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Popular Article

The Role of Deworming in Animal Health and Productivity

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Abstract

Deworming is a cornerstone of veterinary medicine, essential for controlling internal parasitic infections that significantly impact animal health, productivity and welfare. Internal parasites, including helminths (roundworms, tapeworms and flukes) and protozoans, can lead to severe health complications, resulting in economic losses in both companion and livestock animals. This article examines the importance of deworming in preventing parasitic infections, explores various deworming strategies and highlights its role in enhancing animal health and productivity. Moreover, it discusses sustainable approaches to parasite control, focusing on the rising challenge of anthelmintic resistance.

Introduction

Parasitic infections are one of the most common and economically significant health challenges in animals worldwide. Internal parasites, including helminths and protozoa, thrive in conditions where sanitation is poor and animals are under stress, such as in intensive farming systems. In both companion animals and livestock, parasitic infections cause a range of symptoms, including malnutrition, anaemia, poor growth and decreased immunity. Furthermore, untreated parasitic infections can lead to more severe complications, including organ damage, reduced productivity and even death. As such, deworming programs have become a fundamental part of modern veterinary care, aimed at reducing parasitic burden and improving overall animal health (Bowman, 2009).

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Effects of Parasitic Infections on Animal Health

Parasitic infections can disrupt an animal's ability to absorb nutrients, leading to malnutrition and poor weight gain. In ruminants, for example, heavy infestations of *Haemonchus contortus* (barber pole worm) result in significant blood loss, causing anaemia, weakness and eventually death if left untreated. In companion animals, roundworms such as *Toxocara canis* and *Toxocara cati* not only cause gastrointestinal distress but also pose zoonotic risks, potentially infecting humans. Gastrointestinal parasites can also reduce immune function, increasing susceptibility to secondary infections and reducing the animal's ability to recover from other health challenges (Zajac and Conboy, 2012). Additionally, parasites can cause long-term damage to internal organs. For instance, liver flukes (*Fasciola hepatica*) in cattle can lead to liver damage and reduce the overall efficiency of the digestive system. Furthermore, the reproductive efficiency of animals can be severely impacted, with infestations leading to decreased fertility rates and birth defects in severe cases (Raza et al., 2007).

Importance of Deworming in Animal Health

Deworming is essential for maintaining animal health, preventing malnutrition and enhancing productivity. By controlling parasitic infestations, deworming ensures that animals can effectively absorb nutrients from their feed, leading to better weight gain, increased milk production and improved overall health. In dairy cattle, for example, routine deworming results in improved milk yields, as parasitic infections can severely impact milk production. Similarly, in meat production, deworming programs help improve feed conversion efficiency, resulting in faster weight gain and higher-quality meat. In companion animals, regular deworming improves vitality, reduces the risk of zoonotic infections and increases the lifespan of pets (ESCCAP, 2023). Additionally, deworming contributes to better overall health, as pets with lower parasitic loads are more resistant to other diseases and infections.

Deworming Strategies

There are various deworming strategies that can be implemented to control parasitic infections in animals. The most common and effective approach is the use of anthelmintic drugs, which are designed to eliminate parasites from the animal's body. However, the strategic use of these drugs is essential to avoid resistance development. Key deworming strategies include:

- **Faecal Egg Count (FEC)-based treatments**: This method involves analysing faecal samples to determine the number of parasite eggs present. Based on the results, veterinarians can tailor treatment protocols to target only animals with a high parasitic burden, preventing unnecessary treatments and reducing the risk of resistance development (Kaplan, 2004).

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- **Rotational Deworming**: This involves using different classes of anthelmintic drugs in rotation to prevent the development of resistance. By alternating between drugs with different modes of action, parasites are less likely to develop resistance to any one treatment.
- **Targeted Selective Treatment (TST)**: TST focuses on treating only those animals that show significant parasitic infestations, as identified through faecal egg count or clinical signs. This approach helps to minimize the use of anthelmintics, preserving their effectiveness for the long term (Kaplan, 2004).

In addition to these drug-based strategies, environmental management is also crucial. Rotational grazing, proper pasture management and hygiene practices such as cleaning water sources and feed containers help reduce the chances of re-infection and contamination in the environment (Zajac and Conboy, 2012).

Deworming in Companion Animals

Companion animals, particularly dogs and cats, are commonly infected with gastrointestinal parasites such as *Toxocara*, *Ancylostoma*, *Giardia* and *Dipylidium*. These parasites cause gastrointestinal disturbances, weight loss and reduced vitality in pets. The zoonotic potential of certain parasites, such as *Toxocara* spp., is a significant concern, as humans-especially children-can be infected through accidental ingestion of parasite eggs from contaminated environments. Routine deworming is therefore crucial for the health of both the pet and the human family members. It is recommended that puppies and kittens be dewormed starting at 2–3 weeks of age and then at regular intervals thereafter, depending on their risk of exposure (ESCCAP, 2023). Owners of outdoor pets or those living in areas with high parasite prevalence should follow a more rigorous deworming schedule to protect their pets and reduce the risk of transmission to humans.

Deworming in Livestock

Livestock are highly susceptible to a variety of gastrointestinal parasites, including *Haemonchus*, *Fasciola*, *Ostertagia* and *Trichostrongylus* species. In ruminants, parasitic infections cause severe economic losses due to decreased weight gain, lower milk production and increased mortality rates. In extensive farming systems, where animals graze freely, the risk of parasitic infection is heightened, particularly during wet and warm seasons when parasites thrive (Raza et al., 2007). A comprehensive deworming schedule that includes pre- and post-grazing treatments can significantly reduce parasitic burdens and enhance livestock productivity. Deworming at key times of the year, such as before and after the rainy season, helps control parasite numbers and reduce the likelihood of outbreaks.

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Integrated Parasite Control and Sustainability

An integrated parasite management approach combines chemical, biological and environmental control measures to reduce the impact of parasites. While anthelmintics are essential in managing parasitic infestations, sustainable management practices such as:

- **Pasture rotation**: This reduces parasite exposure by allowing pastures to rest and disrupt the life cycle of parasites.
- **Manure management**: Proper disposal of animal waste helps prevent parasite eggs from contaminating the environment.
- **Biological control**: The introduction of natural predators of parasitic larvae, such as dung beetles, can reduce parasite populations in pasture systems.

Such integrated strategies are crucial in maintaining the long-term effectiveness of deworming programs while minimizing the risks of anthelmintic resistance (Zajac and Conboy, 2012).

Conclusion

Deworming remains one of the most effective means of maintaining animal health, improving productivity and preventing the spread of zoonotic diseases. As the global challenge of anthelmintic resistance continues to rise, it is essential to implement sustainable, integrated parasite control programs that combine pharmacological treatments with environmental management and good husbandry practices. By adopting a proactive approach to deworming, animal health professionals can significantly improve the welfare of both companion and livestock animals, contributing to healthier ecosystems and enhanced food security.

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