Animal Wellbeing Plan Template Guide

Guidance and support for Veterinarians. January 2025.

Vets play a crucial role in supporting New Zealand's farmers to operate in a sustainable, profitable, and productive way.
The advice and recommendations you share with farmers influence practices that improve animal wellbeing and farm operations. Animal Wellbeing Plans (AWP) are a vital tool to leverage transformation in on-farm practices, elevate animal health and boost farm productivity and, from July 2025 are required for all Fonterra suppliers. To support you, we have updated our guidance on AWPs.

Supporting individual farmer needs:

Vets frequently ask Fonterra to describe what examples of good practice are. This guidance material is in response, for those who want to make use of it. The provided information is not compulsory for the vet or the famer to follow and further, can be used in any way that works for you. Please use guidance from this document in a way that best meets your farmer's goals and needs. Understanding a farmer's operating style will help you develop an AWP that is fit for their individual challenges, processes, and objectives – which vary farmer to farmer.
This document now includes more detailed information on the opportunities we see for vets and farmer clients. It outlines Fonterra's view of good farm management practices and highlights potential service extensions for some vets.

Guidance for advice and action:

We have included sections on everything from calf care to pain management, including why each area is important and:

- Good farming practice/ on farm actions based on current industry understanding
- Benefits for farmers and veterinarians
- An example of what on-farm actions could involve.

For more information and detail see the ‘Animal Wellbeing Plan Guidance for Veterinarians’, to be released later in 2025. We hope these two guides support you in delivering quality Animal Wellbeing Plans and highlighting the importance of good animal wellbeing practices to support our farmers to farm productively, profitably, and sustainably. It is important that as an industry vets show strong leadership in this space.

Have a question?

Please feel free to get in touch for further information, or discussion.

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Nutrition

Nutrition underpins calf and heifer growth and lactating animal BCS, and is pivotal to health, reproduction, and productivity. Optimally conditioned, efficient cows produce more KgMS/ Kg Lwt, while BCS allows the herd's health and productivity to be assessed and inform farm planning.

Body Condition Score (BCS)

Good farming practice	Benefits	On farm actions- examples
4xBCS / year • ≥1 with an accredited assessor Other three can be mob level with >70 animals scored/ mob/ BCS event	BCS is key indicator of productivity and ensures forward planning is undertaken to drive feeding and drying off plans	4x BCS: 1. Pre-dry off, plan- All BCSed with Accredited Assessor 2. Pre- calving -Mob, BCS >70 animals 3. Post-calving – Mob, BCS >70 animals 4. Pre-mating- Mob, BCS >70 animals All data into herd management software Draft and preferentially feed/ reduce milking frequency etc. any individual animals that are low BCS outliers from the herd average. If the herd average is below target BCS target take action at a herd level Dry off decisions should be calculated for each animal based on body condition and expected calving date
Mixed age cows should be BCS 5 at calving, ≥4 at mating Heifers ≥ 5.5 at calving, ≥4.5 at mating, and <1 BCS loss from calving to nadir	Drives reproduction and productivity[1]	Dry off early enough/ reduce to OAD at the end of the season/ after calving and feed sufficiently to have MA cows 5 -calving, ≥ 4 – mating Heifers 5.5-calving, ≥ 4.5 - mating
0% of herd <3.5 BCS	Requires early diagnosis/ treatment, reduced forced culling	Any BCS 3.5-4 assessed for underlying disease; treated/ nursed. Encourage individual testing for "wastage" may identify herd level issues. Preferentially feed

[1] https://pubmed.ncbi.nlm.nih.gov/19923585

Treat animals as individuals, with any animals ≤ BCS 4 preferentially fed / treated/ milked OAD/ dried off etc.	Early intervention = faster recovery and survivability improved. Can save valuable high genetic merit animals	Identify any sick animals ASAP and intervene, draft and preferentially feed any individually identified cows ≤ BCS 4
If rising three-year-old heifers (R3) are not at BCS target consider a separate heifer herd to preferentially feed to improve reproductive performance, leave higher residuals and/ or consider OAD milking	R3 Repro performance is our biggest reproductive opportunity	Run a separate heifer mob to reduce competition and stress. OAD milking to reduce energy expenditure, maximize paddock time grazing, minimize walking and waiting time etc. Ensure if animals are fed in the shed, they still receive their macro elements needs/ supplement through other means if only entering the shed once a day
Minimize the negative energy balance by fully feeding cows. Have an accurate feed budget and feed wedge	Farmers can identify a feed deficit in advance and act and maintain quality pasture for longer	Use a spring rotation planner. Use skilled vets or contact a farm advisor/ nutritionist to generate a feed budget and feed wedge
Know your stocking rate (kg weight of MA healthy cows for a comparative stocking rate). Know your feed quality	As genetic merit increases, stocking rate needs to adjust to prevent cows becoming increasing underfed relative to their potential	Weigh cows for accurate LWT using DairyNZ recommendations[2]- With standard annual breeding worth (BW) gains each year we should increase feed supplied by 500T/ 300 cows/ year

Transition Management

Effective transition management can reduce deaths, disease, and the longer-term negative impact on production. In Australia 4% of cows are lost from the herd (involuntary culls/ deaths) in the first 10 days after calving[3]. We do not have good data on the incidence of transition disease, however the DCV mortality target is <2% for mixed aged animals.

