

Wormwise

FOR FINE WOOL: LAMBS

'Wormwise for fine wool' is a summary of the important points from the existing Wormwise resource, adapted for fine wool systems. Refer to the full Wormwise Handbook for more extensive information.



Managing worms in fine wool lambs

The principles of worm management for sheep on fine wool properties are the same as for other types of sheep farming. However, there are extra challenges specifically related to fine wool. This is partly due to the type of sheep, and partly with the environment and systems under which they typically are farmed.

This document is an attempt to put the principles of sustainable worm management into context for fine wool operations, and highlight examples where farmers are having success taking a farm system approach to managing worms in their fine wool sheep.

Fine wool lambs

Lambs are generally the biggest contributor to worm larval contamination on pasture in a sheep farm system.


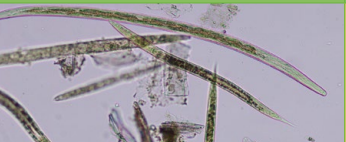


They are born with no innate defence against worms. In their first year or so of life, they must develop their own immunity to worms.

Lambs ingest worm larvae every day when grazing pasture; their body has to learn that these larvae and subsequent life stages are 'foreign' and develop an immune response. Fine wool lambs can take longer to develop this immune response than crossbred lambs. This may, in part, be related to fine wool lambs taking longer to reach the percentage of their mature weight at which immunity develops, though some of this is due to management and feeding.

The faster lambs can be grown through to a weight where they develop some of their own immunity to worms, the less the cost to their own performance, and the less they contribute to overall farm worm contamination.

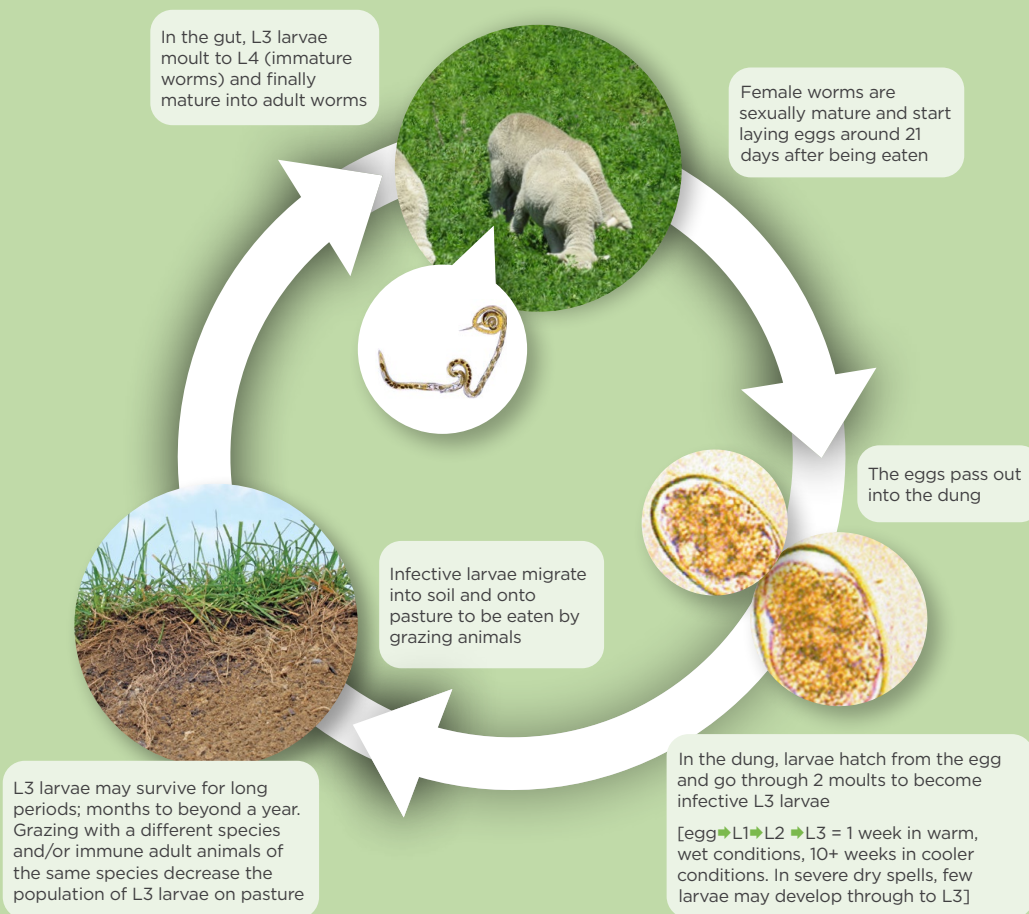
The fine wool breeds have generally evolved in relatively dry environments, so New Zealand breeders have had to focus on selection of animals that can thrive under our comparatively wetter conditions.

