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Brief Communication

THE EFFECT OF GROWTH IMPLANTS ON CATTLE
AND SHEEP PRODUCTION

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Growth implants were developed in North America to help improve efficiency in cattle feedlots and have been used since the late fifties in many different management systems in over 30 countries. Most implants are based on natural or synthetic sex hormones, while zeranol*, the only implant registered for use in N.Z., is a true anabolic agent.

The mode of action of zeranol is to cause increased secretion of the animal's growth hormone, probably by direct pituitary stimulation (Wangness, 1980). It increases cortisol and prolactin levels and provides some anti-stress activity. The anabolic effect of zeranol causes increased protein metabolism and a greater retention of nitrogen which improves feed conversion efficiency (Brown, 1980).

In N.Z. RALGRO is licensed under the Animal Remedies Act for use with suckling calves, weaners, vealers, boner and cull cows, fattening steers and heifers and dairy beef. It has a withholding period of 65 days to slaughter and must not be used in pregnant or lactating cows and bulls retained for breeding.

CATTLE

RALGRO has been extensively tested in cattle in North America, Britain and Australia. Typical results are shown in Table 1.

Recent N.Z. trials monitored by MAF advisory personnel are shown in Table 2 (South, 1981).

After being effective for 80-100 days RALGRO may be re-implanted to obtain further responses. This practice is established overseas with some animals getting five implants from birth to slaughter. To get significant responses cattle need good nutrition and management and at least 60 days of good feeding should be available after implantation.

The cost-benefit of implanting is good. Currently implants cost \$1.54 per animal. At an average liveweight price of 80c/kg a 12 kg response gives an increased return of \$9.60 and a net profit of \$8.06/head.

* RALGRO Wellcome (N.Z.) Ltd — distributor

TABLE 1: RALGRO RESPONSES IN CATTLE — OVERSEAS

Country	No. of trials	Liveweight response		Reference
		kg	%	
U.S.A.	91	11.6	17	Anon (1978)
Australia (N.S.W., Vic., W.A.)	8	6.3	10	Sammons (1980)
Australia (N.S.W., Vic.)	5	13.2	20	Wellington and Geldard (1980)
Australia (Queensland)	11	12.9	24	No reference
U.K.	10	n.a.	24	Bennett <i>et al.</i> (1974)

TABLE 2: RALGRO RESPONSES IN CATTLE — N.Z.

Location	Class	No. treated	Days	Response		
				kg	%	
Scargill	Suckling steers	25	98	5.3	6.4	NS
Waipara	Suckling heifers, steers	36	120	10.4	16.2	*
Hawarden	Weaver heifers	22	105	12.0	28.4	*
Motunau	Yearling steers	31	105	14.9	23.6	**
Motunau	Adult steers	29	96	17.2	16.4	**
Mean				12.1	18.0	

FATTENING BULLS

Growth responses of about 6% have been observed in bulls in the United States and N.Z. A behavioural response may also occur. It has been noted that sexual maturity was delayed when bulls were sequentially implanted from birth. Implanted bulls did considerably less mounting and had a testis weight at slaughter about half that of untreated bulls. The behavioural response would appear to be greater when bulls are implanted before much sexual development has occurred, and implants are continued. The factors involved are under study.

SUCKLING LAMBS

RALGRO has been used to improve production in lambs in North America and Europe. N.Z. trials in conjunction with MAF advisory officers were carried out with 3 to 4 week-old suckling lambs in 1979/80. The average response to implantation was 0.9 kg (6.0%), similar to overseas results (Table 3).

TABLE 3: RALGRO RESPONSE IN SUCKLING LAMBS

Location	No. implanted	Days	Liveweight gain, g/day		Response		
			Control	RALGRO	kg	%	
Hastings	118	91	219	222	0.29	1.1	NS
Cheviot	32	63	251	279	1.77	11.1	*
Motunau	77	81	n.a.	n.a.	1.57	9.7	n.a.
Omih	90	63	255	267	0.79	4.9	*
Oxford	45	73	195	210	1.10	7.7	*
Maheno	77	63	182	197	0.98	8.2	**
Mean					0.93	6.0	

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