

Capsule use in lambing ewes

Being parasite-free means more protein and energy allowances are channelled into milk production rather than into fighting off worm infection. The result is better nourished lambs, better lamb survival rates, and healthier, heavier ewes at weaning.

Other possible benefits include less crutching of ewes and weaners, no tail-end in mobs, the prevention of dag formation and therefore reduced flystrike.

The financial benefits of using capsules have been well researched and documented. Field trials and responses measured on commercial properties have shown high productivity gains from the use of CRCs to control internal parasites in sheep flocks⁸.

EWES	INCREASE	VALUE
Retained bodyweight over lambing	5kg	\$5.00
Increased wool growth	5%	\$2.50
Retained wool tensile strength	10 N/ktex	\$4.00
Increased lambing percentage	5%	\$2.50
Reduced dag formation	2 score	\$0.70
Increased weight of lambs at weaning	3.5kg	\$8.80
TOTAL INCREASE IN VALUE PER TREATED EWE		\$23.00

Potential returns from using CRCs (values current Dec 2009)

Cleaner pastures

Use of controlled release capsules reduces pasture contamination, allowing greater flexibility for stock and pasture management. Graziers can utilise pasture to its maximum potential and not be compromised by worm burdens.

When treated with CRCs prior to lambing, ewes contaminate pastures less, which means weaners can be weaned onto the lambing paddock, making use of the most productive pastures. With access to the best feed, weaners gain condition and live weight faster. Also, as CRC treated ewes have retained better condition throughout the lambing period, they can be put onto maintenance pasture after weaning.

Management advantages of Controlled Release Capsules

- Reduced parasite contamination of lambing paddocks
- Drenching at weaning may not be required
- Early sale of lambs
- Less crutching of ewes and weaners
- Better utilisation of pasture
- No tail-end in mobs
- Peace of mind with good parasite control



Other advantages of BIONIC

A single treatment with a BIONIC CRC replaces oral drenching at regular intervals, minimising mustering and handling, saving time and labour.

The BIONIC CRC's potent combination of active ingredients means that no primer anthelmintic is required. This saves on handling and treatment times as well as cost.

BIONIC is the most complete long acting product on the market. This is because the BIONIC CRC delivers both abamectin and albendazole in a controlled dose for 100 days before shutting down.

COMPARISON CHART

Days Protection	H. contortus	Tr. colubriformis	Te. circumcincta	Te. trifurcata	Tr. vitellus	Tr. axei	C. curticei	C. ontophora	N. spathiger	N. filicollis	Chabertia ovis	Oe. columbianum	Oe. venulosum	Trichostrongylus axei	Strongyloides papillifera	Protosstrongylus rufescens	Dicrocoelium viverrini	Cobalt	Selenium
Bionic	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	210	
Cydectin® LAI	91	49	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eweguard®	21	7	21	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0