What worms could be affecting your lambs?

<i>Haemonchus</i> Barber's Pole	<i>Teladorsagia</i> Brown stomach worm	<i>Trichostrongylus</i> Black scour worm	<i>Nematodirus</i>
			
Lives in the abomasum.	Lives in the abomasum.	Three species, most significant ones live in the intestine.	Lives in the small intestine.
Blood-sucking parasite causing anaemia, ill thrift, lethargy and sudden death. Bottle jaw in older sheep. Mostly seen through the summer/autumn. Doesn't cause scouring.	Weight loss, scour. Not a prolific egg layer, don't normally see high egg counts. Common throughout the year, predominates late winter/early spring especially in ewes pre-lamb.	Weight loss, green/black scour, deaths in lambs. Seen late summer/autumn and sometimes the winter. <i>T. colubriformis</i> species often most dominant worm in lambs in the autumn.	Sudden violent scouring, sometimes deaths in young lambs; can be an issue before weaning and also in the Autumn. Eggs are large and can be visually distinguished from other species.
Normally seen northern half of NZ, but this is changing. Barber's pole has been identified in fine wool flocks. Can cause very high FECs.	Larvae can survive repeated freezing and thawing.	Larvae can survive repeated freezing and thawing.	Require winter chilling to hatch; as conditions warm in spring, they can hatch en-mass.

Understanding the worm lifecycle is an important part of building an effective farm worm management plan. For a refresher see the Wormwise website or the 2026 Wormwise Handbook.

The lifecycle of internal parasites



Important things to understand about worms in fine wool lambs

1. There is a cost to eating lots of worm larvae. There is a cost to growth while lambs are developing their own immunity to ingested L3 larvae. This immune response becomes more efficient over time, using less energy and protein as lambs grow and mature. As lambs get bigger, they have a decreasing relative requirement for protein for their own growth, so more protein can be diverted to other functions, such as immunity. The slower that lambs grow, the longer it takes them to get to this point, and the longer they will be negatively affected by worms.

Until lambs' immune systems are fully developed (up to 18 months of age for some individuals), they can continue to shed high numbers of worm eggs. This can set up a cycle where slow-growing lambs are creating a greater larval challenge for themselves over a longer period, than if they were growing faster.

A big opportunity in many fine wool sheep systems is to provide growing lambs with high quality forage that has low levels of worm larvae on it, and/or to use other species and stock classes to 'clean up' lamb grazing areas.

2. Managing worms is about managing levels of larvae on pasture. Historically, drenching lambs at 28-day intervals was the mainstay of limiting larval contamination of pasture that lambs were grazing. For about 21 days after drenching, lambs did not shed any eggs onto pasture to provide the next generation of larvae. However, we can no longer simply rely on frequent drenching to keep a lid on larval

contamination of pasture. Many drenches are unable to remove all worms from lambs - the worms go on producing eggs in between drenches if the drench was ineffective, furthering the build-up of resistant larvae on pasture.

Farmers of fine wool lambs need to look for management strategies that limit larval contamination on lamb grazing areas, and to 'clean up' after lambs have grazed.

3. Drench resistance is common and costly. For 3 weeks after a lamb is drenched, the only worm eggs coming out of that animal will be eggs laid by adult worms which have survived the drench. This is because it takes approximately 3 weeks from when infective L3 larvae are eaten, for those larvae to develop into adult worms that start breeding, and for eggs to appear in the lambs' faeces again.