Good farming practice	Benefits	On farm actions- examples
Assess trace element status (iodine, copper, selenium, cobalt) pre calving (pasture, soil, herbage and bloods/ liver sampling)	Identifies any supplementation needed pre-lactation	Supplement cows as they move into the colostrum mob e.g. inject I, Cu, Se, B12

[2] https://www.dairynz.co.nz/animal/heifers/lw-targets/

[3] https://cdn-prod.dairyaustralia.com.au/-/media/project/dairy-australia-sites/national-home/resources/2020/07/09/transition-cow-management-a-review-for-nutritional-professionals-veterinarians-and-farm-advisors/transition-cow-management-a-review-for-nutritional-professionals-veterinarians-and-farm-advisors.pdf?rev=7dcd11dc50ce411190a262097fcd1011

At target BCS feed 90% ration Below BCS feed 100% ration (Ensure feed budget accounts for wastage so cows are not energy restricted)	Reduces transition metabolic disease when at BCS	Run separate mobs based on nutritional needs
After calving have animals on a rising plane of nutrition as measured through an energy calculator and ensuring adequate quality/ quantity pasture cover	Improved pre-mate cycling/ reproductive performance	Know your feed quality MJ ME of pasture/ supplement Know your feed composition- protein, carbohydrate (starch/ sugar), fat and impacts on cow management Calculate feed demand and budget
Discuss Milk Fever including sub clinical milk fever, incidence for vet involvement including if occurrence is not "normal" and identifying contributing factors e.g. rain. One clinical case means 8 sub-clinical cases of milk fever	Faster change in farm management, reducing metabolic incidence and implementing effective control e.g. bolus/ in feed in the event of rain	Switch from lime flour dusting to in feed administration with rain as dusting is ineffective, blood test for subclinical milk fever. Use drenching/ multi-modal magnesium supplementation in extreme weather etc. Consider calcium bolus at calving for high-risk cows
Give cows time to transition. Objectively assess all cows before leaving the colostrum mob, and/ or moving them to twice a day milking, use rumination data if you have it	Better transition. Improved repro, production and survivability. Less clinical disease	Objectively assess all cows before moving to the milking herd. For at risk cows consider milking OAD after calving if required. Ensure if supplementation occurs in the shed their dietary needs are met through other methods (e.g. calcium, magnesium etc.) if on OAD milking
If sensor data is available use this real time data to flag health events and act, to change herd management, and as a tool to assess the success of transition management	Identification of sub-clinical disease, faster diagnosis, recovery and survival	Utilize rumination alerts/ heath alerts for early identification and action for sub-clinical disease in the herd in association with diet composition[4], and as a tool to assess transition management success
For any off/ sick cows identify, nurse and treat them ASAP reducing recovery time. Give them added time in the colostrum mob to recover	Improved reproduction, production and survivability.	Keep sick and recovering cows in the colostrum mob until they are judged to be ready and fit to join the main herd
For any disease utilize non-steroidal anti-inflammatory (NSAID) as part of the treatment protocol	Improved AW, repro, production, survival. Faster recovery. Less antibiotic (AB) use	Standard treatment protocols all to include NSAID use

[4] https://www.dairynz.co.nz/animal/nutrition/transition-cows/

Calf Nutrition

Calves have more growth potential than we allow them to realize on average in NZ[5]. Increased growth in early life results in increased future milk production in NZ dairy heifers[6].

Good farming practice	Benefits	On farm actions- examples
Feed colostrum: >22% Brix 10% bodyweight within 6-12hr split into two feeds	Positive whole of life production impacts. Increased survivability/ reduced clinical disease. Improves performance of non-replacement calves (NRCs) sold for rearing, more likely to gain repeat buyers	All farms have refractometer. Pick calves up 3x/ day and tube on entry into shed, 1st Milking colostrum goes to youngest calves (including heifers and NRCs)
12 calves tested for FPT within the first 2 weeks of calving at 1-7 days of age	Identifies issues early, allows management change so other calves benefit. Vets add value to calf rearing and reinforce average daily gain (ADG)/ weight target benefits/ weighing etc.	BT calves- If ≥ 20% (2 calves) have FPT take remedial action- review and change colostrum management
Ad lib clean water[7] from day 1 and high-quality hard feed	Rumen/ micro development, increased supplement intake, improved ADG, Calves desire dry feed	Troughs in every pen cleaned and refilled daily, meal in clean troughs available and topped up
Discuss the recommendation for twice daily feeding for at least the first 3 weeks of life	Increases calves' ability to take in adequate nutrition, reduced hunger, social license considerations	Feed 2x/ day off calfateria or have ad-lib feeding systems. Observe for cross suckling/ eating bedding indicating calves needs are not being met
Recommend feeding at least 15%- 20%[8] of birth weight per day e.g. 8 liters for a 40 kg calf split into at least two feeds	Allows for nutritional needs to be met, ADG, target growth and weaning weights to be met	Feed 2x/ day off calfateria or have ad-lib feeding systems
Feed warm liquids (< 38 C), keep the temperature of liquid feed consistent	Helps train calves to suck, reduces metabolic draw compared to when cold liquid is fed	Use milk warmers for whole milk. Mix CMR with warm water. Use warm water when mixing rehydration solutions

