Feeding Fodder Beet in NZ Beef and Sheep systems

Fodder beet (FB) has been used to feed stock in Europe since the middle ages, and was introduced to New Zealand in the late 19th century. The traditional use of FB in Europe was governed by the idea that the crop was inherently toxic. The crop was harvested, the leaf removed and stored for over winter use and fed at quantities under 3kg DM/day. In the mid-2000’s the crop was reintroduced in New Zealand as a potential ‘grazed’ feed. Feeding the standing crop as a primary diet behind a hot wire is a unique Kiwi method; proving to be a sensible and practical approach.

The use of FB has gradually increased in use in the dairy industry for winter and shoulder feeding. Studies at Lincoln University have demonstrated the following:

- The lack of any anti-nutritional compounds of significance
- Extremely high yields of 25-30T DM/ha
- Low feed cost of 6-10c/kgDM
- ME value of 12MJ/kg DM

Cattle need to be carefully transitioned onto ad lib FB feeding to maximise FB intakes and minimise costs. High intakes of around 12kg DM FB with 2-3kg supplement for a large dairy cow demonstrate the potential use of FB for finishing cattle.

Further research has since been performed in an attempt to finish steers before 18 months of age through maximising intakes by restricting supplements and feeding ad lib FB for up to 180 days.

Early Weaned Calves and Fodder Beet
The advantages of early weaned calves are well understood internationally. The key profit drivers are earlier finishing, reduced drain on maternal LW, allowing reduced winter feed costs, increased BCS and increased stocking rate. Unfortunately, the reality is often that there is limited good quality feed for weaned calves in the autumn and alternative supplementation is unaffordable in terms of LW return.

In this system, fodder beet is used in calves from 200-250kg LW (around 120 days) as the primary feed with 1kg of supplement. Intakes are around 2.5% liveweight, with this rate maintained from early autumn until mid-spring when pasture growth begins to match consumption. LWGs on this FB system over the winter are typically 1kg/day, the increased LWG on spring grass (typically around 1.5kg/day), allows calves to be finished at 14-18 months.

Practical feeding and transition advice
- Prior to entry into the system, calves need 21 days on unrestricted good quality pasture to develop the rumen for a higher energy intake.
Docking lambs: Lambs born to ewes given long-acting drenches pre-lambing (e.g. Eweguard, Exodus, Dectomax, boluses etc) will not usually need drenching at docking. However, an “exit” drench for the ewes with one of the new drenches (e.g. Startect or Zolvix) can help prevent development of drench resistance by eliminating worms not killed by the long-acting drench. Due to the variation in duration of action, a Faecal Egg Count now will let you know how well your long-acting product is working. A pooled sample of 10-12 ewes will give us a good idea of the worm burden.

If the ewes have not been given a long-acting drench pre-lambing, they should be given a broad spectrum, multi-action drench at docking (e.g. Arrest, Switch or Matrix). However, in general, the lambs are not likely to benefit from a drench this early in life.

The benefit of drenching ewes at docking lies mainly in reducing the output of worm eggs to infect the lambs, in addition to the direct effect on the ewes’ own health and production.

Flystrike Prevention: Use of a fly prevention product, such as Vetrazin, Clik or Clikzin, will prevent flystrike related to docking and delay the need for full treatment with Clik until later. In this area, the flies have become resistant to products, such as Zapp and Exit, although these remain as good treatments for lice. Clik does not kill lice, but is at present the best long-acting flystrike preventative.

If you are sending frequent drafts of lambs away through the spring, be careful to note the meat withholding period and the dates of application to avoid problems later.

Vaccinations: Lambs born to ewes not vaccinated with 5 in 1 before lambing should be given Lamb Vaccine at docking and this should be boosted 4-6 weeks later (i.e. in November or December). If all ewes were vaccinated, the lambs will have maternal immunity from the colostrum for about 12 weeks and the first shot needed by the lambs will be in November/December, with a booster given 4-6 weeks later.

Scabby Mouth: Although Scabine is not available this year, we have ‘Scabiguard’ to replace it. This is basically the same vaccine, but comes with a different gun applicator. The gun is a little more complicated to set up and use than the Scabine gun so it is important to read the instructions. Also, the vials are 250 doses instead of 150. It is still important to check for effectiveness (“takes”) 7 to 10 days later; a good area of scabby crusting around the vaccination site means the vaccine has ‘taken’. This is a live (and zoonotic) vaccine, so you can catch it yourself if you are not careful. Do not use disinfectant to clean the skin or equipment, as this will kill the virus and render the vaccine ineffective.
CATTLE

Breeding Cows

**Magnesium:** For some, calving will be well under way and for others it will be beginning soon. Magnesium supplementation is very important to prevent metabolic disease at this time of year. Rumevite capsules are a practical way of doing this. If you are in a position to feed Magnesium Oxide (Causmag) either by dusting or with supplements, such as silage or hay it will cost less. Magnesium needs to be supplemented both pre-calving and while lactating through until the end of October, by which time Magnesium requirements can usually be fully met through grazing.

