

Beyond drench resistance – what do intensive cattle systems need to make the move?

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‘I nearly wish *Cooperia* was more pathogenic, so people had an incentive to change. Or should we even care, and be grateful that it isn’t?’ *Garth Riddle, Bay of Islands Veterinary Services & Wormwise trainer.*

Background

You’d have to be living under a rock in the sheep industry to not have not heard of or experienced failures of parasite control as a result of drench resistance, in lambs in recent years.

The issue in cattle systems appears to not be as bad, and awareness, at least in the dairy industry, appears to be low. Limited data available from intensive cattle systems (Dodunski 2021-2024) would indicate that combination drench resistance is common. Anecdotally, there are a handful of reports of clinical drench failure and sick calves, but nothing like the scale of which we’ve seen in lambs.

Is the cattle industry simply lagging behind sheep in this respect, or are there differences between sheep and cattle, and the way that they are managed, that means drench resistance isn’t as likely to cause the widespread disruption that it has in the sheep industry?

I’m not sure if we have the answer to these questions. But we do have mounting examples of young cattle systems where great nutrition, careful grazing management and reduced anthelmintic use, are being used together to substantially reduce both worm challenge, and the likelihood of clinical parasitism from drench failure.

It is my great hope that the industry can learn from these examples quickly enough, to prevent the widespread clinical parasitism from drench failure that has been a feature of the sheep industry in recent years.

In this paper, I’ll outline some real-life examples of farm systems I’ve observed in recent years, that illustrate key principles for managing parasites in young cattle with a reduced requirement for drench.

Key management principles

- Start with good calves.
- Calves are not used for pasture control.
- Calves are fed ad-lib; metabolizable energy and protein are never limiting.
- Calves do not repeatedly graze the same land area with drench as the only means of managing worms.
- Tail end calves are not left in big mobs.
- Drench use and frequency of treatments is based on monitoring, rather than the calendar.

Calf management system types

This paper will cover four broad management systems for calves, which all appear to be having success:

- Organic, on permanent pasture.
- ‘Clean’ summer feed.
- Mixed species and mixed forage integration.
- All-grass with high supplement and high grazing residuals.

Organic – it can be done!

Pamu Organic dairy support, Broadlands, Taupo. Heifers on this property achieve or exceed MINDA weights targets and 2Y heifer liveweight is best in group.

Farm details

- 335ha running 350 R1 and 350 R2 dairy heifers, also 700 winter cows.
- All permanent pasture.

Management details

- Calves stay on milk for 12 weeks regardless of weight.
- Weaned off milk and meal two weeks prior to leaving rearing facility.
- Weighed on arrival and again two weeks later, calves that have lost weight are separated.
- Mob size around 80 head – easy to spot individuals who are falling behind.
- Monthly weighing and re-drafting – bottom end calves are separated promptly.
- Bottom end calves are preferentially fed and can be given organic kibbled maize.
- Home-made silage can be fed in feed deficits.
- Grazing residuals never under 1800kgDM/ha.
- 2Y heifers, silage making and topping used to control quality.
- Calves on daily shifts.
- Calves don’t follow calves in rotation.

Parasite management

- ‘No drench’
- Individuals may be given one dose of Moxidectin pour-on in their life.
- Treatment only after consultation with veterinarian.
- Many individuals showing signs of clinical gastrointestinal parasitism or lungworm are able to be turned around by separating and preferentially feeding them.
- Most youngstock get through their growing period having received no drench at all.

I would strongly emphasise that the success of this particular system is highly dependent on the observation skills and stockmanship of the manager.

‘Clean’ summer feed – chicory system

Owl Farm, St Peters’ School, Cambridge. December to May calves are grown out on a 5ha lease block next to the dairy farm, plus some individual chicory paddocks that are part of dairy platform re-grassing. Chicory was chosen for its ability to cope with summer dry, whilst providing calves with a high ME, highly digestible and high protein feed. Summer pasture in the area is frequently deficient in protein for growing calves.

Management details

- Calves on 2-3 day shifts for labour reasons.
- Utilising temporary fencing to graze chicory within 5-25cm range.
- 4-6 weekly weighing – calves usually exceed MINDA weights targets.
- Silage and PKE fed in variable amounts depending on the season; range from 150-550kgDM/calf.
- Costs of the system have varied from \$5.50/head/week to \$11.50/head/week (Owlfarm 2025).
- Benefits of having calves at home and under own observation are important.