[5] https://conservancy.umn.edu/items/ffc698fb-f340-4c28-abe5-1f3fbcbff2ab
[6] RC Handcock ORCID Icon,N Lopez-VillalobosORCID Icon,LR McNaughton,PJ Back,GR EdwardsORCID Icon &RE HicksonORCID Icon 2019
[7] https://www.canr.msu.edu/news/water_for_calves_is_important
[8] https://store.nzfarmsource.co.nz/campaigns/2021/calving/nzagbiz_feed_guide_calves.pdf

Identify and assist slow feeding calves	Ensures preferential care. The sooner they are trained the better	When calves are first brought into the shed concentrate on slow feeders. Ensure staff are trained to identify them
Offer increased nutrition and take steps to increase warmth when[9] temps drop (thermoneutral 15-27 C) e.g. use of wind breaks, calf covers etc.	<10 degrees C calves require extra calories to keep warm and achieve average daily gain	Offer increased feed- allows for increased dietary fat availability (primarily) ensuring ADG and optimization of lactation performance as an adult
Weigh using scales to wean, using breed target weight onto quality pasture. Ensure each individual is eating > 1-1.5Kg pellets @20% protein/ calf/ day when weaned at/ around 12 weeks of age	Ensures calves at breed target for age, reduces likelihood of a weaning check when the rumen is developed, and that the calf will eat sufficient high-quality pasture for nutritional needs	Weigh calves weekly to fortnightly and wean based on breed target (from herd management software)
Ensure coccidiosis management is in place, especially for those calves on a high-volume milk system who are not ingesting > 1-1.5 kg meal/ head/ day	To reduce clinical disease and impacts on growth rates	Coccidiostat in meal/ supplement. Hygiene and treatment in clinical disease. Move infected animals to a clean area, disinfect area with oocyte effective product
Make feed changes slowly and wean off milk over a two-week period	High milk volumes can impair meal/ supplement intakes and rumen development	Identify calves to be weaned and reduce milk intake in 25% steps every 3-4 days to allow time for meal intake to increase

Efficiency

Genetic Gain

Have a focus on faster genetic gain, increased profitability and on farm efficiency. Use of tools (targeted selection of sources of replacements, sexed semen (SS), genomic bulls etc.) will result in faster breeding worth (BW), efficiency and productivity gains if animals are grown and fed to their full potential. Later, a herd improvement strategy document will be released that farmers may seek assistance with to complete.

Good farming practice	Benefits	On farm actions- examples
Discuss the benefits of 4 herd tests per year	Improves accuracy of BW, culling decisions, allows quartile reporting	Herd test ≥ 4 herd tests/ year
Emphasize the need for accurate recording of replacements. 23% on average are incorrectly identified (higher on some farms[10i]. Intensively	Accurate breeding records to use as a base for genetic improvement, reduce waste rearing poor BW calves	Manage through improved observation with highly trained staff, multiple calf pickups/ day, DNA parentage assignment on replacements

[9] https://nydairyadmin.cce.cornell.edu/uploads/doc_903.pdf
[10] https://www.dairynz.co.nz/animal/breeding-decisions/recording-parentage/

monitor at calving to identify calves to dams, enter accurate calving dates, or DNA parentage assignment for replacements		
Help farmers understand the power of BW and genetic gain and how this translates into increased productivity and profit. Discuss any relevant EBVs relevant to your farmers breeding goals	Profitability, sustainability and efficiency, improved repro performance, increased selection pressure of desired traits, targeted selection/ culling	Farm could request breeding company quartile report (ranking on e.g. BW, KgMS/ cow, KgMS/ Kg LWT etc.) or use a culling guide report from their management software programme Explain quartile reports and the spread of variation of performance in their herd and benefits of a targeted breed plan + improved BW. Replacement genetics selected reflecting farmer goals
Assist in generating a Herd Improvement Strategy[11]	Faster genetic gain Reduced RR, increased discretionary culling	Use breed company quartile reporting to identify replacements from top cows e.g. highest e.g. 50%-80% BW cows
Discuss the benefits of increased selection pressure	Faster BW gain. Reproductive performance positively correlated with increased BW	e.g. for each 10% low BW cows you do not select replacements from there is an additional 6 BW points gained (2024 LIC data)
Assist in generating a targeted culling plan	Allows farmers to target individual challenge areas and redistribute feed to highly productive cows	Weigh culling recommendations based on farmer goals e.g. mastitis and late calver etc. Emphasize fertility EBV alongside BW in semen selection decisions
Discuss the use of tools for faster genetic gain and the benefits of using these	Faster genetic gain, significant potential increase in production. Reduced generation interval. Potential income stream from sale of excess replacements. Confirmed, accurate parentage	Sexed semen in early cycling, healthy high BW MA cows Genomic testing of calves/ cows (identify superior genetics at a young age to retain as source of replacements, improved BV information) Use of genomic bulls- including in heifers
Consider the use of sexed semen to generate replacements from healthy, early cycling, high genetic worth mixed age cows. (Discuss possible reduced conception rates in heifers before considering sexed semen use)	Reduced replacement rate, increased BW gain, increased selection pressure, compact calf rearing period for replacements, reduced emphasis on key personnel during mating	Mate a % of healthy, high BW early cycling (fertile) cows to sexed semen relevant to the farmers needs and replacement rate

[11] https://www.dairynz.co.nz/media/gashsy2k/technical_series_july_2014.pdf

Discuss the use of genomics (use of animal's own DNA to improve the reliability of her breeding value) to get more and faster production information	Improved breeding value accuracy, confirm parentage, allows retention decisions to be made based on DNA without waiting for production data	Breeding companies offer DNA profiling and parentage testing. Can DNA test calves only (less cost), or also include cows
Assist in generating a targeted breeding plan- know the limitations of short gestation genetics in the beef system	Breeding calves for an intended purpose, including beef calves with good beef performance. Improves AW outcomes. DIM with shorter calving period	Use beef genetics with good growth potential for bottom 20-30% BW cows if fits with farm system, consider tools for faster genetic gain- AI in heifers, genomics etc.