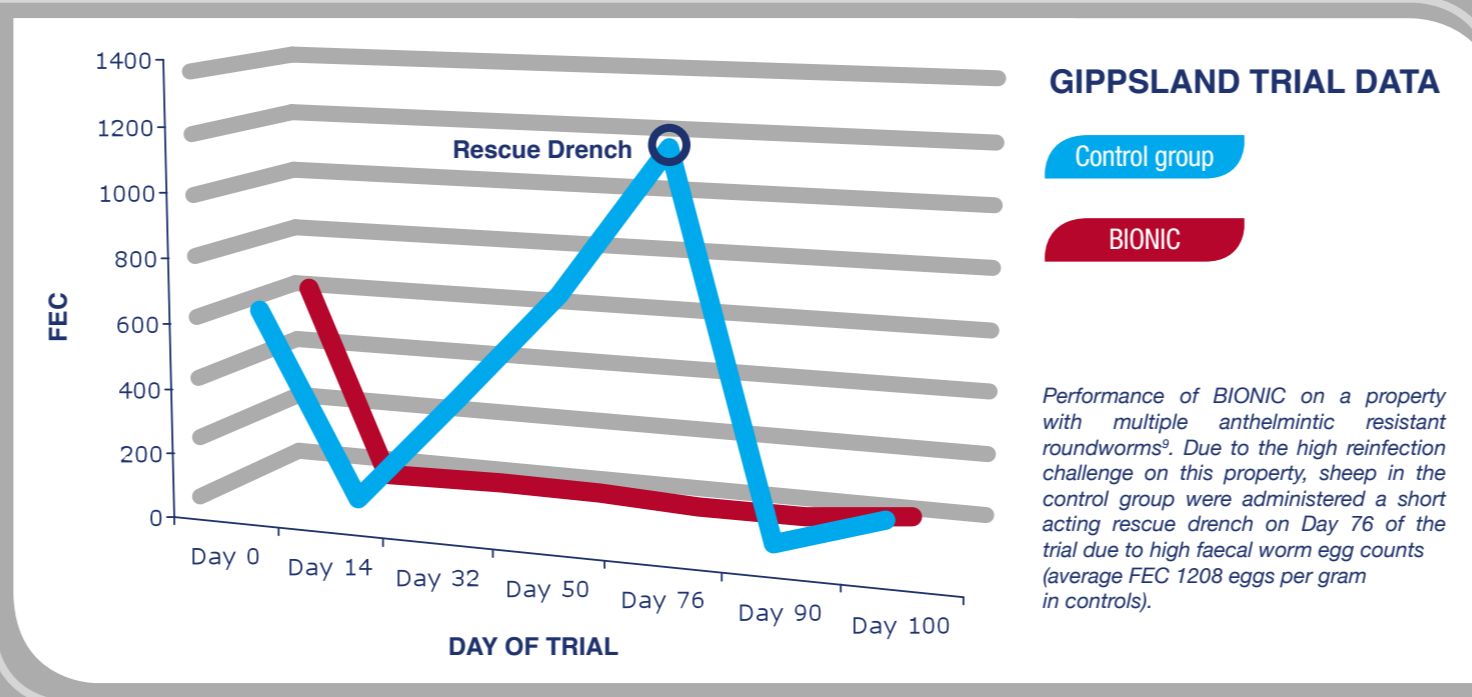
Graph is based on label claims for persistent activity in sheep.

Field trials demonstrate the power of BIONIC

On a property in the Gippsland region of Victoria with a history of drench failure and a high level of multiple anthelmintic resistant roundworm challenge, BIONIC CRCs achieved excellent results, without the use of a primer drench⁹. The high infection challenge encountered during the trial period is demonstrated by the need to use an effective rescue drench (HAT-TRICK[®]) in the control group at day 76 of the trial.

Property details:

- Multiple anthelmintic resistant roundworm challenge
- Heavy stock losses due to severe roundworm infection in year prior to trial
- Self replacing Merino flock under nutritional stress
- High roundworm reinfection challenge throughout the trial period



This trial demonstrates the power of the BIONIC CRC to achieve excellent results in a very difficult environment (multiple anthelmintic resistant roundworms, high larval challenge), providing the producer with "set and forget" roundworm control for 100 days.

Selenium and cobalt

The BIONIC CRC provides a selenium and cobalt supplement for sheep raised in selenium and/or cobalt deficient areas. Mineral supplementation will last for at least 210 days for selenium and for 100 days for cobalt.

Effects of selenium deficiency in sheep

- reduced fertility in ewes
- ill thrift in weaners and lambs
- white muscle disease in extreme cases

Effects of cobalt deficiency in sheep

- depression of appetite
- reduction in ewe fertility
- lower than expected growth rates
- poor wool production
- increased mortality in lambs born to cobalt deficient ewes
- weakened immune system increasing risk of infection



Active ingredients

Each capsule contains 160 mg abamectin, 4.62 g albendazole, 24 mg selenium and 120 mg cobalt

BIONIC

TRUE COMBINATION POWER

100 DAYS CONTROLLED RELEASE CAPSULE




Ancare

BIONIC® – TRUE COMBINATION POWER

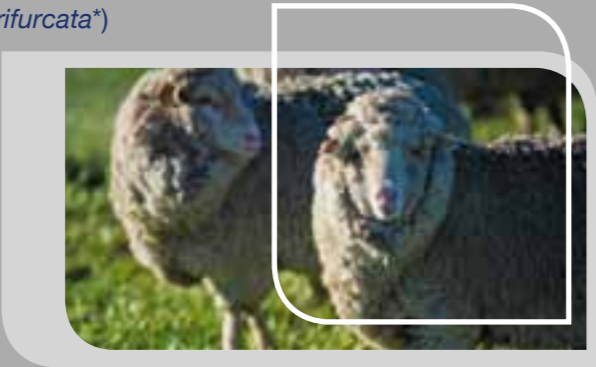
The BIONIC Controlled Release Capsule is a revolution in capsule technology.

For the first time, a true combination capsule is available that releases two different active ingredients simultaneously to give combination killing power for 100 days.

