

Best Practice - LA Drenches



Why do we use them?

Generally, long-acting (LA) products are used for one of two basic reasons:

- 1** To address an ongoing worm challenge that would otherwise require more than one short-acting (SA) drench to be used. Putting weaners onto a wormy paddock would be one example of this, as would be the use of LA products when weather conditions have resulted in high barber's pole numbers on pasture.
- 2** To protect vulnerable stock over a period where the farmer has minimal access to them. Pre-lambing usage of LA products is one such example. This usage assumes worm levels on the lambing paddock are high enough to cause an issue whilst the ewes are going through a period where their immune system responsiveness is reduced.

Historically, LA products have also been used to push productivity in stock. Longer-term control of worms has been shown to increase weight gains and other production parameters¹ but overusing LA products to maximise gains can lead to quicker development of resistance². Most LA product usage nowadays is either focused on pre-lambing usage or on situations where worm challenge has become overwhelming.

Whilst LA product usage at pre-lambing is beneficial in many cases, there is still a need to apply best practice approaches when using them so that they can continue to provide control benefits for many years to come. The key steps to consider are as follows:

- 1** Use a product that works – Drenching best practice 101 for all drench types.
- 2** Use a priming drench at the same time as the LA product.
- 3** Review the need for an exit/tail-cutter drench at least once after the use of the LA product.
- 4** Plan an annual drenching plan that does not overuse the active(s) in your LA product.
- 5** Prepare clean lambing paddocks.

¹<https://paraboss.com.au/news/long-acting-worm-treatments-the-good-the-bad-and-the-ghastly/>

²<https://wormboss.com.au/tests-tools/effective-use-of-long-acting-drenches/>

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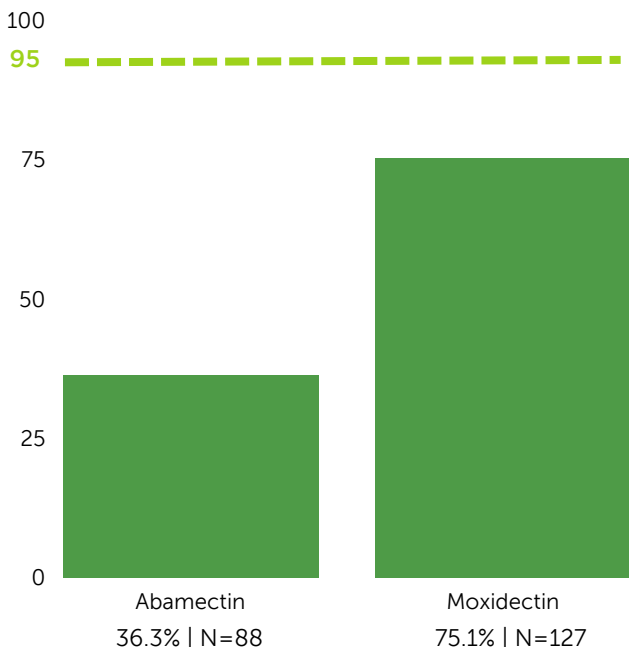


All LA products rely on the macrocyclic lactone (mectin) chemical family. LA injections contain Moxidectin and LA capsules contain Abamectin. Even some mid-length products such as Avomec® Duel can contain this chemical family. For many sheep properties, this chemical family is either under resistance pressure today or is nearing the time when obvious numbers of worms will remain after drenching. The average results shown in the graphs below for Barber's Pole and Brown Stomach Worm demonstrate the pressure that Abamectin and Moxidectin are under in the field.

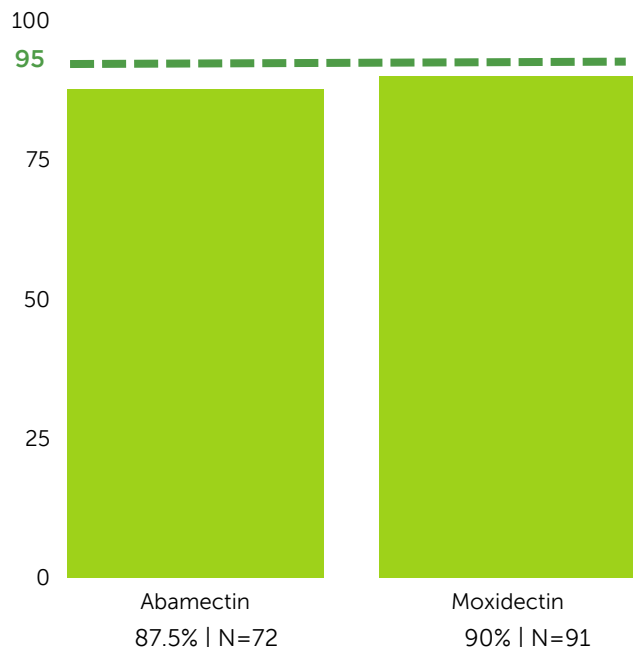
These results are for the two actives when administered within SA products.