On Farm Efficiency

Good farming practice	Benefits	On farm actions- examples
Discuss the benefits of maximizing days in milk through condensing the calving pattern, higher 6WICR and maximizing DIM (SGL semen, metritis assessment/ treatment, hormonal interventions)	Improved profitability, increased days in milk, better feed/ feed quality to demand match from pastoral feed, earlier AI replacements born	Focus on reproductive performance, having a herd breeding strategy, veterinary interventions e.g. - metrichecking, hormonal interventions etc.).
Discuss with the farmer where they want to make farm efficiency gains in association with the farms' Insight report (mastitis, lameness, SCC)	Alignment of farmer goals/ interest with opportunities	e.g. for lameness- focus on increased monitoring, early identification, accurate recording and treatment, crush facilities, use NSAID etc.
Discuss the benefits of improving feed efficiency through maximizing growth, quality and utilization of home-grown feed	Improves focus to improve feed efficiency, consider other options e.g. crop/ pasture species and renewal	Focus on optimizing home grown feed growth (soil, nutrients, irrigation, management), quality and feed utilization
Discuss the limitations of using fertilizer in situations that will not maximize return e.g. too low soil temperature, a lack of ground moisture etc.	Raises awareness of optimizing fertilizer application timing and consideration of alternative feed sources e.g. silage	Included in feed budget planning. Consideration and sourcing of alternative feed sources e.g. silage when a feed deficit has been identified

Environment

Farm systems vary from region to region and system to system, as such the AWP needs to reflect individual farm challenges and requirements.

Facilities

Good farming practice	Benefits	On farm actions- examples
Have a quarantine area for adult animals	Animals can be isolated for parasite/ bio-security management/ isolation	Have an area set aside that is ideally not grazed by the herd/ young stock. New animals coming on to the property should be separated for at least one week
Have a quarantine pen for calves that is used	Reduced disease spread	Have a separated pen for new/ sick animals before they are mixed, have a separate sick pen for replacement calves
Load out areas and yards should be safe and well maintained	Safe transport of animals, less staff stress	No broken rails/ gaps in ramps etc.
Discuss the benefits of having good facilities e.g. safe, adjustable crush with roof and effective lighting	Enables a better/ faster/ safer job to be done in all weather	Safe, adjustable crush with concrete base and roof and effective lighting

Calf Housing

Good farming practice	Benefits	On farm actions- examples
Space per calf target 1.5-2.5m2, have identified maximum capacity for pens/ the shed	Reduced morbidity, mortality, improved animal AW outcomes	SOP/ staff training and ear tags on gate show pen capacity
Bedding (material and condition) should be clean, comfortable, free draining, dust free, dry and warm and encourage lying and play behavior[12]. Stones or slats should not be used	Reduced disease, improved AW outcomes, calf play/ enjoyment increased. Social license	New post peelings, saw dust/ shavings each season and topped up or replaced as required to maintain hygiene
Sheds should receive natural sunlight and have adequate airflow so no ammonia smells can be detected and, when necessary, provide shade	Improved AW outcomes including respiratory health, growth rates. Social license	Shed open to sunlight and protected from prevailing wind. Assess comfort by sitting at calf height shirtless to assess comfort/ temperature/ smell

[12] https://www.journalofdairyscience.org/article/S0022-0302(14)00324-5/pdf#:~:text=Furthermore%2C%20dairy%20calves%20showed%20a,et%20al.%2C%202012).

Have hot water available. Clean feeding equipment daily (3x/ week as a minimum) with detergent to prevent residue build up and disease spread	Reduced disease, easier ability and more effective to clean gear, nicer experience for calf rearers	SOP/ staff training
Have clean troughs/ water available from day one	Increases hard feed intake, growth rates, improved AW	Miniature troughs on wall with ball cocks in all pens
Where possible have separate rearing and load out facilities for replacement and non-replacement calves. This maintains separation and reduces unnecessary access from outside parties into the replacements area	Reduced disease transmission from off farm, improved biosecurity practices, allows separation in the event of a disease outbreak	Separate replacement and non-replacement calf sheds with dedicated feeding/ rearing equipment. In your calf rearing plan, include how separation of facilities will be used to reduce disease transmission through biosecurity practices (boot wash/ washing hands/ changing clothes/ footwear etc.) the order in which calves are cared for (if the same staff), moved etc.
All housing requirements apply equally to replacement and non-replacement calves- e.g. water, bedding, space etc.	Improved AW outcomes including respiratory health, growth rates. Social license	All requirements met in both sheds

Heat Mitigation

Good farming practice	Benefits	On farm actions- examples
Have outdoor shelter for passive cooling[13]	Mitigates heat, may limit heat related production decrease, social license	Planting of shelter belts/ shade trees where they work within the farm system (5m2/ cow), covered feed pad
For Farms at high risk of heat stress		
Educate farmers on what signs of heat stress are and how these will be monitored/ thresholds for action	Increases awareness and potential benefits from implementing mitigation	Farmers observe for seeking shade, elevated respiratory rate, open mouth breathing, depressed milk yields and act according to determined triggers e.g. RR > 65 bpm, rocking, sweating etc.
To raise awareness, discuss if farmers are using air conditioning in their homes at night, if so, cows are likely negatively affected by heat stress	Raises awareness of the low temperature (20C) when heat impacts production	

[13] https://www.dairynz.co.nz/animal/animal-health/heat-stress/#:~:text=Cows%20walking%20to%20milking%20and,per%20cow%20at%20milking%20times.

