



STARTECT® TALK

PRODUCTIVITY STUDY

► PURPOSE

This study was undertaken to demonstrate that the effective drench, STARTECT®, when used on a property with prevailing drench resistance, can help to manage drench resistance and maximise sheep production responses.

► STUDY DESIGN

This NZ study commenced in late autumn (April) and finished the end of August. Ten farmlets had approximately 30 lambs on each farmlet. The replicated design provided a high level of statistical accuracy. Stocking rate remained consistent on each farmlet throughout the study. Five farmlets used STARTECT and the ineffective drench, albendazole (ABZ) was used on the remaining 5 farmlets. Lambs were all drenched following the manufacturer recommended dose rates at monthly intervals (preventive drenching). All lambs were retained on the property for the duration of the study.

Worms established previously on the study site were known to be resistant to BZ (white) drenches. They were mixed resistant infections, composed of *Trichostrongylus*, *Teladorsagia* and *Nematodirus*.

Study parameters are listed in Table 1.

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STARTECT STUDY HIGHLIGHTS

- **Highly effective combination drench**
- **>99% effective control**
- **Controlled drench-resistant worms**
- **Improved animal condition**
- **Maximised production**
- **Earlier finished lambs**
- **Ineffective drench delayed finishing over a month**
- **Projected benefits finishing lambs earlier include:**
 - Saving drench and labour costs
 - Reduced yarding of stock
 - Increased pasture for more lambs or cattle
 - Conserved supplement feed option
 - Improved business cash flows
 - Greater returns to the farmer

 **Animal Health**

 **STARTECT®**
Annihilate worms today. Protect tomorrow.

STUDY RESULTS

STARTECT KEY FACTS

- ▶ **STARTECT Performance**
- ↑ Highly effective > 99%

- ▶ **Managed worm burdens**
- ↑ Improved worm management
- ↑ Controlled resistant worms
- ↓ Minimised worm burdens
- ↓ Reduced pasture contamination
- ↓ Reduced drench resistant worms
- ↓ Minimised impact on productivity

- ▶ **Improved Animal Condition**
- ↑ Improved body condition score
- ↓ Lowered dag score

Study Drench Efficacy

Faecal Egg Count Reduction Tests (FECRT) were completed after every treatment.

STARTECT remained highly effective against all worm species throughout the study, >99%.

FECRT of the last two ABZ treatments demonstrated efficacies of 48.4% and 40.9% for *Trichostrongylus* and *Teladorsagia*, respectively.

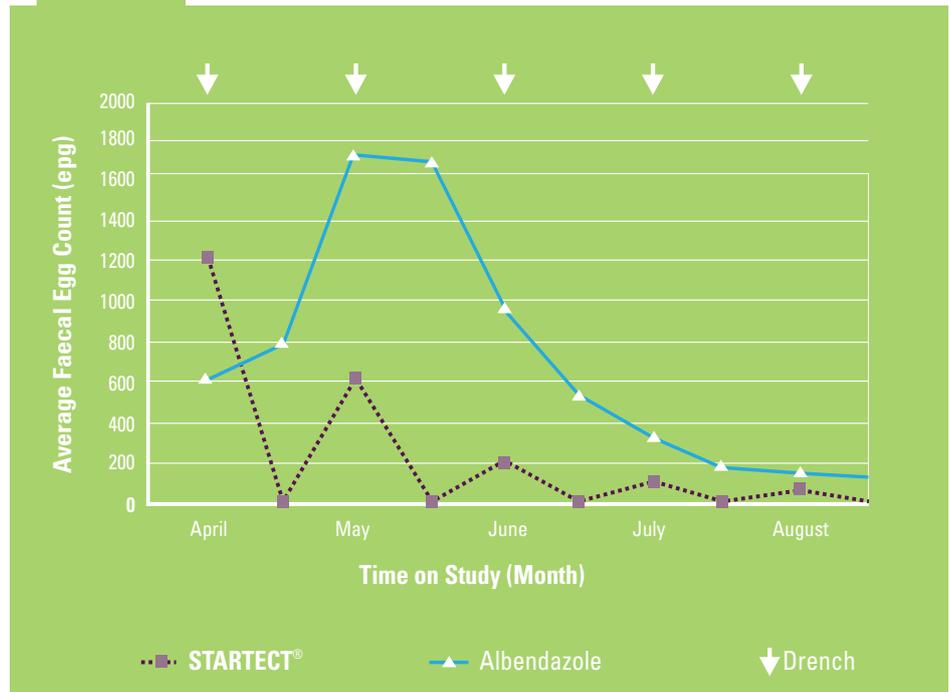
The 28-day retreatment interval in all likelihood over-exaggerated the actual level of resistance to ABZ; drench resistant worms would have continually accumulated in the stock each month as drenching and FECRT were undertaken at monthly intervals.

