

processing plants.

Consultants to the beef, swine, and poultry industries are carrying packaged TQM programs to their clients. One such agribusiness consultant conducted TQM training sessions with the staff of a large calf ranch client. Over six months, he transformed this dairy calf operation from one that was continuously reacting to crises into a stable, successful financially sound, quality operation. As I watched the consultant and his process unfolded, I recognized that he used the skills and experience that most dairy practitioners possess. He organized managed personnel so they established specific, tangible goals for each area of their calf-raising operation. He then showed them how to communicate and organize teams of people to work together to accomplish the goals that were established; teaching, team

approach, and developing specific daily routines were keys. Each group monitored their performance, demonstrating to themselves and upper management the quality of their accomplishments. Many dairy practitioners already possess the same experience, skills, and familiarity with their quality principles. Regardless of the size of your clients' operations, providing this type of TQM philosophy is an opportunity for dairy practitioners.

Total Quality Management is a concept that has potential for application in the dairy industry. Veterinarians can look beyond past successes, recognize and identify customers for their services, and participate with quality-conscious dairy clients who are the future of the dairy industry.

Abstract

Nematode burdens and productivity of grazing cattle treated with a prototype sustained-release bolus containing ivermectin

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One hundred and twenty four-month-old Hereford-Friesian cross heifers weighing from 88 to 130 kg were divided into two equal groups. One group acted as a control with each animal receiving one placebo bolus, the other animals received one prototype intraruminal sustained-release bolus designed to deliver approximately 8 mg ivermectin/day for 100 to 120 days. The boluses were administered the day before turnout in mid-May. Each group was grazed separately for 167 days on pastures contaminated with parasitic nematode larvae including the lungworm *Dictyocaulus viviparus*, and the gastrointestinal worms *Ostertagia ostertagi*, *Cooperia oncophora* and *Nematodirus helvetianus*. Parasitic disease did not occur in the ivermectin-bolus group, but the control group required anthelmintic treatment to control parasitic gastroenteritis at 111 and 154 days after turnout. Up to the 111th day after turnout, the peak mean nematode egg and larval counts per gram of faeces in controls was, respectively, 564 epg and 0.5 lpg. Based

on faecal nematode egg counts and worm burdens in bolus-treated cattle removed from pasture at 119 days after turnout and bolus function studies, it was concluded that ivermectin delivery from the prototype bolus ceased between 95 and 98 days after administration. However, unlike the controls, the treated cattle did not develop parasitic gastroenteritis at any time. Their faecal nematode egg output was significantly ($P < 0.01$) lower (< 1 epg) compared to the controls and lungworm larval output zero during the functional life of the bolus. The faecal egg and larval outputs continued low until the end of the trial. In addition, the nematode contamination of the pasture grazed by the bolus-treated cattle remained low throughout the grazing season compared to the control pasture, even after cessation of ivermectin delivery. By 119 days after turnout, the ivermectin-treated cattle had a significant ($P < 0.01$) mean weight gain advantage of 28.6 kg over the controls, which was maintained until the end of the grazing season.