Slow-growing fine wool lambs are likely to receive more drenches in their first year of life than fast-growing lambs. If these drenches are not highly effective, the result can be a resistant worm population building up, fast-tracking the development of drench resistance on the farm.

Checking if animals actually need treating before coming into the yards, and using drenches shown to be effective on your farm helps to mitigate this risk.

Whilst every fine wool farm has unique parts to their system, every worm management plan can incorporate key principles:

F - Feeding
A - Avoid the worms
R - Refugia
M - Monitoring
ED - Effective Drenching

Think Wormwise, think
F.A.R.M.ED

Feeding

- Providing good nutrition is the most significant part of worm management in fine wool lambs. The faster they grow, the less time they are susceptible to worms and the less drench they will need. A 45kg hogget at 6-7 months of age will have a better worm immunity than the same age hogget at 35kg.
- Offer quality feed and plenty of it. Wean lambs onto high pasture covers, not grazing below 1500kg DM/ha or approximate pasture sward height of 3.5-4cm. This gives the lambs a choice, so they select the best parts of the forage. They are also not eating as many worm larvae by not grazing down into the bottom of the sward.
- Consider your weaning date. Fine wool lambs are sometimes weaned at 120 days or more. Ewe milk production is often minimal by this time, resulting in ewes competing with their lambs for the best feed and providing little more than companionship.
- Providing a high legume-content diet ensures plenty of dietary protein to support the growth of the lambs at the same time as development of their immune system.

Examples include clover/herb mixes such as red and white clover with plantain and/or chicory, and lucerne. On dry hill country, optimising sub-clover development is a great strategy. For lambs on permanent pastures, a good rule is 'shift them once clover content drops to 30%'. Worm larvae survive better in a grass environment than forages such as legumes, so if there is more grass than legume, re-infection can happen more quickly.

- In a difficult spring where ewes with lambs at foot are under feed pressure, and there are better feed options available for lambs, then consider weaning early. Fine wool lambs will grow just as well as strong wool breeds if weaned early onto a legume or other high quality forage. Some fine wool properties successfully wean as young as 60 days.

Well-grown lambs will contribute less to the worm population on pasture, resulting in less contamination for all sheep.



Avoid the worms

The following are examples of strategies currently being utilised on NZ fine wool properties:

Creating low worm challenge for lambs with grazing management

- Weaning lambs onto areas of the farm likely to have a lower sheep worm burden, such as blocks where cows and calves may have been grazing for the last few months.
- Avoiding putting the lambs back onto their tailing blocks after weaning. These will be heavily contaminated. Use cattle or less-susceptible classes of sheep to get the quality back and mop-up larval contamination in those parts of the farm.

Utilising forage crops and pasture renovation

- These areas will normally have low larval contamination, so drenching input can be less.
- On-farm trials have shown that lambs on newly-established crops were able to be managed at longer drenching intervals; up to 10 weeks in the case of Chicory.
- Be careful with the grass around new crops, these edges can be heavily contaminated with worm larvae.
- Also be wary of multi-year crops. These can become contaminated over time, depending on their grazing management, and the amount of grass/weeds present.
- Monitoring is the key to drench decision-making when lambs are grazing crops.
- If using on-off grazing to transition from grass to a crop, lambs may pick up a worm burden from the grass. Once the lambs are fully transitioned, then drench them, and continue to monitor.

Grazing hay/silage aftermath

- 'Aftermath' is the grass left behind to re-grow after harvesting a paddock for silage or hay.
- This can be low in worms, but not always, so carefully monitor lambs grazing these areas.



Risk management for Vineyard/Orchard grazing

In some parts of the country farmers have the option to graze vineyards and/or orchards once the fruit has been harvested. Generally, this is through the autumn/winter period. For the rest of the year there is often no other stock in these areas.

Consider the area grazed as an extension of your farm and manage refugia and risk of drench resistance accordingly. Monitoring work in Marlborough highlights that lamb-grazed vineyards are a low refugia system, with a high risk of drench resistance.