Worm infections

The worm infections assessed from faecal cultures changed over the period of the trial; *Trichostrongylus* dominated (60%) at the start and *Teladorsagia* dominant (90%) at the end. *Haemonchus* was only found at very low levels early in the study and *Nematodirus* was not detected after mid-July. Based on FEC, infections in ABZ-treated lambs rose rapidly during the first month of the study, remained elevated during the 2nd month (May) and then subsequently slowly declined over the rest of the study (Figure 1). FEC indicated reinfection of lambs after each STARTECT treatment but the levels declined steadily after each monthly treatment.

Figure 1

Mean faecal egg counts (FEC) from lambs treated with STARTECT or albendazole over the duration of the study.



Animal Condition

Body condition scores were significantly higher for the STARTECT lambs while dag scores were significantly higher in ABZ-treated lambs (Table 1 and Figure 4). During the latter 2-3 months of the study FEC and body condition scores were in the ranges that suggested the lambs were affected sub-clinically by parasitism.



STUDY RESULTS

Table 1

Mean values for production and parasite factors for lambs treated with STARTECT or albendazole at monthly intervals.

PARAMETER	STARTECT®	ALBENDAZOLE	P VALUE
Mean faecal egg counts	199.4	660.0	0.001
Overall live weight gain (kg)	25.43	16.43	0.001
Fleece weights (kg)	2.02	1.66	0.001
Carcass weight (kg)	23.36	18.64	0.001
Carcass value (\$)	111.60	100.04	0.001
Fat depth (mm)	11.35	7.78	0.001
Condition score at 3rd treatment	2.7	2.3	0.026
Final condition score	3.41	2.44	0.001
Faecal soiling score at 3rd treatment	0.72	1.804	0.002

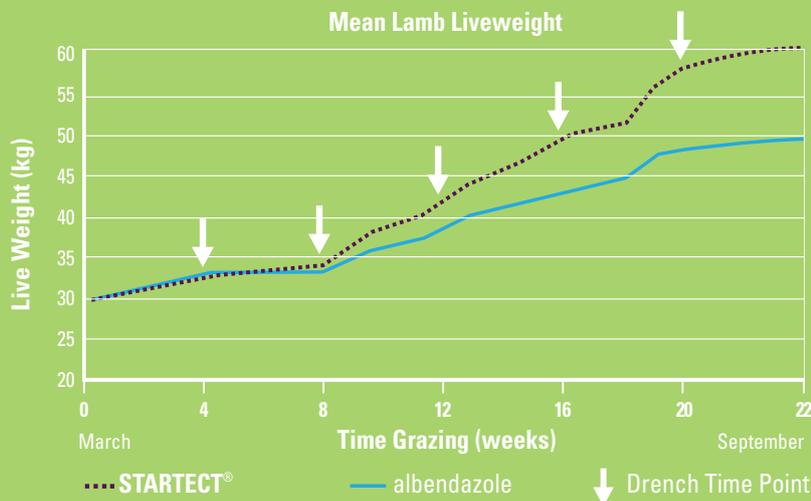
Productivity Responses

Both treatment groups started the study at equal average liveweights (29kg). Lambs in both groups grew throughout the study (Figure 2). Liveweight changes between STARTECT-treated and ineffectively-treated lambs were significantly different after the 2nd drench. Differences between the groups remained significant thereafter. STARTECT-treated lambs grew an average 9kg more across the study (Figure 2). This translated into 4.7kg carcass weight, almost 1kg improved growth per month.