Have troughs available in races and on the yard, let cows walk at their own pace	Reduces heat stress	Troughs in races, near hills in lanes and on the yard/ near yard entrance, minimize pressure on cows when they are moving
Discuss considering changing milking frequency/ timing to cooler times of the day, use paddocks close to the shed with shade during hot weather	Reduces heat stress, may limit heat related production decrease	
Utilize OAD when necessary	Reduces heat stress, may limit heat related production decrease	Milk OAD at a cool time of the day
Active cooling: Consider sprinklers and/ or fans[14]. Get expert input into sprinkler location, spray pattern, nozzle size, coverage, droplet size and do not fix sprinklers in place until adequate coverage is determined. Consider water pressure/ wind direction[15]	Most effective way to reduce heat stress, improves human comfort during milking. Reduces dust/ flies.	Sprinkler system on the yard. Fans in the shed. Work with engineering firm to ensure a good outcome
Water droplets should be 0.8-1.00mm[16] to decrease cow temperature effectively with a flow rate of at least 1.3 liters/ minute (balances water use with reducing temperature)	Spraying cows with water from sprinklers drops the temperature the fastest and for the longest period of time (Latent heat evaporation)	Work with engineering firm to ensure a good outcome
In humid environments sprinklers must be used in conjunction with fans, airflow is critical		
Discuss walking distances and recommend grazing plans are set up to ensure walking distances are < 4km	Maximizes grazing/ rest time, reduces energy expenditure to walking, reduced lameness	Spread grazing of far paddocks out across days, consider race design layout for walking efficacy. Adjust grazing plans where possible with temperatures factored in

[14] https://www.sciencedirect.com/science/article/pii/S0022030218309780

[15] https://www.novusint.com/resources/heat-abatement-strategies-for-keeping-cows-cool/

[16] https://www.researchgate.net/publication/336042166_Optimizing_Water_Droplet_Diameter_of_Spray_Cooling_for_Dairy_Cow_in_Summer_Based_on_Enthalpy_Difference_Theory

Resilience Planning

Forward planning in advance of extreme weather events allows for fast response and improved animal wellbeing outcomes. It is recommended that farmers have a documented resilience plan with farm specific hazards addressing animal wellbeing in the event of adverse weather, emergency situations and where relevant covering winter grazing.

Adverse Weather

Good farming practice	Benefits	On farm actions- examples
Identify where sheltered areas exist that provide protection from adverse weather	Forward planning allows for quick action in adverse weather	Farmers have a known procedure/ SOP for resilience planning covering where cows/ youngstock are to go based on known regional weather patterns
If cows are regularly stood off on concrete discuss any negative cow impacts e.g. lying behavior/ lameness and how these will be mitigated	Raises awareness, highlights opportunities for improvement if it's an issue on farm e.g. lameness	Use of rubber mats on concrete

Emergency Management

Good farming practice	Benefits	On farm actions- examples
Identify how cows will be managed in extreme weather e.g. flooding and where feed stores are in the event of snow	Forward planning allows for preparation/ response for an emergency	Farmers have known procedure/ SOP for resilience planning with the farm's emergency response including contact details for key contacts/ personnel/ service providers. Emergency feed is available at wintering sites for snow prone properties. Farmed mapped with hazards and flood prone areas identified
Identify how milking/water supply will be maintained in the event of a power outage	Forward planning allows for response improving AW outcomes	Know where to source/ have a generator on site, work out an emergency response with neighbors in the event not all local farms are impacted

Winter grazing

- Where relevant. Refer to NZVA Winter Grazing Taskforce[17]

[17] https://www.mpi.govt.nz/animals/animal-welfare/safeguarding-our-animals-safeguarding-our-reputation/animal-management-winter-grazing-mud/

Young Stock Management

Good youngstock management results in highly productive lactating animals, improved AW outcomes reduced morbidity and mortality from disease and improved staff job satisfaction.

