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Antibiotic Resistance in Horses—What to Know

Horses worldwide are suffering the effects of antibiotic resistance, rendering antibiotic treatment for a variety of infections ineffective. However, better education of both veterinarians and owners—especially in developing countries—and ongoing research can help reverse this trend, said the head of the World Organization for Animal Health (OIE).

And there's no better time to become educated on the topic than during World Antibiotic Awareness Week, taking place Nov. 16-20.

"We're seeing a recent phenomenon where more therapeutic treatments (against bacteria) are failing, whereas 20 years ago these same treatments worked well," said Bernard Vallat, DVM, director general of the OIE, in Paris, France. "These failures are happening more and more often—and not just in equine species, but in all species, including humans."

Antibiotic resistance occurs when certain bacteria survive an antibiotic treatment. These bacteria might have survived the treatment because of a genetic ability to resist that particular treatment, or a mutation that helps them overcome the antibiotic's effects. As survivors, they reproduce and create an entire colony of treatment-resistant germs that can then spread to other animals, or people, according to the OIE.

Fighting this resistance is therefore a universal effort involving anyone administering antibiotic treatment, whether to themselves, their horses, or other human or veterinary patients, Vallat said. This includes both the medical and veterinary population, as well as their patients and the people responsible for them.

While antibiotic resistance actually stems less often from treatment in horses than in animals from mass breeding farms (such as chickens, pigs, and cattle), the horse industry is still at risk, he said. In developed countries, such as the United States and Canada and most European countries, much of this resistance stems from home treatments with antibiotics.

"People check in their medicine cabinets and find some leftover antibiotics and decide to treat their horses with them, because it worked for something similar before, and it's less expensive than calling out the veterinarian," Vallat told *The Horse*. "But every antibiotic treatment should be based obligatorily on a clinical exam by a licensed veterinarian and, preferably, an antibiogram as well."

An antibiogram is a laboratory analysis of the bacteria responsible for an illness. The antibiogram reveals important information about the bacteria's existing resistance to antibiotics so the veterinarian can choose the right drug to target that specific strain of bacteria immediately, without giving it a chance to survive and create more resistant strains.

Owners also need to avoid the temptation of ordering antibiotics for their horses (or themselves) online, Vallat added. Not only are these antibiotics not necessarily targeted for the strain of bacteria that needs to be eliminated, but they're also often packaged in fraudulent ways.

"They'll be marketed in packages that look like the real thing, but these cheaper imitations are often diluted versions of the actual drug, with much lower quantities of active ingredient than what they're advertising to have," Vallat said. "Of course, such lower doses of the antibiotic are very conducive to the survival of the germ and, hence, the development of resistant strains."

Owners should also follow their veterinarians' instructions carefully, giving the full dose for the prescribed number of days. As part of its World Antibiotic Awareness Week, the OIE has published [helpful recommendations for owners and veterinarians](#) on a dedicated portal on its website.

Meanwhile, in developing countries, antibiotic resistance can result from a lack of education, Vallat said. "We must be aware that bacteria know no boundaries, and the most dangerous strains come from countries still lacking in important regulations (concerning antibiotics)," he said.

Of the OIE's 180 member nations, a majority are still developing, Vallat said. In these countries, antibiotics are often sold in local markets, and owners can pick up treatments for working equids without a prescription or even veterinary advice and without any education about the risks of antibiotic resistance. Many of the veterinarians in developing countries are also lacking in such education, he added.

"The OIE has several educational programs in place for both veterinarians and owners in developing countries, including partnership programs between veterinary schools in developed and developing nations," he said.

The international movement of horses can encourage the spread of antibiotic-resistant bacteria, bringing these germs across borders. "It really is an international issue which needs to be addressed at an international level," he added.

Ongoing research is critical in continuing to develop drugs that combat new, resistant strains of disease, Vallat said. But we can't count on research to keep ahead of the trend forever. "If we don't actively participate, worldwide, in reducing antibiotic resistance, it could be just a matter of years before antibiotics are no longer effective," he said.

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