392
[4] https://www.ecologic.eu/node/15387
[5] http://www.umweltbundesamt.de
[6] http://doi.org/10.1016/j.ecolind.2007.06.002