Calf housing/ care

Good farming practice	Benefits	On farm actions- examples
Ensure the farm has standard approach to navel care and colostrum management- timing, volume, quality	Reduced morbidity, mortality, calf rearer enjoyment increased	Calves picked up 3x/ days, navels sprayed with iodine alcohol when picked up then daily until dried and shriveled 2L first colostrum, >22% brix on shed entry then within 10 hours
Discuss how to carefully handle calves[18] e.g. to lift/ move them	Improved AW outcomes, improved ease to handle calves, less bruising	Whole body lifts, supporting all limbs, ensure limbs do not knock on gateways etc., demonstrate brushing calves' hair to get them to stand reducing picking animals up
Discuss ways to minimize disease spread[19] (start with youngest calves first/ separate feeding equipment), boot washing, changing gloves etc.	Reduced morbidity, mortality, calf rearer enjoyment increased, less work	SOP/ staff training
Have controlled staff movements for calf care[11]	Reduced disease spread	SOP/ staff training
Have clean troughs/ water available from day one	Increases hard feed intake, growth rates, improved AW	Miniature troughs on wall with ball cocks in all pens
Have sanitizing agents available to reduced environmental load of contaminants and regularly used	Reduced morbidity, mortality	Have cleaning equipment and viricide/disinfectant available and regularly used e.g. 2-3x/ week
Have real time thresholds for action for scours/ sickness/ deaths etc. and when vet is to be called	Measure to be able to monitor. Earlier intervention improving morbidity and mortality	SOP with trigger identified: <5% clinical disease to weaning Triggers identified for Sickness/ scours, deaths and actions to take
When calves are moved to the paddock there must be appropriate shelter available. Calves should have access to shelter for as long as possible	Improved AW outcomes, improved growth rates, social license	Calf shelters/ hutches in the paddock, calves housed in sheltered paddocks, calves brought back inside in adverse weather

[18] https://www.dairynz.co.nz/animal/calves/collecting-calves/
[19] https://www.dairynz.co.nz/animal/calves/calf-housing/

Calf Health

Good farming practice	Benefits	On farm actions- examples
Discuss bio-security practices to be used on farm specific to calves	Reduced disease, maintains/ improved disease elimination	Identified practices if calves are brought in, actions to be taken if Johne's control is in place e.g. colostrum management
Record all calf health events and deaths in the Dairy Diary app regularly	A supply requirement. Accurate incidence of disease to identify trigger	SOP with trigger identified: Death trigger level and actions to take
Castration: Pain relief should be used even if not required by law (due to age). Castrate at youngest practical age	Faster and shorter recovery, minimises weight gain reductions, improved AW outcomes	Pain relief could include a combination of alpha-2 agonist (xylazine) in conjunction with a local anaesthetic and NSAID
Discuss pain levels associated with different castration techniques[xiii] acute pain from Burdizzo is less than surgical or rubber-ring castration. Burdizzo plus rubber ring combined results in reduced pain behavior compared to rubber ring use alone	Faster and shorter recovery, minimises weight gain reductions, improved AW outcomes	Equipment and staff training, available to perform least painful practical technique. Pain relief could include pain relieving sedation/ NSAID and local anaesthetic
Encourage multi modal pain relief when disbudding[20]	Faster and shorter recovery, minimizes weight gain reductions, AW outcomes	Pain relief could include a combination of alpha-2 agonist (xylazine) in conjunction with a local anaesthetic and NSAID
Discuss the use of any drugs with a withholding period/ antibiotic in calves. Discuss actions to be taken if a non-replacement calf is treated with an anti-biotic or consumes milk within an anti-biotic period[21]	Raises awareness of residue issues, legal requirements met, raises awareness of negative impacts of feeding milk within a withholding period to replacement calves	For non-replacement calves' default withholdings may apply requiring the calf to be kept for extended periods. Farmer may choose for milk within a withholding period to be discarded and not fed to replacement calves
Discuss how calves will be marked / identified and recorded when treated. Discuss the same for heifers- especially if they are grazed off farm	Raises awareness of residue risk for non-replacement calves. Results in better incidence records/ collection of real time data. Ensures communication framework established with grazier if animals require treating	Calves have different colored ear tag applied or neck tags. Records entered into herd management software with cause of disease. Treated non-replacement calf moved from bobby pens. Expectations of heifer grazer on treatment

[20] https://pubmed.ncbi.nlm.nih.gov/27256490/
[21] https://www.dairynz.co.nz/media/onufnrhc/6280_amr_guidelines_dairy_4-0_digital-nzva.pdf

		protocol and communication established and written into grazing contract
Discuss the benefit of recording all animal treatments in a herd management system	Allows for accurate incidence of disease, real time monitoring	MINDA or myHERD entry
Discuss benefits of trace element testing and/ or supplementation[22]	Reduced morbidity/ mortality	Inclusion in the AH Plan

Youngstock parasite management

NZ has drench resistant parasites expected to negatively impact calf and heifer growth rates and the sustainability of intensive cattle youngstock farming. Changes to farm management and responsible anthelmintic use are required to slow the spread and impact of anthelmintic resistance[23].

Good farming practice	Benefits	On farm actions- examples
Have a parasite management programme that includes monitoring, for 1. When treatment is required, and 2. Regular checking of the performance of anthelmintics used via FEC and FECRT	Avoids unnecessary treatments (a risk factor for resistance). Identifies the degree of worm resistance prior to reduction in animal performance, enables a plan to mitigate, utilizes vet knowledge, should slow resistance impacts	Have a documented parasite management plan (could be part of AWP) including scheduled monitoring dates for calves and when FEC and FECRT are to be undertaken for all youngstock (calves and heifers)
Discuss strategies to reduce reliance on anthelmintics through better feeding. Target improved growth rates to reduce the period susceptibility of youngstock to worms	Reduced reliance on anthelmintics, vets well placed to advise on farm management actions, increased sustainability of youngstock farming operations	Reduce larval intake via cross grazing with older stock classes/ other species, utilize crops/ new grass as “clean” low risk feed for. Aim for high ADG to reduce the period youngstock are at risk from parasite challenge
Education on early worm treatments: Treatment is generally not required until calves have a well-developed rumen – generally not before 10 weeks of age	Avoids unnecessary treatment. Results in accurate diagnosis and treatment of coccidiosis with faster resolution	Calves should not be treated with anthelmintics in their early weeks of life and should be monitored for coccidiosis and treated accordingly through this period
Discuss farm specific drench recommendations, including 1. how drench selections are made for this farm 2. that appropriate oral drench for the age of the animal	Raises resistance awareness, the need for tailored programmes specific to the animal’s age, resistance on the property, highlights that mode of delivery has significant impact on drug efficacy in cattle	Property dependent. Get information from FEC/ FECRT. Use the most effective combination drench available (as determined by FECRT) Avoid use of pour-ons