Each BIONIC Controlled Release Capsule (*CRC*) contains a combination of abamectin, a macrocyclic lactone which has been shown to be more potent than ivermectin, and albendazole, a member of the benzimidazole (white) drench family. The BIONIC *CRC* provides potent, sustained 100-day protection against a broad spectrum of internal parasites. As for any combination product, use of BIONIC Controlled Release Capsules will slow the onset of resistance.

The BIONIC *CRC* pays out both short acting ingredients simultaneously over a 100 day period, providing sustained protection for sheep against the following sensitive strains of parasitic nematodes (*includes inhibited L4 larvae):

- Barber’s Pole Worm (*Haemonchus contortus**)
- Small Brown Stomach Worm (*Teladorsagia [Ostertagia] circumcincta**, *Te. trifurcata**)
- Black Scour Worm (*Trichostrongylus colubriformis**, *Tr. vitrinus**)
- Stomach Hair Worm (*Trichostrongylus axei**)
- Small Intestinal Worm (*Cooperia curticei*, *C. oncophora*)
- Thin Necked Intestinal Worm (*Nematodirus spathiger**, *N. filicollis**)
- Large Mouth Bowel Worm (*Chabertia ovina*)
- Nodule Worm (*Oesophagostomum columbianum*)
- Large Bowel Worm (*O. venulosum*)
- Whipworm (*Trichuris* spp.)
- Intestinal Threadworm (*Strongyloides papillosus*)
- Lungworm (*Protostrongylus rufescens*, *Dictyocaulus filaria*)

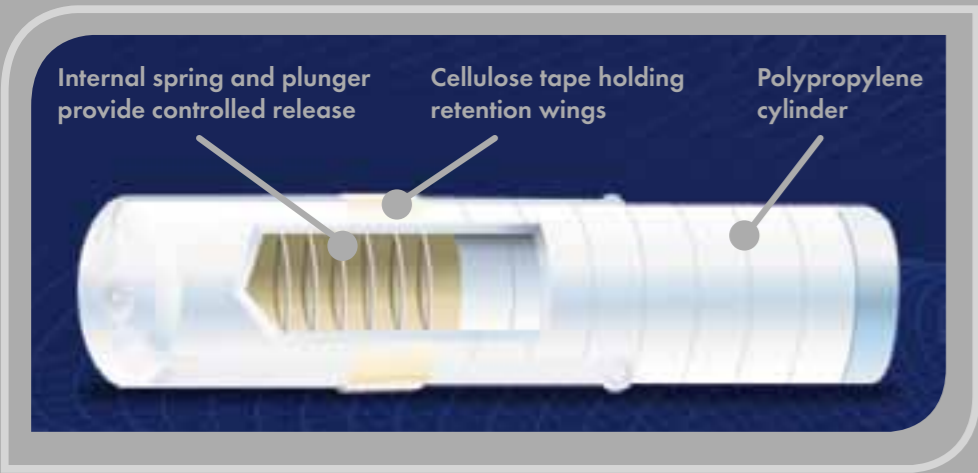


BIONIC *CRC*s also reduce pasture contamination with nematode eggs for at least 100 days.

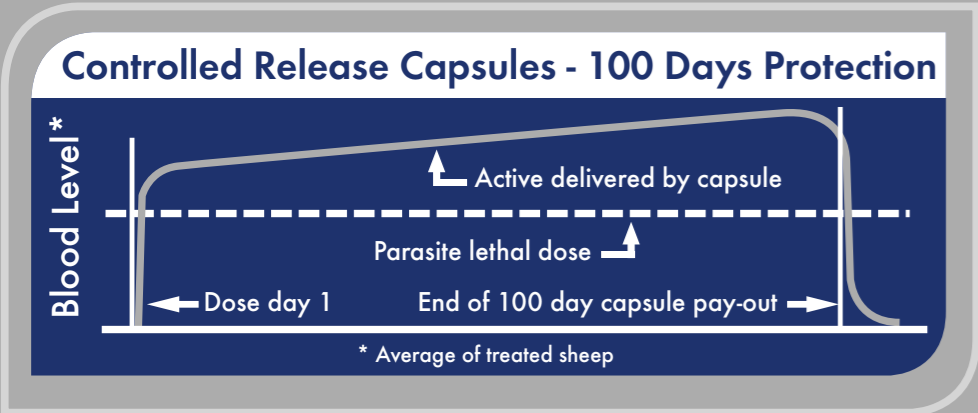
BIONIC *CRC*s also provide a selenium and cobalt supplement for sheep raised in selenium and/or cobalt deficient areas. Mineral supplementation will last for at least 210 days for selenium and for 100 days for cobalt.

