Clenbuterol Holstein Bull Calf Trial

Calf Care and Handling

Twenty Holstein bull calves were purchased for the trial. On arrival (Sept 18/96) their average weight was determined to be approximately 126 kilograms. The calves were then vaccinated and dewormed for internal and external parasites. Urine samples were also taken to determine if any of the purchased calves would test positive for clenbuterol residue. Two of the twenty calves were found to be positive and they were eliminated as trial candidates. The calves were then randomly assigned to one of three pens (six calves per group).

At the start of the official feeding period (November 1/96) the eighteen calves were individually weighed to determine their initial weights. Two calf groups were given 5 ml of a clenbuterol solution twice daily for the next 30 days (November 2nd to December 1st, 1996). The calves were also fed a 16.2 percent crude protein diet consisting of four parts whole shelled corn to one part commercial supplement. The ration was formulated to be well above nutritional requirements for all common dietary nutrients. Weights of feed offered to each group were automatically recorded with fed refusals weighed weekly. The calves were fed to appetite for the duration of the feeding period.

The calves were weighed every seven days to determine growth rates by week for the first six week period (November 1st to December 6th). Black hair (50 mg) and urine samples (10 ml) were also periodically taken (table 1) for later analysis. They were also ultrasounded twice during the initial thirty day period to determine mid (November 13th) and final (December 2nd) readings for backfat cover (between 12th and 13th rib) and ribeye area (square inches). After the initial thirty day feeding period calves were slaughtered in group of three (one control and two treated calves) over a 70 day period. Each group was weighed on two consecutive days before they were shipped to the Animal Science abattoir at the University of Guelph and slaughtered.

Visual Observations During Feeding Period

There was an immediate change in muscle mass after the start of the feeding period for the two clenbuterol medicated groups. Within a four day period the difference between control and medicated calves was apparent. Clenbuterol treated calves grew less in stature while weight gain were similar for both groups. Therefore more muscle development was visually observed for the Clenbuterol treated calves.