[22] https://pubmed.ncbi.nlm.nih.gov/31023869/
[23] https://beeflambnz.com/knowledge-hub/PDF/wormwise-dairy.pdf

are specific to the parasite resistance status of the property		
Discuss that anthelmintics must not be administered in milk	Responsible anthelmintic use. Correct administration ensures correct dose rate and reduced risk of toxicity (as rumen bypass does not occur)	Oral drenching using accurate dose rate based on weights in kg (weigh calves/ heifers using scales) administered by accurate and calibrated oral drench gun
Discuss the need for regular 'drench checks' after anthelmintic treatment of calves, to continually monitor the efficacy of products being used	Drench efficacy can change within the same season – an annual check may not be sufficient	Drench check 2x/ year for calves, or when additionally indicated e.g. with reduced GR/ clinical disease etc. schedule in parasite management plan including for animals grazed off
Discuss the benefit of pre-treatment FECs[24] and larval cultures to enable a percentage reduction in FEC to be calculated for each product to assess how quickly animals are becoming re-infected after their last treatment	Provides useful information to inform product choice and follow-up testing post-drench. Overall FEC reductions are meaningless – reductions need to be calculated at the worm species level	Use individually identified samples so that paired samples can be used to calculate FEC reductions. Pre-treatment larval cultures enable FEC reductions to be calculated at the species level. Drench intervals may be extended where animals are growing well, on good feed and FECs indicate very low worm burden at expected drench interval. Close observation and follow up monitoring are required to ensure safety of this approach
Recommend positive post drench FEC monitoring samples be larval cultured to determine what species are surviving treatment, regardless of whether or not a pre-treatment FEC or larval culture was performed	Informs property resistance and management responses (grazing management, treatment plans)	If post treatment FEC is positive request larval culture. The resulting information may result in a change of treatment choice
Discuss that laboratory/ clinic submission forms for parasite monitoring must include full details of animals treated and products used when completed by farmers (and vets)	Accurate history so the correct diagnosis can be made	Complete and accurate completion of submission forms for owner, animal age/ location, and treatment history (product/ timing)
Discuss product efficacy: oral combination> injectable> pour-on products in calves	Provides superior efficacy against resistant Cooperia in this age group	Use of only combination orals in calves
Discuss importance of accurate weighing e.g. drafting mobs into weight lines (dose to kg weight) after weighing animals with scales	Reduces under/ overdosing, slows resistance, gives weight gain data point for each animal	Have scales on farm' use to weigh every animal (record weights in farm management software for LWT) and calculate anthelmintic dose at the time

[24] Interpreting Faecal Egg Counts | Beef + Lamb New Zealand (beeflambnz.com)

		of weighing (gold standard), or at least obtaining a weight range and drenching to the heaviest
Ensure farmers are aware of the need to regularly calibrate and check their drench guns and have been shown how to do this properly	Reduces under/ overdosing, slows resistance, gives weight gain data point for each animal	Vet/ tech shows them how to do this and checks dose delivered. Schedule this on the parasite management plan

Heifer Growth

NZ Heifers are on average 5% off growth targets at 22 months of age, however a good portion of NZ heifers meet and exceed liveweight targets showing they are achievable. When farmers regularly weigh their heifers and focus on LWT targets and gains, heifer growth rates improve, and key live weight targets are met. There is a 2kg MS per lactation impact for every 1% heifers are behind the 22-month target[25].

Good farming practice	Benefits	On farm actions- examples
Weigh heifers with scales every 6- 8 weeks with individual animal data recorded in farm management software	More animals reach LWT targets driving productivity[26]	Weigh individuals every 6 weeks, import data into herd management software, graph, identify any –5% off target and preferentially feed/ assess and treat AH issues
Discuss that average heifers with weights recorded fail to meet weight for age targets at 22 months of age by approximately 5%[13] and that weighing them and comparing to individual and mob targets is the only way to assess this	Raises awareness (visual observation is not accurate) Whole of life productivity impacts	
Discuss that >50% heifers do not have LW data recorded in a management system prior to entering the herd and are on average 5% below LWT targets	Emphasizes the opportunity/need for better youngstock weight recording, monitoring and action in NZ	
Strongly recommend grazier contracts exist- see below		
Recommend grazier contracts contain 1. Communication/ responsibility when animals are sick etc. 2. Treatment/ recording expectations 3. Expectations for regular~~ly~~ communication	Ensures alignment of grazier and farmer before issues arise. Outlines expectations and should result in healthy well grown heifers. It has a preventative rather than reactionary focus which should improve profitability and reduce wastage. Should see more	Will depend on the farm, grazier and their services/ skills, distance to grazier and division of responsibility for: observation animal care treatment

