BEFORE A COMMISSIONER APPOINTED
BY THE SOUTHLAND REGIONAL COUNCIL

In the matter of an Application for resource consent by

PAHIA DAIRIES LIMITED

BRIEF OF EVIDENCE OF GEORGETTE WOUDA FOR PAHIA DAIRIES LIMITED

21 SEPTEMBER 2023

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INTRODUCTION

1 My name is Georgette Wouda. I am a registered veterinarian, and clinical head of the team of mixed and large animal vets at VetSouth, based in Winton.

2 My qualifications are Doctor in Veterinary Medicine (DVM) from Utrecht University, The Netherlands (2003).

3 I have 20 years in vet practice, with 17 of those in Southland working predominantly with dairy cows.

4 Although this is not an Environment Court hearing, I have been provided a copy of the Environment Court Practice Note Code of Conduct, which I have read and agree to comply with. The majority of this evidence comes from my personal experience working with dairy cattle, however where I have relied on another document or study, I have referenced that.

5 VetSouth assists Pahia Dairies Limited (PDL) when it has animal health issues which require a veterinarian. We don't undertake many visits there (28 in the last 2 years). Most of these visits are routine or preventive work, including pregnancy testing, some reproductive work, blood tests, applying teat sealant in heifers, and twice a year consults.

6 PDL has asked me to assist by providing expert evidence in support of its application for resource consent to use land for dairy grazing, intensive winter grazing, and associated nutrient discharge.

Scope of evidence

7 I have read following documents when preparing my evidence:

7.1 the submission against the application for resource consent, made by the New Zealand Animal Law Association (**NZALA**). I refer to this as the **NZALA submission.**

7.2 The response that PDL provided (prepared by Nicole Mesman) dated 24 April, which I refer to as the **PDL response;** and

7.3 The response to the PDL response from NZALA. I refer to that as the **NZALA response.**

8 With all of that background in mind, this evidence addresses the following issues:

8.1 Effects on proper and sufficient food;

8.2 Effects on the opportunity to display normal patterns of behaviour;

8.3 Effects from injury or disease.

Proper and sufficient food

9 At the outset, I acknowledge that fodder beet can be a higher risk feed, if not managed correctly. However, I have assisted many farmers who are running excellent farming systems using fodder beet – and of course I have assisted farmers who are not working to a good standard which can impact animal health and wellbeing. Some of these operations use fodder beet, others don't. The key issue is not one of a single feed source, but rather an overall approach to wintering management of dry cows and mitigations of risks by adopting good feed transition practices (as outlined in the factsheet on transitioning in winter by Dairy NZ[1]).

10 The NZALA submission takes issue with fodder beet as a feed source, and references a range of "significant concerns". I have addressed those below:

10.1 Milk composition, reproduction, bone development in young stock and longevity, linked to consumption of fodder beet, are referred to as "areas of uncertainty" by the NZALA. In the Dairy NZ guide referred to above (footnote 1). As identified in the PDL response, this is commonly managed through supplements like DCP (dicalcium phosphate) fed on baleage/silage during beet feeding and putting trace element supplementation through water and/or offering it in loose licks on crop. Mr Anderson has provided evidence that PDL have taken blood tests a few times a year, and manages mineral supplementation based on those results. I have viewed historical blood and liver biopsy results that were taken at crucial times of the year (pre calving, pre mating and pre wintering) and there were no reasons for concern. Copper storage levels (helping with many enzyme functions but also very important for strong bone health) for example were at very good levels going into the winter, as well were

[1] www.dairynz.co.nz/feed/crops/fodderbeet/transitioning-and-health-risks/

serum selenium levels (selenium helps support a good functioning immune system).

10.2 Spontaneous humeral fractures. The NZALA submission refers to a paper[2] that they say outlines that 25% of herds suffer from spontaneous humeral fractures. The paper referenced in the NZALA submission actually outlines that 4% of herds a year are affected by humeral fractions, with an on-farm prevalence of 2 – 25%. The NZALA submission significantly overstates the occurrence. More importantly, the Gibson paper at no point references fodder beet in any of its conclusions. The concerns raised in that paper would apply generally to any diet that needs mineral supplementation as well as avoidance of growth checks during the rearing of youngstock.