STARTECT-treated lambs grew an average 360gm more wool (Table 1).

Figure 2

Cumulative liveweight of lambs treated with STARTECT or albendazole at monthly intervals over the time of the study.



STARTECT KEY FACTS

- ▶ **Improved Productivity**
- ↑ Raised growth rate
- ↑ Increased body weight (average 9kg)
- ↑ Increased carcass weight (average 4.7kg)
- ↑ Better wool weight (average 360gm)



STUDY RESULTS

STARTECT can finish lambs earlier

Lambs given STARTECT reached a target draft liveweight of 38kg earlier than those treated with the ineffective ABZ (Figure 3). This liveweight would be expected to yield an optimal lamb carcass of about 18-19kg.

By the 3rd drench 55% of STARTECT and 29% of ineffectively drenched lambs had reached target. After the 3rd treatment 99% of STARTECT-treated lambs were at or over 38kg but only 77% ABZ lambs were 38kg. At the end, almost 10% of ABZ-drenched lambs had not reached the 38kg target.

Under these study conditions, farmers using STARTECT could expect to sell lambs earlier and improve farm profitability creating a cash flow with money in their pockets before they would if using an ineffective drench; plus, they could save costs of drenching and labour managing the stock.

Figure 3

Percentage of lambs reaching target draft weight of 38kg.

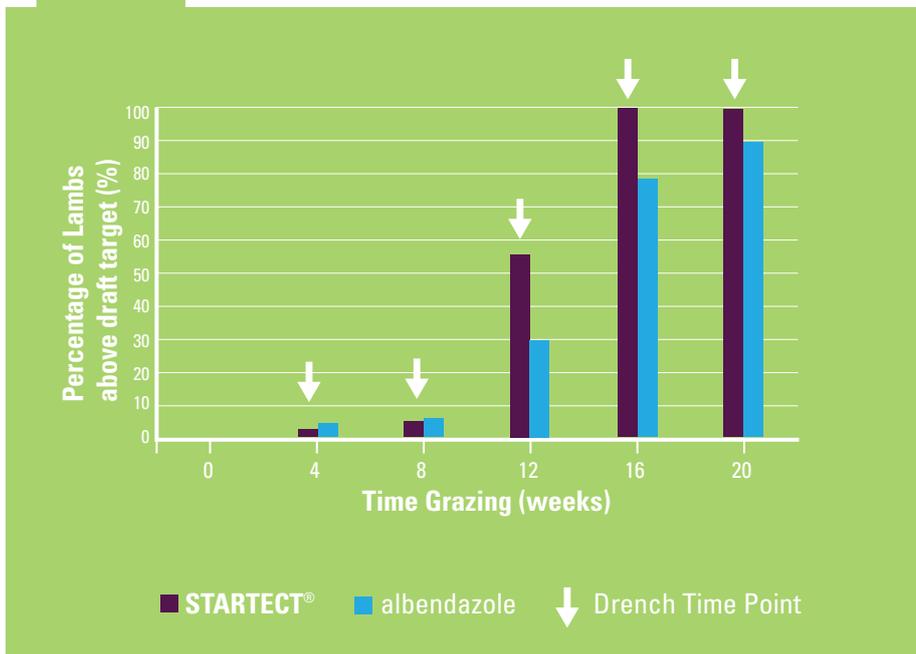


Figure 4

STARTECT treated lambs compared to those treated with an ineffective drench.



STARTECT treated lambs at the 3rd drench

Albendazole treated lambs at the 3rd drench

Reference

CM Miller, C.M., TS Waghorn, T.S., DM Leathwick, D.M., PM Candy, P.M., Oliver, A-M.B., Watson, T.G. (2011 inpress).

Lamb productivity responses and benefits to monthly STARTECT treatment of grazing lambs exposed to mixed anthelmintic-resistant nematode parasite pasture challenge. NZVA Sheep & Beef Veterinarians Conf. Proceedings.

STARTECT KEY FACTS

Financial Benefits

- ↑ Lambs finished earlier
- ↑ 55% drafted before 3rd drench
- ↑ 99% drafted before 4th drench
- ↑ Improved draft by over a month
- ↑ Assisted return on investment
- ↑ Improved profitability



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