



STARTECT KEY FACTS

► Resistance

- Resistant worms are difficult to detect without FECRT
- Once established almost impossible to eliminate
- Increases farm costs
- Affects animal growth potential
- Reduces farm profitability
- Widespread on NZ sheep farms

STARTECT® TALK

QUARANTINE DRENCHING & PARASITE MANAGEMENT

► ANTHELMINTIC RESISTANCE IN NEW ZEALAND SHEEP

For some time farmers have faced the expanding problem of drench resistance. However, the loss of efficacy is never obvious because resistant worms are often not detectable, so the importance of resistance is often forgotten. But resistance is permanent and costs can be substantial because resistance results from genetic selection of worms that leave worm populations unable to be controlled with drugs.

In 2005 an estimated 64% of all sheep properties (2 of every 3) had some form of resistance established on them (Table 1). In the last two decades resistance to "mectins" has emerged and become very widespread (25% of farms). This now threatens most combination drenches because all consist of the 2 or 3 older active families (BZ, LEV and MLs) and the majority are composed of one "mectin", abamectin. Despite the fact that many dual and the triple combination drenches were not tested, between 8 and 13% of farms have 2-way or 3-way drench resistances in worms. Cases of resistance to duals (6%) and triples have been detected, so it may be only a matter of time before widespread resistance to duals and triples are demonstrated.

Table 1 Prevalence (%) of random selected farms with anthelmintic resistance (<95% faecal egg count reduction)

COUNTRY	ANTHELMINTIC DRUG							
	BZ	LEV	IVM	BZ + LEV COMB	BZ & IVM	LEV & IVM	BZ & LEV & IVM	1 or More ACTIVES
NEW ZEALAND*	41 %	24 %	25 % †	6 %	13 %	10 %	8 %	64 %

BZ = Benzimidazole; LEV = Levamisole; ML = Macrocyclic Lactones (IVM = Ivermectin); COMB = BZ+LEV Combination; *Mainly Teladorsagia (Ostertagia); †Waghorn et al, 2006, NZ Vet J.

 **Animal Health**

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

STARTECT KEY FACTS

▶ STARTECT

- >99% effective control
- Combination drench
- Novel active with no detected resistance

▶ Quarantine Drenching

- Stops resistant worms being introduced or transferred from another source e.g. brought in rams, lambs or ewes

QUARANTINE DRENCHING

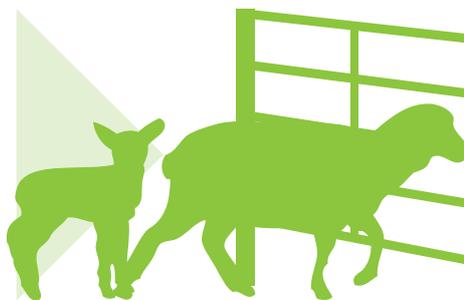
Quarantine drenching is designed to ensure resistant worms are not introduced or transferred from another source. This may be from animals purchased onto the farm or moved within the same farming enterprise.

Previous drenching history and drench resistance status may be unknown when animals are purchased, or transferred onto the farm as replacements (ewes and rams) or as lambs for finishing. Drenches that were suitable as quarantine drenches 15 or 20 years ago are no longer suitable for this purpose now. STARTECT® is a combination of a novel active that has no detected resistance. These reasons make it an ideal selection as a quarantine drench.

Animals should be given STARTECT immediately prior to movement or transfer, and left on especially reserved pasture (quarantine paddock) for approximately 24-48 hours to allow animals to empty. Make sure that water is available to the stock even if feed is restricted. Re-infection will be minimised while the drench is at its highest levels.

The quarantine paddock will be contaminated so measures to help reduce future potential challenge to sheep include:

- Not grazing with susceptible sheep
- Grazing with cattle (and older stock)
- Using grass for supplements such as hay or silage
- Replanting as a pasture regeneration exercise

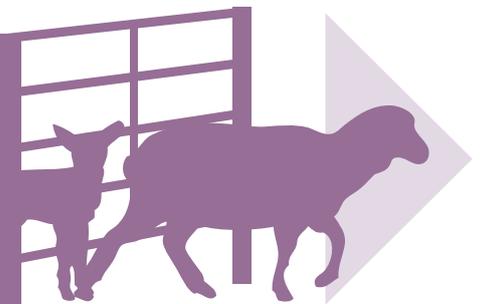


New stock brought onto farm

- Keep in yard or quarantine paddock separate from current stock
- Drench to remove resistant parasite burden in animals
- Allow 24-48 hours before moving to normal grazing

Stock sold off farm

- Drench to remove resistant parasites before exiting farm
- Stock should be kept in yard or quarantine paddock
- Drench at least 24 hours before stock exits farm



Conclusion

Quarantine drenching is an extremely important aspect of any effective parasite management programme. It ensures resistant worm burdens are not introduced or transferred from one property and established on another. This will help slow the emergence of resistance so producers can grow stock to potential and for maximised farm revenues.

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. The production cost of anthelmintic resistance in lambs. *Veterinary Parasitology* (Submitted).

Sutherland, I.A., Bailey, J., Shaw, R.J. 2010. The production costs of anthelmintic resistance in sheep managed within a monthly preventive drench program. *Veterinary Parasitology* 171, 300-304.

Waghorn, T.S., Leathwick, D.M., Rhodes, A.P., Lawrence, K.E., Jackson, R., Pomroy, W.E., West, D.M., Moffat, J.R. 2006. Prevalence of anthelmintic resistance on sheep farms in New Zealand. *NZ Vet. J.* 54, 271-277.