



Responsible Antibiotic Usage

When animals become ill, although some alternative treatment options may be available, it is sometimes necessary to treat animals with antibiotics. When antibiotic therapy is required, it is important to carefully consider the most effective and responsible antibiotic treatment protocols to limit the influence on antibiotic resistance selection and/or spread.

Alternative Treatments

Alternatives to antibiotics include any substance that can be substituted for antibiotic therapeutic drugs. This is an emerging field, with promising novel technologies that could provide alternatives to antibiotic use under development in the areas of:

- Phytochemicals
- Innovative drugs, chemicals and enzymes
- Immunoglobulins and host defence peptides
- Microbial-derived products

Targeted Use of Antibiotics

Some antibiotics are crucial in the treatment for certain human and/or animal diseases. Misuse of these antibiotics contributes to therapy failure in humans and animals. Guidelines to help veterinarians to make prudent choices are available, but basic principles to consider are:

- **Dosage:** a correct dose and therapy duration are crucial in avoiding resistance selection and spread.
- **Group administration vs individual administration:** group administration causes a higher selection pressure compared to individual treatments.
- **Administration route:** feed medication and water medication are more likely to cause resistance selection and spread than injections. There are different reasons for this, e.g. dosage is less precise, there is a risk of cross-contamination with the environment etc.

Disposal of Residues

Antibiotic therapy inevitably results in antibiotic residues that enter the environment e.g. via manure that is used to fertilize fields. These residues can cause antibiotic resistance selection or spread in environmental bacteria, even at very low concentrations. These environmental bacteria are then able to transfer their resistance to pathogenic bacteria.

Waste that is contaminated with antibiotic residues (faeces, bedding, milk etc.) should be isolated, collected and treated to inactivate the antibiotics before disposal.