Vineyards and orchards could be high or low risk for pre-existing worm challenge and drench resistance, depending on their previous grazing and drench use history. For example:

- A block that has never had sheep on it before is very low risk for worm challenge, but at very high risk of developing a drench-resistant worm population, if the quarantine and further drenching of introduced lambs is not managed very carefully.
- A block that has grazed lambs for many seasons, with haphazard quarantine protocols and drench use, can be of high risk for worm challenge. This depends on the length of the lamb grazing season and management of the grass in between lamb grazings.
- The same block above may also be very high risk for harbouring drench resistant worms. This happens when lambs carrying resistant worms have been imported onto 'worm-free' grass, followed by regular drenching with ineffective products. This favours the build-up of resistant worms.

One approach when introducing lambs onto a vineyard/orchard grazing block is a 'gold standard' quarantine protocol, or at least a treatment with a novel drench containing either derquantel or monepantel. Both of these quarantine options include a stand-down period for resistant eggs to pass out, as detailed on the Wormwise website: <https://beeflambnz.com/knowledge-hub/blnz-wormwise-programme/drenching/quarantine-drenching>

An alternative approach could be to consider not drenching lambs immediately before introducing them to these blocks. Instead, they could be allowed to lightly contaminate the area with a mix of worms for a short period, before being treated with a highly effective drench. Another option is to include some undrenched, light ewes in the lamb mob to provide some refugia.

Monitoring of the initial drench with a faecal egg count 7-14 days after treatment is a great back-stop to ensure that the drench you have used has done its job and that there are not lots of resistant worm eggs continuing to be passed by the lambs.

Often ewe lamb replacements are grazed in vineyards and orchards in the autumn:

- If these blocks have irrigation, then there can be enough moisture to help parasite larvae from the previous season, survive over the summer, even if there have been no stock grazing that area for many months.
- Ewe lamb replacements coming back to the home farm, could be cycling resistant parasites. It is important to use a robust quarantine protocol when bringing these animals back.

Decreasing the number of 'lamb days' on farm - examples

- Use of terminal sire rams over the ewes not required for breeding replacements and selling these lambs quickly after weaning. This will help to reduce the overall worm contamination on farm as there won't be as many lambs contributing to the worm population.
- Make an early selection of ewe lamb replacements to get this mob as small as possible as soon as possible. Carrying too many young stock on fine wool properties through the winter increases the larval contamination on farm.

Use of worm resistant genetics

- Animals can be bred to have a higher resistance to the establishment of worms.
- Worm resistance is moderately heritable in sheep at 20-25%.
- Selecting for worm resistance alongside other desirable traits does not have a negative effect on production, with studies in fine wool sheep showing resistant line progeny on average 1.6kg heavier at weaning and producing on average 0.3µm finer wool at hogget shearing. The resistant line progeny also needed 15% less drenching.
- Genetic changes are permanent and cumulative. Over time, the result will be a lower need for drench inputs.

Simplified sheep policies

- Farms that include a number of sheep enterprises within the one property may find it more difficult to provide fine wool lambs with low contamination feed and better nutrition. For example, some farms may include more than one type of fine wool sheep enterprise, along with a meat sheep enterprise.
- All the lambs from these enterprises require well-fed, well-conditioned mothers, and high quality, low worm contamination feed after weaning.
- It can be difficult to 'keep your eye on the ball' for many different priority sheep classes, and it's easy to let the lambs not destined to leave the farm, slip down the priority order and suffer from the effects of slow growth and worm challenge.
- For example, with a limited area of alternative forages, the temptation can be to utilise these for meat lambs to grow faster for the market, rather than providing improved nutrition and low worm challenge for ewe lamb replacements. Replacement fine wool ewe lambs should have priority over all others.
- Both the overall farm policy and operational farm practices may require review, to successfully manage worm challenge and drench resistance in fine wool lambs.

Refugia

Using refugia means preventing drench-surviving worms from dominating the population on the farm. For refugia to work, there must be un-drenched animals contributing susceptible worms back onto pasture.

