

Journal Vet

One Health and the environment



The environment plays a key role in the control of antibiotic resistance. Tommy Heffernan explains why we talk about the #onehealth message of humans, animals and the environment

It has been fantastic to get positive farmer feedback about our One Health awareness campaign. It's important that farmers understand why we all need to become more aware of the challenge that is antibiotic resistance. It can affect our farm animals, food security, environment and, most importantly, ourselves and our families.

Antibiotics have added 20 years to human life expectancy and we must now ensure we do everything to protect them into the future. We also need to use antibiotics in our farm animals to treat infections. We must work harder to reduce their usage, and focus on disease prevention. When we do have to use antibiotics, it must be only "as little as possible, as much as necessary".

Any time we overuse antibiotics, there is the potential of resistant bacteria developing. These bacteria can then multiply and share their resistant genes with other bacteria. We know this can happen in humans and animals, but now there is increasing concern about what is happening in our environment.

There are billions of bacteria in our animals and ourselves, mostly harmless. However, the largest numbers of bacteria are in the environment humans and animals share.

Resistant bacteria being shed into the environment can pose a threat to human health. These bacteria can be shed in the faeces of animals or humans into the waterways and local environments. Each time an animal is treated with an antibiotic, a significant amount is excreted from the animal into the environment. Studies have shown that spreading of manure increases the level of antibiotic-resistant bacteria and resistance genes in soil.

The risk may be small, but we must remember these resistant bacteria can also share their resistant DNA with other bacteria. This is why the environment we all share is critical in the One Health story.



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An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

A joint awareness campaign by the Irish Farmers Journal and the Department of Agriculture, Food and the Marine

Another risk area is unused antibiotics or empty antibiotics bottles being disposed of incorrectly. Again, this could lead to small doses of antibiotics getting into our environment and bacteria then developing resistance. Therefore, it is vital to dispose of all antibiotic bottles correctly through a registered hazardous waste company or availing of local schemes.

Every farm must have hazardous waste containers which can be sealed for disposal. All used syringes that administered

antibiotics must be disposed of correctly.

One area farmers can improve on straight away is reducing the use of oral antibiotics to treat individual animals or groups. This can also create resistant bacteria, and there are better approaches to treatment for conditions such as calf scour.

Remember that in cases of calf scour, more than 90% are caused by viruses and parasites in young calves. Oral antibiotics will do nothing to treat these infections. Group medications of oral antibiotics will no longer be allowed on farms under new regulations coming into force in January 2022.

We can be ahead of the curve on Irish farms by removing and reducing the need for oral antibiotics in our farming systems now. Our focus as farmers must be on improving animal health and working with our vet and other farm advisors in a holistic way to prevent disease. Remember, these resistant bacteria can be in the environment in which you work. Strict hygiene protects your farm and your family's health.

One Health is about looking at the complete picture of your farm animals, yourself and the environment.

'My cattle are scratching already'

Winter housing brings with it many challenges for animal health, including the control of external parasites, namely lice and mites. Last week, I spoke to a number of farmers who already have seen their stock beginning to look itchy.

There seems to be some evidence across the world that lice and mites are now also showing signs of resistance to modern treatments. Talking to Irish vets this could also be the case. However, with different mites and lice responding differently to various treatments, we need to be careful with our next steps.

There are different types of lice and mites. Lice can suck or bite, and there are three species of mites: psoroptes, chorioptes and sarcoptes

This may be important for farmers who are getting a poor response to treatments. There can be transfer of lice and mites from sheep to cattle, but this is limited, as they have different diets on the skin itself.

Environment

External parasites cause problems indoors, as it is the perfect condition for them to breed and spread. Pay careful attention to stocking densities, as the closer animals are to each other, the more likely mites or lice are to spread.

They like the warm climate under the hair of housed cattle. While clipping the backs isn't directly linked to reducing mites, it helps in my opinion. Clip the backs with a good clippers before any topical treatments, to allow for less sweating over the winter months.

Improving ventilation in sheds also really helps with all types of infectious disease. Older cattle really benefit from sheds with good airflow. Get inlets and outlets correct to maximise the stack effect. Get your vet to assess your sheds on a still day to check airflow, simple adjustments to sheds can't be underestimated.

Treatment and control

The key is to get preventative treatments into cattle before lice and mites start breeding. There are a number of options, including:

- ☛ Spot ons: (pyrethroids) work well for lice and psoroptes mites. In heavy burdens they may need to be repeated in four weeks.
- ☛ Amitraz: works well for both lice and mites. This is often applied using a nap snack sprayer or through a power hose on cattle. This works well by correct dilution rate and soaking cattle with heavy infections. It needs to be repeated in seven to 14 days in most cases.
- ☛ Macrocyclic lactones (Ivermectin): This can be given by injection or pour on. It also has the added advantage of treating worms. Where chorioptes mites or biting lice are present, you may get poorer results. There is also the issue of using them on cows who should not need worming.

The most important thing for farmers to do is review their treatment plans and if they are not working, consider skin scrapes to identify what parasites are actually on the skin. This can be done by your vet. External parasites can really affect thrive this winter, so now is the time to get them under control.

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