**Other Minerals:** Copper levels can be very low in the winter and, in certain cases, do not rise as much as expected after supplementation. Ill-thrift at this time can be related to low copper levels. Remember that low copper is associated with subfertility; where cows cycle and mate but do not get in calf. If in doubt, get some animals sampled and remember too much copper is poisonous and there is no way to remove excess copper effectively from the animal once administered. If you want to drench or give vaccinations at the same time as injecting copper, great care is required. Extreme bad reactions and even deaths have been associated with giving other products (especially injections) at the same time as copper injections. Ideally, give all the other treatments on one day then turn the cows out close to the yards for 24-48 hours, then give the copper injection separately and as the final intervention. Always use minimum stress when giving copper injections; avoid running cattle a long way to and from yards and handle as quietly as possible. If using a copper bolus these precautions are not necessary and the boluses can be administered safely with other products.

Low Selenium can cause retained foetal membranes, which can lead to reduced or delayed fertility in cows. Most of a calf’s initial selenium is received via the colostrum, so if a cow is deficient at calving then her calf could well be deficient too. This can lead to white muscle disease, ill-thrift and heart problems. A similar pattern can be seen in lambs born to deficient ewes, but remember that selenium is also toxic if too much supplementation is given.

Calves:

**Vaccination:** Give calves a 5 in 1 vaccine at marking or earlier. On farms where tetanus is a particular problem, calves can be given about 6ml of Lamb Vaccine (contains Tetanus antitoxin) at the time of marking. This is not necessary if the calf has had a 5 in 1 vaccination 10 days before marking, as active immunity from the vaccine will protect it.

**Eartags:** A reminder about NAIT tags – NAIT tags are compulsory and calves should be tagged as early in life as is practical. They go in the right ear. Tags can be ordered through the clinic. Order well before they are needed because they usually take over a week to arrive.

Graziers

**Mating:** Mating starts soon for dairy graziers: a few in late September and more in October, many on the 1st and most by 15th.

Heifers should be weighed now to see if they are reaching target weights for mating for their breed. We have tables of target weights for different breeds and crosses. As a rule of thumb, heifers should be at 2/3 of their full adult weight when they go to the bull for the first time (e.g. if they are expected to be 600kg as adults, they should be 400kg at mating). Remember that we have scales, mobile handling equipment and technicians available if you do not have them yourself.

Pre-mating drenches should be given a few weeks before the planned start of mating to ensure that the heifers are in the best health before the bulls go out. Faecal egg counts and larval cultures are very useful at this point to see what worms are present and the best products to use. This can be a very cost-effective test; a pooled sample from 10-12 animals from the mob will give us a reliable estimate of the worm challenge in the group.

**Minerals:** If the heifers require mineral supplementation, such as copper injections, do not give it too close to the Planned Start of Mating (PSM) as it may cause a temporary stop in cycling. Ideally give at least 3 weeks ahead so that the heifers have time to resume cycling before the PSM. Copper capsules do not cause the same interruption to cycling as seen with copper injections and so dosing can be more versatile.

**Bulls:** Bulls for mating should have been checked for libido, fertility, abnormalities and disease. Most people now want their bulls checked for infection with bovine viral diarrhoea virus (BVD) and enzootic bovine leukemia virus (EBL). Test-negative bulls should be vaccinated for BVD to ensure they do not catch it from the heifers resulting in compromised fertility. Most people who lease out bulls tend to do this before they lease them, but it always pays to check. Do not be afraid to ask if the bulls are tested and vaccinated. Any bull testing positive for BVD Antigen (Virus) should be culled.

Bull ratios should be a minimum of one sound bull per 30 non-pregnant heifers. If synchronised mating is used, a higher number of bulls are needed; usually 1 bull to 20 heifers. This is because all heifers not pregnant to first mating will still be partially synchronised when they cycle again, so an increased bull ratio is advised.
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Beef & Sheep systems Continued...