Parasite management

- Oral combination drench treatment is given when calves leave the dairy platform and then as needed.
- Oral BZ/Levamisole combination is still effective.
- Drenching of calf mobs is based on monitoring:
 - FEC
 - Visual
 - Feed (including % of diet that is grazed green leaf and amount of grass in this; to what extent pastures have been grazed by milkers is also considered).
 - Weight gain data.
- Monthly drenching is not required, and, in many years, calves only have two or three drenches.
- This season, with a very dry summer, calves have only had one drench so far.

Mixed species and mixed forage integration

Rangitaiki Station, Rangitaiki, Central Plateau. 8308ha effective, including a 2552ha intensive bull unit. Clinical disease from triple combination resistant parasites became an issue in R1 bulls in the bull unit; poor calf growth performance on summer dry and autumn saved pasture contributed to this issue. R1 bull management was changed completely; most bulls now don't go into the cell grazing systems until 15 months of age.

Management details

- Calves are mixed with sheep and deer on lucerne over summer.
- They then move into mixed grazing pasture systems and onto winter crops.
- Sheep do the last rounds of grazing on the lucerne in autumn to try to decrease cattle worm amplification at this time.
- Calves now go into winter 40-50kg heavier than previously and thus are much easier to manage.

Parasite management (Pāmu 2024)

- Drench on monitoring information:
 - Liveweight gain data.
 - BCS and visual appraisal.
 - Feed appraisal and grazing history.
 - Weekly/fortnightly FECPAK composite faecal egg counts.
- Use of TST/liveweight gain based refugia system as calves get bigger.
- Using drenches demonstrated to be effective on the farm – in the early days of the resistance battle, this was a 4-way Zolvix®/BZ-Levamisole combination (administered separately).
- Disciplined transport and quarantine management; utilising status information from vendor farms to drive product choice when a quarantine treatment is required.

All grass with high grazing residuals and extended time on meal

Te Ranga Farms, Te Puke, Bay of Plenty. Blair Linton, and parents Robert and Linda, rear 500 Friesian bull calves and take them through to sale as a mix of slaughter and store (depending on price), at 15-20 months of age. This system has been running for 35+ years.

They recently discovered they had a triple-resistant *Cooperia* (0% efficacy of an oral triple drench), only because they were following best-practice guidelines from their veterinarian and did some testing. There was no evidence that parasites were affecting production, with most mobs growing at or above 1kgLW/day in the autumn that this testing was undertaken.

They have changed their approach to drenching the calves; from routine monthly treatments, to treatment based on monitoring.

Management details

- Purchase four-day old Friesian bull calves from seven local dairy farms.
- Pick up from each farm twice a week.
- Calves weigh between 40-60kg, averaging 44.3kg.
- Calves go into sheds for seven weeks in pens of 20.
- The calves are fed CMR once a day, ad lib meal and hay.
- Aim to gain 20kg before weaning off milk at six weeks.
- Calves go out on farm in seven mobs of 74 at a minimum of 85kg.
- Fed meal daily and transitioned off over two months.
- 155kg meal is fed per calf.
- Grazed in front of bull rotations – don't graze below 1800kgDM/ha.
- Weigh monthly.
- In April the seven calf mobs get redrafted into 11 mobs based on weight.
- Stay in these mobs until they are sold.
- Once they are drafted, they go into their winter rounds.
- Each paddock gets subdivided in two or three smaller paddocks to carry forward autumn pasture surplus into winter and shifted every 2-3 days.
- No winter supplement fed.
- Sell bulls 15-19 months age (November –March).
- Sell on to finisher or works depending on schedule; last two years all sold store.
- Just under half the bulls are sold pre-Christmas as a contingency for a dry summer.
- Average sale weight for last two years has been 470kg.
- Average sale date 16 Jan.

Parasite management

- Previously drenched all calves monthly with oral combination.
- 2024-2025 calves have been monitored with weekly faecal egg counting using FECPAK machine.
- Best mob did 90d between drenches while still growing at an average of 1kgLW/day.
- Have been able to stretch drench intervals to most mobs.
- Started leaving best individuals untreated from 180kg.
- Initially left 5/70 untreated; most recently left 18/70. Must be growing at 0.9kgLW/day to leave.

References

- Dodunski G.** *A convenience sample of cattle faecal egg count reduction tests in New Zealand 2021-2024. Report for Wormwise 2021-2024*
- Owlfarm.** *Farm focus day handout.* Owlfarm, 2022
- Pāmu.** *Managing the challenge of drench-resistant parasites at Pāmu.* Pāmu, 2024