Studies also demonstrate that BIONIC *CRC*s can control ML and BZ resistant worms¹.

How do Controlled Release Capsules work?



*CRC*s supply a measured dose of short-acting ingredients every day to ensure reliable efficacy. The graphic below demonstrates the broad spectrum protection against worms of a single capsule treatment over 100 days, followed by a quick shut down at the end of the payout period.



Resistance management

As opposed to long acting injectable anthelmintics, the *CRC* has a short chemical ‘tail’ as a result of a rapid shutdown of delivery of short acting ingredients at the end of the payout period. A *CRC* therefore provides the benefit of long lasting protection, reducing the need for repeated drenching with short acting compounds, while also minimising resistance selection due to not having a long chemical tail.

Strategic use of *CRC*s can assist in ensuring worm control programs are sustainable. Achieving effective worm control and reducing pasture contamination earlier in the season reduces reliance on subsequent treatments often required in parasite control programs. Reducing drench frequency can be an important way of reducing selection for chemical resistance.

Studies have shown that *CRC*s containing albendazole can inhibit the development of resistant eggs and larvae^{2,3}, and interfere with egg laying of adult female worms^{4,5}. The end result is less contamination of pasture with eggs from resistant worms and those eggs that are laid are less likely to hatch and develop into resistant larvae.

True Combination Power

It is widely accepted that the use of combination anthelmintics slows resistance development in parasites^{6,7}. Combination drenches use active ingredients from different drench families to achieve a higher potency than that of single ingredients used alone. The potency of a combination drench results in fewer worms surviving treatment, so less resistance genes remain to contribute to resistance in subsequent generations of worms.

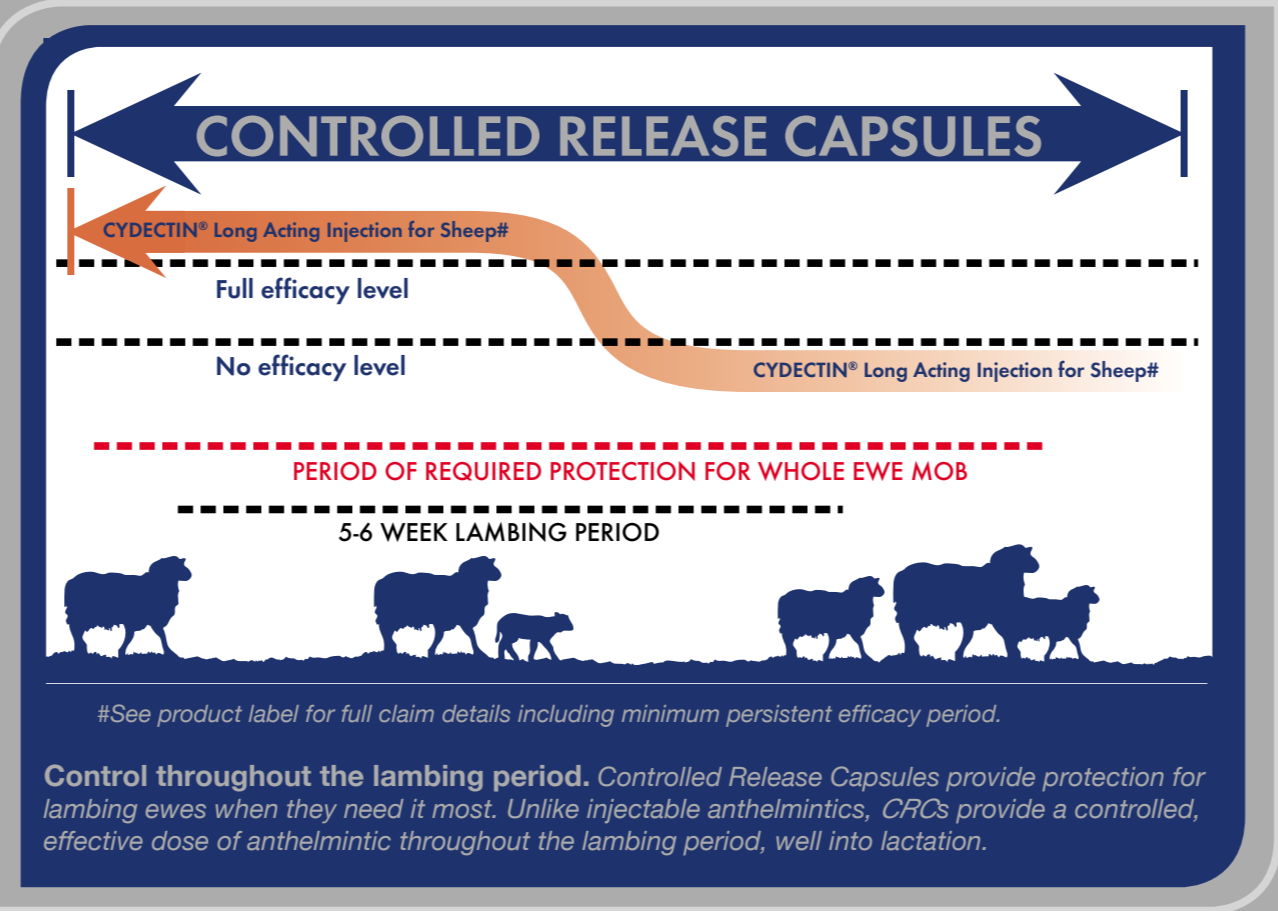
The BIONIC *CRC* is the first true combination capsule available, releasing a controlled amount of the two actives albendazole and abamectin over a 100 day period. Your property’s drench resistance status should be taken into account before using any anthelmintic.