✓ Two vaccinations of 5 in 1 must be completed prior to FB feeding.
✓ Supplement used for feeding with FB needs to be of higher protein than the FB. Nearly all grass silages will be adequate in supplying the protein and fibre requirements. The cost of supplement in this system is the main feed cost. Feeding excess supplement will dramatically increase the average per kgDM feed cost, reduce the ME content of the diet and reduce the FB intake.

✓ Transition feeding regimes need to be very carefully managed, with starting rations of 0.5kgDM FB with 4.5kg DM pasture/supplement fed prior to access to FB every day. Every second day the FB is increased by 0.5kg DM and the supplement reduced, until at day 14 the ration is 4kg DM FB and 1kg DM supplement. After day 21, the break line is moved to appetite, promoting maximum ad lib intake. The supplement is not increased as the cattle grow onto larger FB intakes.

✓ Estimation of DM of FB is vital to accurately control the transition feeding phase and prevent rumen acidosis. Rumen acidosis is the main feeding risk to R1 cattle in this system. It generally only occurs if the FB allocation is too large or supplement access is restricted.

✓ Supplement feeding ideally needs to be given before access to FB on a daily basis. Adequate time and access should be given to the supplement so that calves that ‘prefer’ the FB still eat their allocation.

Finishing Older Cattle

Light R2 cattle which have been poorly fed over the summer will respond extremely well to an energy dense diet and can often be finished in short periods of time on FB.

Animals of around 400-450kg LW start with 1kgDM FB out of a total ration of 8-10kg DM. Older cattle take to eating FB quicker than younger animals and are at greater risk of Rumen Acidosis. The FB is increased by 1 kg DM every other day for 14 days, while decreasing the supplement to 4kg by day 14. From day 21 FB is fed to appetite with 2.5kg DM and the supplement reduced, until at day 14 the ration is 4kg DM FB and 1kg DM supplement. After day 21, the break line is moved to appetite, promoting maximum ad lib intake. The supplement is not increased as the cattle grow onto larger FB intakes.

The supplement used in R2 systems does not contribute to feed energy or protein, only the fibre content of the diet. Cheap supplements, such as hay or straw or old pasture can be used.

Harvested bulbs can also be used. The leaves are removed, with the bulbs stored uncovered for up to 5 months. Rain and frost do not affect the feed value, but due to the lack of leaf the protein and mineral content are reduced. The supplement used with this system requires a higher protein level and grass silage or pasture are typically diets. Diets of 10kgDM harvested bulb with 2-3kgDM pasture after transition, have demonstrated extremely high LWGs of around 2kg/day.

Fodder Beet in Sheep

Both adult and growing stock can be successfully grazed on FB. Sheep are not prone to rumen acidosis when grazing FB so transition is easier. However grazing FB does not have high enough crude protein for finishing lambs and the higher protein supplements required are not cost-effective. The logistics of twice daily mob shifts also make this system impractical.

Generally FB is used as a ‘holding’ crop with lambs, where gains of 100g/day are achieved at very high stocking rates. Lambs can then be drafted off to finish on pasture as required, effectively raising the stocking density of the farm.

Hoggets and ewes can be overwintered on FB in a similar way to lambs but at reduced stocking levels. Care must be taken to move sheep onto new breaks at the appropriate time so they don’t either restrict their intakes or underutilise the bulbs.

Clostridial disease is the principal animal health issue on FB, due to the high sugar load on the intestines. Lambs should have had two vaccinations and ewes a booster before access to FB.

Fodder beet use in New Zealand sheep and beef production is increasing, stimulated by the unique ‘Kiwi’ method of grazing it profitably. FB offers a crop of high ME and low cost, available in seasons when traditional energy supply through pasture is lacking. Sound nutritional strategies are a vital component of the success of these systems, with particular attention to transitional feeding required.

Professional advice should always be sought when starting a new feeding system in order to maximise the economic returns and ensure good animal health and productivity.

Sheep & Beef Discussion Group

With the aim of keeping the discussion seasonal and relevant our next meeting will be a discussion of Alternative Forage Crops.

When: 10am, 17th September

Where: Kapamahunga Station, 1759 State Hwy 23, Whatawhata

We have invited an agronomist to answer all our questions on summer and winter forage crops. We will be discussing establishing different crops, expected yields and costs, so come prepared with any questions and we hopefully will be able to provide all the answers. We will also have some local farmers present who have some experience of forage crops and their success or otherwise.

A barbeque and refreshments will be available and everyone is welcome. Please contact your local Anexa clinic to register your attendance.

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