



Giardia and Cryptosporidium

A silent presence with potential impact

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Giardia duodenalis and *Cryptosporidium* spp. are two intestinal protozoa commonly found in cattle. Transmitted by the fecal-oral route, they spread efficiently because of their low infectious dose, the shedding of infective stages, and their persistence in the environment. Young animals are particularly at risk, but subclinical infections are common and maintain parasite circulation within the herd. Even in the absence of clinical signs, their presence may be associated with impaired production performance and may contribute to environmental contamination. Control measures primarily aim to reduce fecal contamination and the exposure of young animals.

Giardia

G. duodenalis is an extracellular parasite whose trophozoites colonize the small intestine and adhere to the epithelial surface, potentially altering its structure and function. Most infections are asymptomatic in both adult cattle and calves. When clinical disease occurs, giardiasis may present with diarrhea associated with malabsorption and weight loss. Even without clinical signs, infection has been associated with reduced weight gain in calves. The worldwide prevalence of *G. duodenalis* in cattle is estimated at approximately 20%, with calves under six months of age being more likely to be infected.

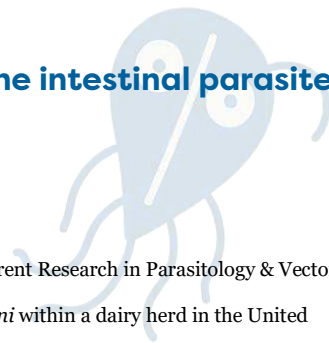
PCR detection of *G. duodenalis* documents the presence of the parasite. Its significance should be interpreted in relation to the animal's age, clinical status, and group performance. Subclinical infections may be associated with effects on growth and may contribute to parasite circulation in the environment. The zoonotic potential of *G. duodenalis* varies according to the genotype (assemblage) present. Appropriate biosecurity measures should be considered following a positive test.

Cryptosporidium

The worldwide prevalence of *Cryptosporidium* spp. in cattle is estimated at approximately 26.5% across all categories and may reach 46.5% in preweaned calves in North America. After ingestion, *Cryptosporidium* spp. colonizes epithelial cells of the digestive tract and produces oocysts that are shed in the feces. These oocysts are immediately infective and highly resistant in the environment. Contamination pressure can be considerable: an infected calf may shed millions of oocysts per gram of feces and several billion over the course of infection, while exposure to only a few dozen oocysts may be sufficient to establish infection in a young calf. This combination promotes rapid amplification of environmental contamination.

Clinical significance depends strongly on the *Cryptosporidium* species and the animal's age. *C. parvum* predominates in young calves and is the species primarily associated with clinical cryptosporidiosis, characterized by watery diarrhea that may cause substantial dehydration. *C. bovis* and *C. ryanae*, more common in postweaning calves, are generally associated with subclinical infections. *C. andersoni*, found mainly in adult cattle, colonizes the abomasum. Although most infections are asymptomatic, some have been associated with gastritis and reduced milk production.

A positive *Cryptosporidium* spp. result should be interpreted according to the animal's age, clinical status, and group performance. In young calves, a positive result is compatible with *C. parvum*. In clinically healthy animals, detection of *Cryptosporidium* spp. may reflect a subclinical infection that could affect performance and contribute to environmental contamination. Because of the zoonotic potential of *C. parvum*, contact between children or immunocompromised individuals and young calves that test positive should be limited.



For more information

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