

Understanding Internal Parasites in Beef Cattle

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Internal nematodes (or worms) have been and continue to be a major drain on beef cattle health and economic returns in the beef industry. Internal nematodes impact cattle performance in several different ways with the largest impact being the decrease in voluntary feed intake, followed by decreased absorption and digestion of critical nutrients. Immune function can also be compromised by the constant stimulation of parasitic infections.

Common cattle parasites are found naturally in pastures where cattle graze. The most important nematode species in cattle production are *Ostertagia*, *Haemonchus*, *Trichostrongylus*, and *Cooperia*. Cattle only become infected when they pick up infective L3 larvae as they graze. After eggs hatch in the environment, they molt or change forms twice to become the infective L3 state. Parasite eggs are very resilient and can survive in the environment for long periods of time. This includes surviving drought and winter conditions. This is also perpetuated by the adult nematodes going dormant inside the animal. In Kansas, most nematodes will go dormant during the winter months and once cattle graze infective L3 larvae, the larvae migrate to either the abomasum or intestinal track of cattle. This is where parasites continue their life cycle into adults and will lay eggs that are passed through the digestive track and into the external environment via manure. It is important to note that not all cattle are affected by internal parasites the same. In general, calves are much more susceptible than mature cattle, and bulls are often more susceptible than cows. Even within each class of animal, infections are not evenly distributed. Maturity does play a key role in herd infection rates. Cows will develop decent immunity to internal parasites by about 4 years of age.

Treatment of internal parasites has numerous benefits to beef cattle production. Improved health, increased weaning weights, and increased fertility are all seen with proper parasite control. There are a multitude of deworming (anthelmintic) products on the market. There are options when it comes to application including injectable, oral drench, feed additive, and pour-on formulations. Some of these products are very short acting in the animal, while other formulations have longer acting residual effects. Regardless of product, anthelmintic resistant parasites are a real and increasing concern in the industry today. This means in some situations the products are no longer as effective as they once were. Prudent use of these therapies is critical to ensure their usefulness for years to come.



Discussing deworming programs with your veterinarian is a critically important conversation. Since every beef cattle operation is different, there are no cookie-cutter parasite control programs that can be implemented. Working together with your local veterinarian under a Veterinary Client Patient Relationship will make sure the program fits the needs of the operation. The decisions on product selection and timing can vary depending on history, diagnostics (Fecal Egg Counts), grazing situation, stocking rate, time of year, class of animals, and regionality. Your veterinarian will also be able to give guidance on product purchasing decisions as not all formulations are created equal.

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There are some critical control points that every operation can do to limit the impact of internal parasites. One of the most important management pieces to implement is proper dosing of anthelmintic products. These products are dosed by weight and underdosing can greatly increase the likelihood of resistant nematodes in the environment. Grazing management is another critical component to parasite control. Nematode larvae typically do not migrate further than 5 cm up grass, and 20 cm horizontally from the manure pack. Over grazing grass too low to the ground will increase the opportunity for our animals to be exposed to nematodes. Lastly, ensuring adequate nutrition of our cattle, specifically protein, will enhance cattle's immune response to internal parasites. While this does not clear parasite infections, it does lessen the impact of nematodes in many situations.

Thank you to A.J. Tarpoff, Kansas State Beef Extension Veterinarian, for sharing information related to internal parasites. For further information or question, contact Hunter Nickell, Livestock Production Agent at any of the Southwind Extension District Offices.

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