

Parasite Resistance Concerns Cattle Industry Experts

BATON ROUGE, LA.

Cattle industry experts are becoming increasingly concerned about cattle parasites' resistance to dewormers – a condition known as anthelmintic resistance.

Anthelmintic resistance has been identified worldwide in all commercially available products to control cattle parasites, said LSU AgCenter veterinarian Christine Navarre.

“The extent of the resistance varies from country to country and from ranch to ranch,” Navarre said. “It’s a very complex and serious issue.”

Cattle producers need a basic understanding of parasite biology and control measures so they can work with their veterinarian to develop parasite control programs, she said. They need to balance the short-term economic benefits of deworming with the long-term effects of resistance.

Adult parasites live in the gastrointestinal tract of cattle and lay eggs that are shed in manure. These eggs hatch and develop into infective larvae, which crawl onto the grass and are eaten when cattle graze. The larvae then develop into adults, and the cycle starts over again.

Parasites that no longer are controlled by individual dewormers develop what Navarre calls “anthelmintic resistance.”

“Anthelmintic resistance is an inevitable consequence of the use of anthelmintics over time,” Navarre said.

“Resistant parasites have genes that protect them from the effects of the anthelmintic,” she added. “The parasites may be resistant to one or multiple products at the same time.

Ranches can also acquire anthelmintic-resis-

tant parasites when they add new animals to their herds.”

Diagnostic testing is required to determine the existence and extent of parasite problems and anthelmintic resistance on each ranch.

One of the key concepts in slowing down the development of resistance is the maintenance of “refugia,” Navarre said.

“Parasites in refugia do not have genes for anthelmintic resistance – they are still susceptible to anthelmintics,” she said. “The more refugia in a population, the more the resistance genes in a population are diluted and the more effective anthelmintics will be.”

Parasites in refugia can be on pasture or in animals.

“When an entire group of cattle is dewormed, we eliminate refugia in the animals,” Navarre said. “The only parasites that survive the deworming are the few that are resistant. These resistant parasites then mate and multiply and soon take over. Eventually, there is failure of the dewormer to work as expected.”

The problem can be avoided by trying not to eliminate all parasites on a ranch.

“Cattle producers should work with their veterinarian to find a balance between keeping overall parasite levels low enough to prevent economic losses while at the same time retaining some refugia to slow the progression of anthelmintic resistance,” Navarre said.

More information on cattle parasites and anthelmintic resistance is available in a new fact sheet from the LSU AgCenter. It can be found by going to www.lsuagcenter.com and typing “anthelmintic resistance” in the search box. Δ