The results highlight that one cannot assume that the available LA products are highly effective on any given property. If data exists on a property confirming high levels of efficacy, then **point (1) above** is at least partly dealt with. However, **point (2) above** (use of a primer drench) will increase the likelihood of high levels of efficacy and will reduce a significant amount of the resistance selection that is possible when using LA products.

Barber's Pole Worm Efficacy
(Haemonchus contortus) AM MEAN

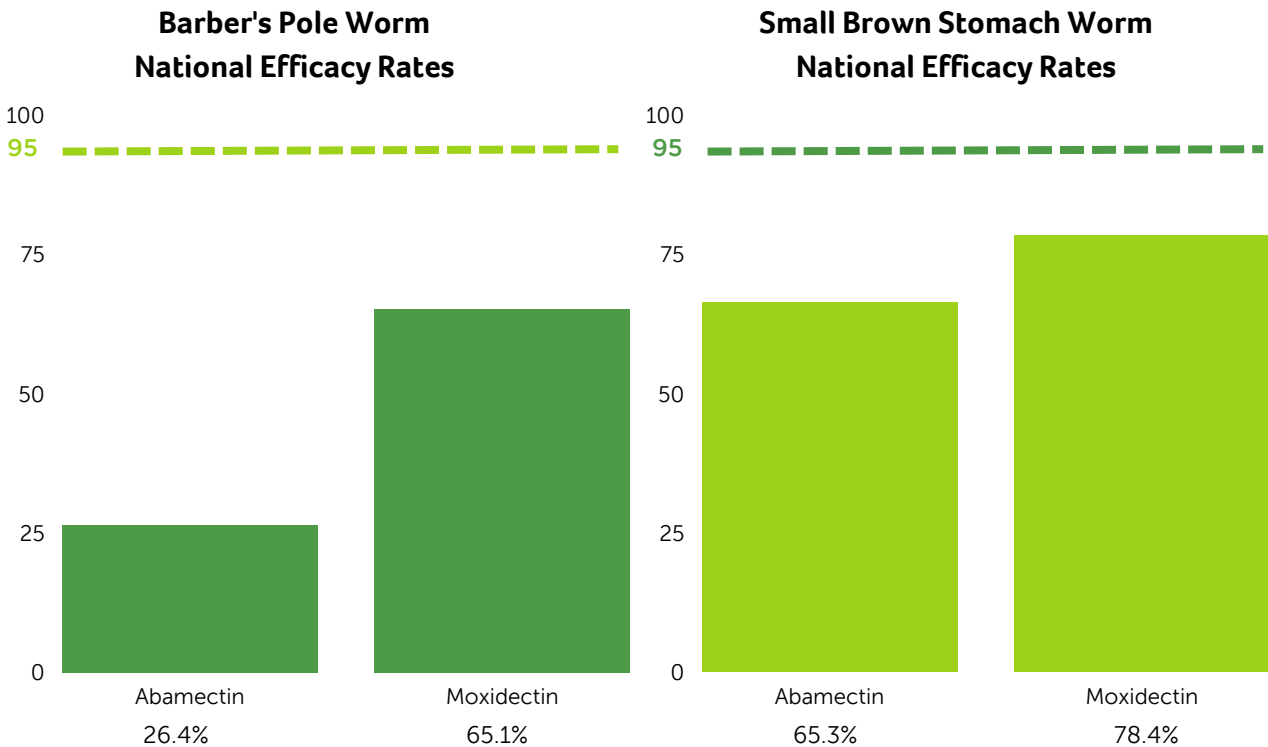


Brown Stomach Worm Efficacy
(Teladorsagia circumcincta) AM MEAN



Source - Zoetis Sheeptrax

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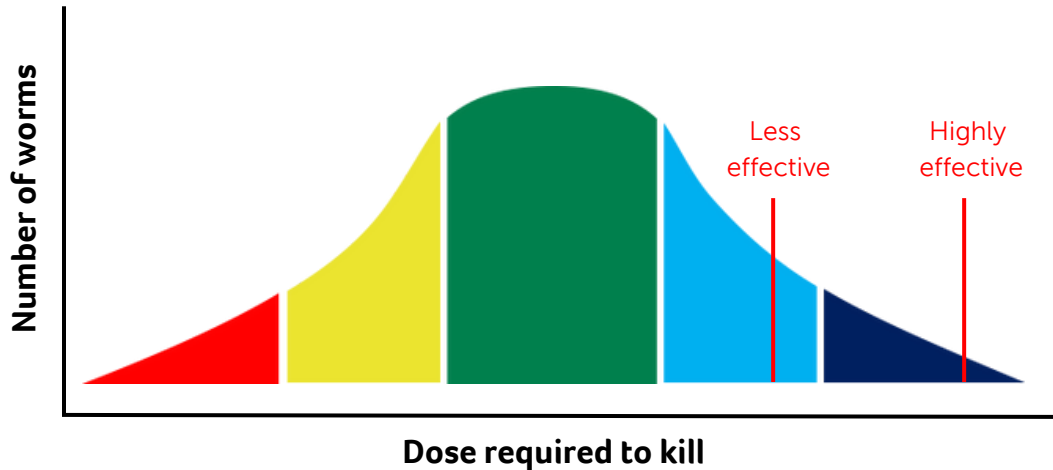
Source - Virbac Tridectin® Portal

What is a priming dose and why does it reduce resistance selection?

At any given time, the worm population on a property or even in a paddock will contain a diversity of worms all varying in how sensitive they are to whichever drench active you are describing. An example of this diversity is shown in the image overleaf. Even from the first day of use a new drench will be exposed to some worms that require a larger dose than others to kill them. These harder-to-kill worms are represented by the dark blue segment of the curve overleaf and will initially be present in very low numbers. Highly effective drenches will leave in the sheep after treatment very few of these. However, over time the same drench will start to allow more to survive as the genetics from the surviving (dark blue) worms start to spread to the other types of worm (moving the red efficacy line to the left). In any strategy we employ to slow resistance, we need to minimise the advantage that these harder-to-kill worms get to pass on their genetic material.³