10.3 At a practical level, I have experience with humeral fractures. There seems to be no final conclusion as to what the exact cause of these are. Massey University (and the Gibson paper referred to in particular) is continuing to look into the causes of these and has looked into copper storage levels, diets of youngstock, and growth rates, amongst other matters. Apart from a link to a check during the growth from calf to mature heifer, in particular during their 2nd year of life, and a potential link to low liver copper levels there seems to be no ultimate conclusions yet. So we cannot say that only farms who feed fodder beet to their youngstock will per definition get humeral fractures in their first calving heifers. Over the past seasons our vets have attended farms where humeral fractures had occurred and a number of these particular farms had never fed fodder beet to their youngstock. I refer to Mr Anderson's evidence that he has grazed fodder beet for 10 years, and never had issues with humeral fractures. This wouldn't be uncommon in Southland.

11 As outlined above, the concerns raised by the NZALA can be addressed by following best practice winter management principles. However, for completeness I note that I consider the documents referred to by the NZALA have been taken out of context, or possibly misunderstood. The issues identified in the NZALA submission are certainly not identified to the scale or severity within the source documentation.

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[2] "*Broken shoulders in dairy heifers in NZ: investigating the relationship between live weight and bone morphology in bovine forelimb" by M.J. Gibson*

Behaviour and shelter

12 The next issue raised by the NZALA submission is that of lay down areas and shelter, due to pugging.

13 I agree with the importance of a lay down area for cow welfare. I understand that Mr Anderson has outlined in his evidence additional measures (beyond those identified in the PDL response) that are used to minimise pugging and ensure lay down areas are kept as dry as possible in the given conditions. We have to be realistic though that no matter the outdoor wintering system (cows on grass and baleage, or cows on crop) in the event of extreme weather we cannot expect lying surfaces to be dry. So putting extreme weather event management plans (referred to as "Winter grazing plan" by Dairy NZ) in place so all staff know what to do in those circumstances is important. This might mean moving stock on and off crop paddocks to higher/drier ground or with more sheltered areas once the daily crop allowance has been eaten.

14 I reference Neave et all[3] which found that the key issue on animal lying time is the surface water pooling, and/or liquefaction of soil surface. That study found that even in wet conditions (there was rain most days of the 32 day study), cows would lay down, but that the timing was limited where water had pooled on the surface, or the paddock soil conditions had deteriorated substantially. This can be managed by keeping cows out of such areas by providing animals with stand-down areas (on drier, firmer ground like laneways etc), which I understand from the PDL response is already in their winter grazing plans.

Effects from injury or disease

15 As with many things in farming, risks of injury and disease can never be fully eliminated but it can be mitigated through good management.

16 Lameness is a very multifactorial caused issue on farms. Having cows standing in wet conditions for prolonged periods of time could soften their feet and in theory expose them to lameness. However we do not tend to see this following or during wet wintering conditions. Late winter/spring, even after prolonged wet spells, are not the predominant seasons to observe lameness on farm; as lameness seems to be more linked to prolonged time on concrete

[3] *Behaviours of dairy cows managed outdoors in winter: Effects of weather and paddock soil conditions - J Dairy Sc 105*

or following periods of long walks on ill maintained tracks. Having as good a hoof health as possible can be stimulated by stable diets with plenty of fibre (ruminal acidosis prevention), supplementing with oral zinc and on some farms (including PDL) we see zinc or copper sulphate mats/baths put out. Cows can walk over/through these and this will help with killing of potentially harmful bacteria that can cause lameness (footrot) issues of the skin area between the claws and could help with hardening the hoof/skin.

17 Risk of mastitis is managed by PDL by herd testing three times a year and utilising the data to work through a dry cow strategy plan with the farm's key vet. This plan will help with the selection of which cows require antibiotic treatment at time of dry off in late May and which cows can have just an internal teatsealant. Either antibiotic dry cow (with or without an internal teatsealant) will help curing any existing infections in the udder and, due to its long acting characteristics, it will prevent new infections over the dry period. All in calf heifers will receive an internal teatsealant too to prevent calving mastitis. Cows will be dried off in late May and once they have received their respective dry cow treatment they will be immediately walked over to their wintering area where further crop transitioning will take place. Moving cows away promptly after their final milking (and dry cow treatment) will help their drying off process as it removes them from their normal milking routine stimuli.

Conclusions

18 There are no studies to date which establish conclusively about the concerns raised in the NZALA submission. Although there are potential risks, in my view these are predominantly linked to management of stock generally, not just in relation to fodder beet. Some of the best farms/animals we see feed fodder beet, so do some of the worst and everything in between. The critical point is how those animals are managed in relation to the other matters I've discussed in this evidence, such as nutrient balance, wet weather plans and proactive engagement with animal health professionals.

Georgette Wouda, DVM