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THE INFLUENCE OF INTERNAL PARASITES ON REPLACEMENT DAIRY HEIFERS DURING THEIR SECOND YEAR OF LIFE

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The regular treatment of heifers with anthelmintics during the first 12 months of life is commonly adopted as part of their routine management.

A trial was repeated each year for five consecutive years on one property when half the replacement heifers were drenched during their second year of life.

All the replacement heifers on a seasonal supply (250 cows) dairy farm in the Maungatapere district of Northland were used. After weaning, the heifers were set-stocked in large paddocks away from the area of farm grazed by the adult herd, and were drenched for worms every 4 to 6 weeks. The property had no history of severe parasitism, and liver fluke had never been diagnosed.

Between July and September of each year the yearling heifers were paired on liveweight and breed. One of each pair was dosed with levamisole and oxyclozanide† at rates according to label recommendations. A further three to eight treatments were administered at intervals of 4 months to 1 month until shortly before the start of calving 8 to 12 months after the first drench. At most drenchings all animals were weighed. Treated and untreated (control) heifers were run together at all times.

During the second or third week of October, three beef bulls were put with the heifers for 9 to 12 weeks. Some animals were induced to calve prematurely each year, depending on feed availability. During the first, second and fifth years, faecal samples were occasionally collected and examined for worm and liver fluke eggs.

Production was recorded by the Livestock Improvement Association (Northland) Inc., using alternate monthly tests.

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There were no deaths or clinical symptoms attributable to roundworm or liver fluke infestation. None of the faecal samples yielded liver fluke eggs or more than 100 roundworm eggs per gram.

The treated heifers gained an average 14 kg more than the control during each weighing period in the 5 years ( $P < 0.05$ ) (Table 1). In none of the 5 years were increases in rate of weight gain recorded following the treatments administered in November, December, January, April or May.

TABLE 1: EFFECTS OF DRENCHING ON LIVEWEIGHT, FERTILITY AND MILKFAT PRODUCTION OF YEARLING DAIRY HEIFERS

	<i>Treated</i>	<i>Control</i>	<i>Difference</i>
No. of heifers .....	162	160	—
Initial liveweight (kg) .....	175	174	1
Precalving liveweight (kg) .....	312	298	14
Pregnancy rate (%) .....	90.8	86.2	4.6
% Induced calving .....	2.5	11.2	8.7
Milkfat (kg) .....	102	92	10
Lactation length (days) .....	236	225	11

Of the 162 treated heifers, 9.2% were empty, 2.5% were induced to calve prematurely, and 88.3% calved within the desired period. The corresponding figures for the 160 control heifers were 13.8, 11.2 and 75%. Despite the greater number which were induced to calve prematurely, the control heifers had a calving period 11 to 31 days longer than the treated heifers in four of the five years.

In each of the 5 years the treated animals produced more milkfat per head in their first lactation than the controls (average annual advantage of 6.0, 11.5, 11.0, 5.0 and 21.5 kg fat, with an average advantage over the 5 years of 11 kg fat per head;  $P < 0.05$ ).