Why use an anthelmintic capsule?

Farmers have been using controlled release anthelmintic capsules for many years to control the parasite infection that ewes tend to pick up over lambing. This gives them the following benefits:

- Increased productivity
- Increased milk production resulting in better lamb weights at weaning
- Less dagging and therefore less crutching and reduced flystrike
- Increased lambing percentage
- Bigger lambs that reach target weights earlier
- Increased wool production
- Ewes in better condition for mating

Around the time of lambing, great stress is placed on the ewe and her immune system relaxes, allowing a population of parasites to establish. BIONIC provides 100 days broad spectrum protection at this critical time.



Dosage Guide

One capsule per animal weighing 40 kg to 80 kg. Dose animals over 80 kg with 2 capsules each.

Live weight	Dose	100 Capsule pack treats	500 Capsule pack treats
40 to 80kg	1 capsule	100	500
above 80kg	2 capsules	50	250

Applicators

The BIONIC *CRC* and the CENTAGARD *CRC* can be administered using either the BIONIC applicator or existing capsule applicators designed for the EXTENDER® capsule. Read the instruction leaflet carefully. It is advisable to obtain instruction in the correct dosing technique prior to administering controlled release capsules.



BIONIC
TRUE COMBINATION POWER

BIONIC *CRC* Withholding Periods
 MEAT: DO NOT USE less than 125 days before slaughter for human consumption.
 MILK: DO NOT USE in ewes which are producing, or may in the future produce, milk or milk products for human consumption.
 EXPORT SLAUGHTER INTERVAL (ESI): DO NOT USE less than 164 days before slaughter for export. Before using BIONIC, confirm the current ESI by contacting Ancare on 1800 001 973 or refer to the APVMA website.

Precautions and contraindications
 Selenium can have toxic effects, particularly in sheep with liver damage that graze in areas where plants containing pyrrolizidine alkaloids are present. Subsequent doses of BIONIC Controlled Release Combination Capsules should not be administered within 270 days. Do not use at the same time as other selenium treatments, such as selenised vaccines, drenches or pellets, pasture top dressing and fertilisers, without consulting a veterinarian. Use only in areas of known selenium deficiency. Seek veterinary advice to establish selenium deficiency before use. Do not administer selenium supplements within one year of long-term selenium bullet or capsule treatment.

Ancare Technical Helpline 1800 001 973

1. Data on file. 2. Fisher MA, Jacobs DE, Jones PA (1992) *Veterinary Record* 130, 351–2. 3. Data on file. 4. Anderson N *et al.* (1988) *Australian Advances in Veterinary Science*, 60–1. AVA, Sydney, Australia. 5. Sutherland IA *et al.* (1998) *Veterinary Research Communications* 22, 305–14. 6. Smith G (1990) *Intl J Parasitol* 20, 913-21. 7. Barnes EH *et al.* (1995) *Parasitol Today* 11, 56-63. 8,9. Data on file. *BIONIC and HAT-TRICK are registered trademarks of Ancare Pty Limited. ®Extender is a registered trademark of Merial Australia Pty Limited. ©CYDECTIN and EWEGUARD are registered trademarks of Virbac (Australia) Pty Ltd. BION-10-000