

CYDECTIN®

PARASITE CONTROL AND PASTURE HEALTH GO HAND-IN-HAND



Ensuring your pasture is healthy and productive is key to any successful grazing operation. So is protecting your cattle from parasites. Many parasite control products, however, pose a threat to one of your pasture's main allies — the dung beetle.

PREVENTION WORKS.



Boehringer
Ingelheim

Dung Beetles – Keeping Cattlemen Successful

Dung beetles provide benefits estimated to be worth upward of \$380 million annually in the United States.¹ This value comes from three major areas:

CATTLE PEST REDUCTION

By breaking down the dung pats that common cattle pests use to lay eggs and develop in, dung beetles help reduce pest populations that affect cattle herds. For example, healthy dung beetle populations have been shown to reduce horn flies by as much as 95 percent, nematode infections 55–89 percent and nematode populations 75–93 percent.^{2,3,4}

PROMOTING PASTURE PRODUCTIVITY

By incorporating manure into the soil, pastures with beetles have been shown to have:

- Improved grass yield, equivalent to application of 200 pounds per acre of nitrogen fertilizer.⁶
- Greater earthworm populations, water retention, and available phosphate, sulfur, carbon and organic matter, leading to a nearly 30 percent increase in forage production.⁷
- Nearly 130 percent deeper water permeation than in pastures without beetles.⁸

INCREASING PASTURE ACCESS

Non-degraded manure can create an area around the dung pat that cattle have been shown to avoid for up to two years.⁵ By breaking down the dung — beetles can bury more than 75 percent of manure on a pasture⁶ — beetles help raise the carrying capacity of the grazing area, so less total land is needed.



MEET POOP-A-CHEW®

He's the hero of dung beetles everywhere. Poop-A-Chew knows how important dung beetles are to pasture and cattle health, so he encourages cattle producers to choose Cydectin® for their parasite control program and keep his fellow beetles safe.

DUNG BEETLE ACTIVITY	BENEFITS TO CATTLE	VALUE TO CATTLE PRODUCERS
Break down breeding/development environment for pests	▼ Fly population 95% ²	▼ Fly treatment applications/costs ¹³
	▼ Fly-transmitted disease (e.g., pinkeye) ¹²	▼ Disease treatment ¹³
	▼ Nematode infections 55–89% ⁴	▼ Nematode treatment applications/costs ¹³
	▼ Nematode populations 75–93% ³	
Breaking apart manure	▲ Forage availability ^{5,6}	▲ 1.3 million additional acres of usable pasture ^{7,8}
Manure incorporation into the soil	▲ Forage productivity ^{6,7,8}	▲ Enriching soil; potential savings of nearly \$85 per acre in nitrogen ⁹
Tunneling through soil		▲ Enhancing soil properties and pasture water retention ^{7,8}
Reduced methane gases	▼ Greenhouse gas emissions ¹⁴	▲ Air quality

DUNG BEETLES FALL INTO THREE CATEGORIES — TUNNELERS, DWELLERS AND ROLLERS — BASED ON HOW THEY USE THE DUNG PAT. ALL THREE TYPES BENEFIT PASTURE AND CATTLE HEALTH.



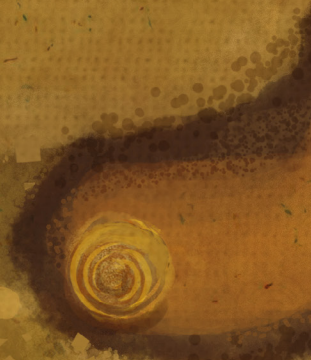
**TYPES OF DUNG
BEETLES IN
PASTURES AND
RANGELAND**

DWELLERS

These beetles spend their time in the dung pat itself, where they lay their eggs.

TUNNELERS

Like their namesake, these beetles build tunnels beneath the dung pat, which they fill with a small dung ball to use as food for their developing offspring.





ROLLERS

Roller beetles roll a dung ball away from the dung pat, and then will pack it into the end of a tunnel, where they will lay their eggs.

Cydectin® – The Right Choice for Cattle and Dung Beetles

The active ingredients in common parasite control products fall into two categories:

Avermectins – doramectin, eprinomectin, ivermectin

Milbemycin – moxidectin

No matter which product you're using, approximately 32–64 parts per billion (ppb) will be excreted in manure. However, active ingredients have varying effects on dung beetle survival. Dung pats from cattle treated with an avermectin dewormer have shown zero dung beetle larval survival at only 16 ppb.¹⁰

In the same study, moxidectin (the active ingredient in CYDECTIN) showed no larval sensitivity until hitting an excretion rate of 128 ppb — far higher than should ever be seen in a production setting.¹⁰ In more than 10 studies, moxidectin has been shown to have little or no effect on dung beetles.¹¹

For cattlemen who want to protect and increase their dung beetle populations, CYDECTIN is the right choice for parasite control:

- Available as either a pour-on or an injectable.
- Broad-spectrum protection against key parasites, including *Ostertagia ostertagi* and *Cooperia* spp.
- No slaughter withdrawal for CYDECTIN Pour-On and a short, 21-day slaughter withdrawal for CYDECTIN Injectable.
- CYDECTIN Injectable is the fastest-acting injectable dewormer on the market, reaching peak blood levels in only 27 hours (compared to 96 hours for Ivomec® Injection and 144 hours for Dectomax® Injectable).



FOR MORE INFORMATION, CONTACT YOUR VETERINARIAN OR BOEHRINGER INGELHEIM VETMEDICA, INC. REPRESENTATIVE. YOU CAN ALSO VISIT BI-VETMEDICA.COM/CATTLE FOR COMPLETE PRODUCT DETAILS.

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- ¹³Assumed, based on benefit to cattle.
- ¹⁴Penttilä A, Slade EM, Simojoki A, et al. Quantifying beetle-mediated effects on gas fluxes from dung pats. *PLOS One* 2013;8(8):e71454. DOI:10.1371/journal.pone.0071454.

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SAFETY INFORMATION:

CYDECTIN INJECTABLE: Do not treat cattle within 21 days of slaughter. Do not use in female dairy cattle of breeding age, veal calves or calves less than 8 weeks of age.

CYDECTIN POUR-ON: When used according to label, there is no slaughter withdrawal or milk discard time required. Do not use in veal calves.

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