Options for creating refugia include:

- Having well fed un-drenched adult sheep following behind lambs in a grazing rotation. The adults provide susceptible larvae to dilute out any drench surviving larvae and help to vacuum up some of the contamination as well.
- Extending drench intervals beyond 28 days. This gives more time between drenches for susceptible worms to establish and breed with each other and drench survivors. Monitoring is important to do this safely and it is generally more successful when lambs are grazing lower-contamination areas. In isolated situations *Haemonchus* has been a problem in fine wool flocks, so be careful with extending drench intervals. The geographical distribution of *Haemonchus* is changing due to a shift in favourable environmental conditions.
- Lambs grazing crops or new grass will be under a lower worm challenge so it will be easier to extend drench intervals. In these situations, refugia often becomes more important because there will be lower numbers of larvae on pasture, increasing the risk that drench surviving worms predominate.
- To manage refugia in such situations, options include:
 - Grazing the area with un-drenched ewes to allow some susceptible worms to 'dilute out' any resistant worms. This can be done before or after lambs have grazed the area.
 - Graze with lambs that are 'due' for a drench and thus should be shedding at least some eggs from susceptible worms. Note that the more drenches these animals have had prior, the higher the percentage of resistant worms they are likely to be carrying. This approach has some risk.
 - Run light un-drenched ewes with the lambs. This provides improved nutrition for the ewes as well as refugia.



Monitoring

Important monitoring tools include faecal egg counts (FECs), worm species identification (ID), lamb growth rates and pasture/feeding information.

FECs can be utilised to answer 3 questions:

- **Do animals need drenching?**
- **Did the drench work?**
- **How contaminated is the area that they have been grazing?**

More details on monitoring:

- 'Do I need to drench?' Faecal egg counts are a reasonable guide to the numbers of most worm species inside lambs. For further details on interpreting faecal egg counts, visit 'Interpreting Faecal Egg Counts' on the Beef + Lamb NZ Wormwise website: <https://beeflambnz.com/knowledge-hub/blnz-wormwise-programme/worm-diagnostics/interpreting-faecal-egg-counts>
- 'Did my drench work?' Drench check or 'FEC 10'. This is a faecal egg count taken 10 days (range: 7-14 days) after drenching. If worm eggs are present after drenching, it means that your drench is leaving worms behind. Worm species ID should be undertaken if eggs are found after drenching; work with your animal health advisor. More detail can be added by doing FECs and worm species ID on the day that you drench, as well as afterwards. By doing this, you can compare what worms were present before drenching, with what is being left behind. Continue to do drench checks regularly, as drench performance can change through the season.
- 'Do my lambs need another drench now?' 'FEC28' is a faecal egg count performed at around 28 days after the last drench. FECs 25-28 days after the last treatment can help you decide when to treat next, or when to repeat your sampling. If lambs have been grazing low contamination feed, and FECs are low, drenching can often be deferred. Recheck FECs in 1-2 weeks, as egg counts can rise quickly. Fresh faecal samples can usually be collected from the paddock, so lambs don't need to be yarded.
- Finding high FECs 28 days after drenching indicates animals have been ingesting lots of infective L3 larvae - the feed the lambs have been grazing is probably too contaminated for good growth performance.
- Worm speciation: Often it is helpful to know what worm types are present. Worm species can be identified at a laboratory via worm larval cultures or Fastworm ID - GIN PCR. GIN PCR tests for worm DNA in the faecal sample. If your drench check (FEC10) comes back with positive egg counts, then speciation can identify which worms are surviving the drench.



- If Barber's Pole worm could be a risk, then speciation is a great way to identify when this could be a problem.
- If resistant *Trichostrongylus* are an issue on your farm, regular worm species ID checks are a good way of tracking when these are rising.
- Also note that each worm species has a different rate of egg production which will affect what the FEC is telling you about the worm burden.
- The value of FECs come through regular monitoring and basing treatments on the trend, as well as lamb performance and grazing information, rather than relying on a set cut-off value each time.
- Monitoring lambs' growth rates, liveweight and body condition provides data on what might be happening out on pasture. Lambs may 'look' like they are doing ok but appearances can be deceiving. Weigh and condition score a random selection of lambs (at least 50) each time they come through the yards to gauge how the mob is doing.
- Measuring quantity of pasture available, in whatever way is easiest in your farm system, ensures lambs are not grazing too low and are getting a choice about what they want to eat. Examples include the B+LNZ sward stick, a rising plate meter calibrated to your pasture type, and eye assessment (once you gain experience with an objective measurement system). Satellite imaging of paddock grass covers is a recent development available through a number of farming technology providers in New Zealand.
- Feed quality is incredibly important in helping young lambs grow well and be resilient to worm challenge. Including feed quality assessment in your decision making is a must.
- Grazing history is important to record so you can avoid lambs going around the same part of the farm repeatedly and potentially creating hot spots for high worm burden. Several farm management software applications have the ability to record and report grazing history.