³<https://wormboss.com.au/drench-resistance/what-is-drench-resistance/>

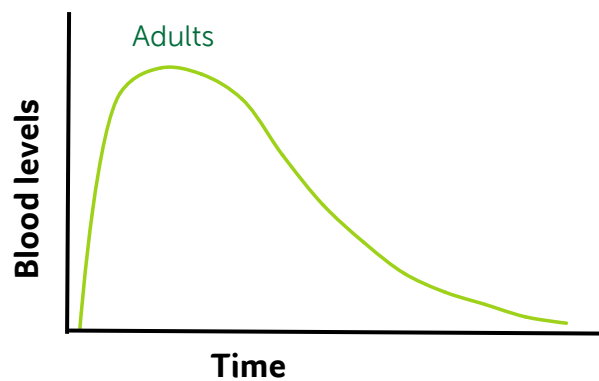
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When the dark blue worms survive the initial dose levels supplied by the LA product, the survivors are adult worms. These can continue to produce eggs and influence the populations' genetics for the length of time that the active is restricting the establishment of other incoming immature worms. For the existing LA products, this period of advantage is 91-100 days.⁴ A primer drench, even though it is short-acting, can remove these adults and significantly reduce the advantage that the dark blue worms are getting.

The incoming immature worms will probably also be made up of significant numbers of light blue worms so there may be a need to remove them towards the end of the protection period of the product. An exit drench (or tail-cutter) can be used when the numbers seen are too high (point 3 above).

Your local Animal Production Specialist (APS) will have some details on what levels justify such a drench as the usage will be dependent on the class and health of the stock involved and on paddock specifics (e.g., who is next to graze the paddock).* The APS can also help with determining when the drench is best administered.*



To determine if an exit drench is required a worm egg count (WEC) needs to be done during the protection period for the product in question. The best timing for this WEC is at least partly dependent on whether efficacy data is available for the product being used. If you do not have any idea of just how effective the LA product actually is, then either day 30 or day 60 post-treatment is recommended.

