

# Deworming Practices and Avermectin Resistance in Beef Calves

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## Introduction

Resistance to anthelmintics is a widely described phenomenon in ruminants. A survey of the deworming practices by Kentucky cattlemen indicated that cows and calves were dewormed on average 1.7 times annually with a maximum report of 3 times. 73% of respondents were satisfied with their internal parasite control. 93% reported that they had used avermectin products in the past five years, and 48% used avermectin products exclusively.

## Materials and Methods

In the late summer/fall 2005, two cow calf beef producers in central Kentucky participated in a study to determine the efficacy of two anthelmintic products on their farm. These producers had reported at least a five year history of using avermectin products. The selected spring born calves were close to weaning or weaned but not dewormed in the past two months. Calves were individually identified and weighed at the initial treatment for accurate dosage. Forty calves were randomly allocated at the chute to one of four groups. Group C was the control with no treatment. Group F was treated orally with fenbendazole (Safe-Guard®) suspension at 5 mg/kg. Group I was treated topically

with ivermectin (Ivomec Pour-on®) at 500 µg/kg. Group IF was treated with both ivermectin topically and fenbendazole orally. Fecals were collected per rectum on Day 0 and again fourteen (14) days later. Modified McMaster Fecal Egg Count (flotation liquid was a Sodium Chloride saturated solution) was performed at Louisiana State University School of Veterinary Medicine by Dr. James Miller.

## Results

Fecal egg count reduction tests indicated that both farms have avermectin resistance (FEER farm 1 54%, farm 2 86%) but susceptible to benzimidazoles (FEER farm 1 100%, farm 2 99%.) Fecal larval culture revealed 30% ostertagia and 70% cooperia at Day 0 (pretreatment) and 100% cooperia at Day 14 (post treatment.)

## Significance

Survey results indicate that Kentucky beef producers deworm their cattle at least one each year. It is important to reduce the parasite load in young calves. Avermectin products eliminated ostertagia adult worms but did not completely eliminate cooperia worms in calves at weaning time.