Effective Drench

You MUST establish which drenches are effective on your property

- Visual observation of stock after drenching is not sufficient to assess drench performance.
- You may not see with your eyes that there is a problem until your drenches are less than 50% effective.
- Options for checking drench performance include:
 - Post-drench faecal egg count check of routine treatment (FEC10)
 - Pre and post egg count monitoring of routine drench treatments
 - Faecal Egg Count Reduction test
 - All of these options should include worm species identification
 - For more information, see the 'Drench resistance' page on the B+LNZ Wormwise website: <https://beeflambnz.com/knowledge-hub/blnz-wormwise-programme/drenching/drench-resistance-who-cares>
 - Seek out someone in your district who has plenty of experience in helping farms with drench resistance, to assist you with planning and interpreting your drench testing.

Don't start your lamb drenching season using ineffective drenches

- At weaning, choose a drench that you know is effective on your farm.
- If you use a drench that is leaving a lot of worms behind, for the next 3 weeks, the only worm eggs going back onto pastures that the lambs are grazing, are resistant ones. Plus, lamb performance can be compromised if too many worms are left behind.

Drenching after weaning

- There is no recipe for timing, it depends on the level of worm challenge on the feed lambs are grazing, but in general:
 - If lambs are grazing contaminated pasture, they will probably require drenching at or close to 28-day intervals. If you choose this strategy, take faecal egg count samples on the day that you drench, to see how parasitised the lambs actually were. You may learn something for next time! If FECs are already very high at 28 days, it's an indication that the area is too contaminated for lambs and ideally lambs should be moved to another less contaminated area.
 - Lambs on presumed 'low contamination' areas should not require 28-day drenching. Monitor FECs from 25-28 days onwards to see when the next drench is needed.
- There is no recipe for drench choice. Combinations of multiple drugs have more chance of success against resistant worms. Where there is resistance to one drench family, the second and third part of the combination drench can act as a back-up. However, double and triple combination resistance is now very common; do not assume that because you have chosen a combination drench, that it will be effective!
- Do a drench check 7-14 days after every drench (or as often as possible). The dominant worm species in lambs can change throughout the season, and this can have a bearing on drench performance.
- In general, long-acting drench products hasten the development of drench resistance. If you have to use long-acting products in fine-wool lambs to maintain their health and growth, it is a sign that the feed they are on is too contaminated. Fix the underlying problem rather than continuing to rely on long-acting drench products.
- Seek support from an advisor and/or other farmers who have been successfully dealing with drench resistance. You will not be successful in dealing with this issue by only focussing on the 'drench' piece of the puzzle.
 - For more specific information on drench use in sheep systems, see the 2026 Wormwise Handbook.



Summary

Think Wormwise, think **F.A.R.M.ED**

Feeding – Great nutrition to lambs is key.

Avoiding the worms – Lambs do better on ‘low contamination’ grazing.

Refugia – Don’t allow lamb grazing areas to become dominated by worms that have survived your drenches.

Monitoring – As much as possible, use monitoring to make drenching decisions.

Effective Drench – Test to understand drench performance on your own property, avoid using ineffective drenches regularly.

With thanks

To the fine wool farmers who provided their experiences and information for this resource, and to the veterinarians with fine wool sheep clients who provided perspective.

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Beef + Lamb New Zealand Wormwise Handbook 2026

Beef + Lamb New Zealand Wormwise website <https://beeflambnz.com/wormwise>

Beef + Lamb New Zealand Genetics Data submission & SIL reports <https://www.sil.co.nz/files/1496280247469.pdf>

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