⁴ See product labels for Dynamax[®] capsules and Cydectin 2% Injection for Sheep
*Any specialised advice provided to customers will be subject to terms and conditions.

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By checking at day 30 you can get an early indication of efficacy and if the result is not clear-cut then you have the option of repeating it at day 60. If it is clear-cut that the product has let too many worms establish, then you have some proof that the product is not as effective as expected and you can do something sooner to remove resistant worms.

If previous data is supportive of the product being used (e.g., a WEC was conducted on day 30 last year) then you can probably wait until day 60 to see if an exit drench is required or not. Your local APS can help you get the most benefit from this important best practice recommendation.*

What products can be used as primer doses and exit drenches?

The main rules to consider when making a choice are:

- 1 Don't use the same active that is present in the LA product.**
- 2 Use a product that is likely to be reasonably effective in its own right.**

LA injections contain Moxidectin, so a SA drench containing this active should not be used as a primer or exit drench. The main reason for this is compliance. Residues assessments are made, and withholding periods are determined based on a certain level of tested intake of an active ingredient. By using the same active in the LA product and the primer you are effectively going beyond the residue assurances that exist within the registration system. There are also potential safety issues associated with such non-compliant usage of an active. The same applies when considering the use of Abamectin-based drenches as a primer or exit drench when using Dynamax® capsules.

Where it gets interesting is when the primer or exit drench contains another member of the same chemical family but not the same active. The use of Abamectin-based drenches with a Moxidectin LA injection is such a scenario. This is not specifically prohibited by current label language. However, it is still preferable to consider not "doubling up" on the same chemical family with your primer or exit drench if possible.

Two obvious examples to consider for a primer drench with a Moxidectin LA injection would be Zolvix® or a BZ/LEV product (e.g. Dalgety® Combinator LV Plus Selenium). Zolvix® contains a newer effective active from a different chemical family, monepantel. The use of a product like Duoshield effectively creates a triple-active combination like Tridectin®. Your local APS can help you with other product options to use.*

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Can I use the active in my LA product elsewhere in my annual worm plan?

When the LA product is well-primed, and you have proof that the active itself is still effective then the answer is probably YES. However, the active should be used within combination products which themselves should be assessed for efficacy at least once a year. There is also the issue of what worm species are you targeting with your LA product. Where Barber's Pole worm is not readily present when the LA product is being used then there is some merit in having a summer or Barber's Pole focused strategy that doesn't include the active from your LA product. In this way, you are giving the active a rest and minimising selection to it in the "off-season".

This may sound reasonable in theory but in the real world that we live in there is often insufficient efficacy knowledge on products being used and less than useful information available on each property as to when Barber's Pole worms are present and at what levels. How this situation and your choice of LA active influences the final plan that is put in place is best discussed with your local APS.* The final worming plan should include regular assessment of efficacy for the drenches being used (drench checks) and the information gained from such monitoring will help in determining how often and when the active in the LA product can be used within the plan.

Clean lambing paddocks!

If lambing ewes in good condition are drenched with an effective SA product and then placed on a clean paddock it is conceivable that a LA pre-lambing drench is not required. Placing ewes onto a relatively clean paddock, no matter the drench strategy being used should greatly reduce the potential for a worm crisis to follow. However, lambing is usually at times of the year when worm survival is good so it is likely that the paddock being used will not be very clean. Whilst this makes worm control harder and increases the usefulness of LA products there should be less selection for resistance occurring at these times of the year as there should be numerous worms on pasture that can dilute out the dark blue ones. Of course, less dilution is required if an effective primer drench was used!

Discuss options for preparing clean paddocks for lambing with your local APS as it is not just a case of leaving a paddock ungrazed for a month or so prior to lambing.* Worms have many ways to ensure their longer-term survival and supposedly low-shedding stock grazing in the months prior to lambing may be leaving more worms than you realise. Close monitoring and planning of paddock options for lambing well in advance can help you achieve a good (low) worm base to lamb down on.

Visit your local Nutrien Ag Solutions store and speak to one of our Animal Production Specialists to discuss your parasite control program.*

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