

# Keeping the Dewormers Working

*Resistant parasites becoming a greater threat; cattlemen can help.*

by Miranda Reiman, senior associate editor

Dewormers have worked so well for so long that it's hard to imagine a time when they won't.

Christine Navarre, Louisiana State University Extension veterinarian, says that day is closer than one may think. In fact, much evidence says it's already here.

The sheep and goat industries were the first to deal with dewormer-resistant parasites, and they provide

a case study for what's happening in the cattle business today.

"For 15 years, we've been kind of slowly watching it creep up, creep up, and now it seems to have really exploded," says Navarre, noting there isn't a national database tracking the resistance. She monitors incidences by the calls that come into her office. As Navarre helps producers and private practice veterinarians troubleshoot, she fields calls from her native Southeast to as far north as New York state. "It's an equal opportunity problem," she says.

Knowing about the challenge is an important step in solving it, but it begs the question: How did we get here?

## Why the problem

"A lot of it we can blame on ourselves," says Jody Wade, technical services veterinarian for Boehringer Ingelheim. "Unfortunately, there's a lot of dosing issues; if you don't know

the weight of the cattle and you're guessing, that sets those operations up for future problems. If you underdose, then you're setting those internal parasites up for disaster because they're getting

that sub-lethal dose of the product."

The ones that remain are stronger than ever.

"Say I kill 90% of those parasites, then 10% of them survive because they're resistant to a particular compound," Wade notes. "Those that are resistant are going to have babies and produce out on that pasture again. Conceptually there should be an increase every year because of the way we're deworming, and it's not killing everything it should."

Really effective drugs have done their job for three decades, but maybe too well, Navarre says. When macrocyclic lactones, or ivermectin and moxidectin, came out as pour-ons, most producers switched to that class.

"They were highly effective. We got to the point where they were cheap and effective and they made money and they were easy to give. So, for 30 years they've been used almost exclusively," Navarre says.

Today, most of the challenges are associated with that class of dewormers, and there's not a lot of resistance to the "white dewormers" (benzimidazole, albendazole and oxfendazole).

"But what some people are doing is just switching to those products, but not changing how they're using them. That's just going to lead to the same problem," Navarre says.

## Qualifying and quantifying

The first step is knowing if a herd indeed has a challenge, and the symptoms might not be detectable until it's a severe infestation.

"A lot of people think, 'Well, everything is fine because my cows look fine, but that may not be the case,'" Navarre says.

Fecal egg count reduction tests (FECRT) are the most reliable benchmark. That's simply gathering fresh fecal samples at two different times, once pre-treatment and once posttreatment and having it analyzed for eggs.

"You really want those numbers to go to almost zero, and if they don't, then you've got resistance," she says.

Cooperia, or parasitic roundworms, show the greatest resistance today, Wade says.

"Production of beef is how we get paid, and with input costs that we're seeing with fertilizer and feed and everything that goes in — the input cost is astronomical — so the more pounds of beef that we can actually put on the hoof, the better that paycheck's going to be at the end of the year."  
— Jody Wade, Boehringer Ingelheim



“When we do the diagnostic tests and look for worm counts, *Cooperia* is one of those that shows up quite a bit now,” he says, noting ongoing research that asks if that species is really hurting productivity. The answer is “yes,” he says.

“We need to do a better job controlling them,” Wade says.

Resistant ostertagia, or stomach worms, cases are starting to crop up, especially in drought-stressed areas, Navarre says.

“It takes advantage of any type of management situation where the cattle are stressed, particularly any type of nutritional stress,” she says.

Worm pressure can change from year to year, and that’s why an FECRT can help determine species and treatment.

## Change things up

When it comes to combatting the resistant worms, “We need to all be in this together,” Navarre says.

For a more sustainable deworming approach—which increases productive and long-term dewormer efficacy—experts suggest several best management practices:

**1. Get a scale, don’t guess.** “My grandfather always used to tease me about guessing weights; he said, ‘Son, you’d miss a chicken by 30 pounds,’” Wade laughs, but the point is that it is easy to misjudge. Not knowing weights leads to giving the wrong dose.

**2. Long on grass, short on parasites.** Most parasites don’t travel more than four inches up on the grass, so the less grazing pressure on a pasture, the better.

“When you start to over graze and really pick it down close to the ground, they’re picking up parasites because of that,” Wade says. Rotating with other species, like horses or sheep, is an extra line of defense.

**3. Provide a refuge.** “If you’re going to deworm a hundred cows, take 10 of your biggest, fattest ones in there, the ones that really look good body-condition wise, more than likely they’re not suffering too bad from parasites, so you let them out,” Wade says. “They’re the ones that actually put that refugia back out on your pasture.”

The idea is that the resistant worms will breed with the “regular” worms and remain susceptible to pharmaceuticals. Crop farmers would be accustomed to the idea of refuge.

Navarre notes this can also be done by taking a certain class of cattle and choosing not to deworm them, such as mature cows or bulls.

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## Preserving today's tools

Most animal health companies will work with producers and their veterinarians to get FECRTs and help determine the right treatment plan.

“Diagnostically we need to look and see what kind of parasite loads they have. If we’re not dealing with a parasite issue, why spend your money?” Wade says. “I work for an animal health company, but we know that scientifically we need to do the right thing, and we need to only worm the animals that need to be dewormed.”

Navarre looks to the future, with hopes that cattlemen could breed for worm resistance. Although she suspects the industry has done the opposite in the near term.

“We have been breeding cattle with no parasite pressure basically for 30 years now, and so now all of the sudden when you pull that rug out from under them, how susceptible are they compared with cattle 30 years ago?” she asks.

## Worms evading dewormers

“By the time [a species] shows up on that fecal egg count reduction test, the estimates are that 25% of the population is already resistant,” Navarre says.

Much of what is known about the ways parasites outsmart dewormers is product or worm specific. If an ivermectin paralyzes the pest, maybe a resistant worm has found a way to pump the drug out. Or perhaps there’s a mechanism that doesn’t allow for absorption.


“What would be helpful to know is the genetics behind the mechanisms so we can test for it in fecal samples,” Navarre says. However, how it works doesn’t matter near as much as the resulting effect, Navarre says.

“At the end of the day, they’re not working.”

Navarre doesn’t want to find out.

Funding is low, so there’s no new research in this area, she says. That’s why it’s so important to keep the products working that are working today.

If the message of the previous decades was deworm for health and profit, Wade says the current message is: “Don’t sit idle. Get involved and make sure you do something about it. We’re at the point now where most of the parasitologists are telling us that if we don’t fix it now, we’re

going to be using multiple products at the same time to try to kill the high amount of parasites. There are no new molecules coming in the near future, so what we’ve got we better make work for a long period of time.” 

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