[25] https://www.researchgate.net/publication/289384363_Effect_of_heifer_live_weight_on_calving_pattern_and_milk_production , LR McNaughton* and T Lopdell 2013
[26] https://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Sciences/epicentre/Docs/Sameh_Ahmed_MVS_Dissertation.pdf

4. Contingency planning for adverse situations (e.g. feed shortage, weather) 5. Aligns farmer and grazier incentives for GR 6. Includes weighing heifers 6 weekly with scales + data entered into a data management system with review and actions when 5% mob is off target or expectations for individual feeding/ treatment 7. The anthelmintic management plan 8. TE testing/ supplementation 9. Reproduction 10. Biosecurity[27]	animals reach LWT targets, better CR and calve at BCS 5.5	monitoring Environment management (e.g. electric fences) See https://www.dairynz.co.nz/animal/heifers/contract-grazing/
Nutrition: Youngstock to achieve LWT targets 30% by six months, 60% by 15 months, 90% by 22 months and 5.5BCS at calving. Encourage accurate mature LWT targets to be calculated and used for interim youngstock growth targets	Drives reproduction and whole of life productivity	Weigh heifers every 6 weeks, monitor against targets and react as needed with preferential feeding/ animal health mgmt. NB: animals that fall too low during the first winter growth dip at approximately 12 months of age will have a negative impact on lifetime production. Use the most accurate data you have to estimate the mature live weight e.g. BV trait report for LWT breeding value when dams are accurately recorded, or weighing cows as per DairyNZ approach to calculate a mature herd weight av[28]
Heifer health plan- Trace elements	Identified and treats any deficiency improving AH, GR and productivity	BT/ sample for Cu, Se, Co, I as a minimum and other TE as relevant to the diet/ region/ farm system

[27] https://www.dairynz.co.nz/biosecurity/biosecurity-support/biosecurity-on-grazing-properties/
[28] https://www.dairynz.co.nz/animal/heifers/lw-targets/

Data and training

Staff training is key to ensuring effective animal wellbeing. Good data management allows farmers and vets to identify issues as they occur, incidence, opportunities for improvement and to assess successful farm management practices.

Good farming practice	Benefits	On farm actions- examples
All individual animal health events must be accurately and fully recorded in the Dairy Diary app (either directly or via your herd management system) in a timely manner	Allows true herd incidence to be known for monitoring and identification of opportunities for improvement, improves culling decisions	Animal Health events (and treatments) recorded cow side, or at least weekly from whiteboard to herd management software
All animal health treatments recorded in the Dairy Diary (either directly or via your herd management system)	Allows for efficient auditing, proof of compliance and calculation of drug use.	Animal treatments recorded cow side, or at least weekly from whiteboard to herd management software
Discuss the benefits of setting real time thresholds for incidence of disease and have farmers act on these when they are breached	Identifies issues sooner allowing for reduced morbidity and mortality with prompt diagnosis/ treatment	Include incidence triggers for action e.g. 1 case mg staggers or > 2 MF in colostrum mob/ day etc.
Discuss the importance of all animals have required individual animal identifiers (tags)	Legal requirement	Retagging done as soon as needed, fences at runoffs-maintained so tags don't get rubbed out
Discuss that all farm staff should be trained in the areas they are responsible for and competent to handle, care for and treat animals relevant to their role on farm/ the runoff	Required for vets to prescribe. Improves records, decision making, diagnosis, treatment administration, efficacy, AW outcomes and staff enjoyment	Annual refreshers in calf rearing, stockmanship, animal treatments, young stock growth, treatment protocols, LS, BCSing, heat detection, data management, milking management etc. Full training and induction relevant to the role and previous experience for new staff

Lactating Animals

Udder Health and Mastitis

Good farming practice	Benefits	On farm actions- examples
Strongly recommend that herd tests are completed 4x/ year	Improves breed planning accuracy- identify replacements and culling, ≥ 3 HT needed to generate quartile reports, informs DCT, improves BW accuracy. Allows for bulk milk testing (BVD, Johne's), reduced SCC	Herd test 4x per year
< 10% incidence of clinical disease total season[29]	Profitability, improved AW outcomes, reduced contagious spread, improved milker enjoyment, decreased SCC, reduced workload	Keep accurate herd level records. Effective stockmanship, calving, teat care and milking management, prompt and accurate diagnosis of cases
Average BMSCC < 150,000	An achievable goal. Profitability, reduced grading, increased production, improved AW outcomes	Attention to daily SCC, herd test results and prompt actions with changes to SCC
Identify the number of cases relative to the number of cows milked for the farmer that correlates with a trigger of < 8 clinical cases/100 cows per month during calving e.g. for a 450-cow herd this is a trigger level of 36 cases/ month	Better monitoring, diagnosis and prompt response when a trigger level is measured/ reached	Regular recording and review of mastitis. Farm target recorded in AWP with actions to take if it is exceeded
Discuss the need to verify culture results with clinical presentation	Important to ensure instigated treatment is consistent with diagnosis to improve AW outcomes and cure rates	Case presentation objectively assessed against culture results (vet input likely needed here), communication between the farm and the farm vet
Identify triggers of when the farmer should assess issues/ seek veterinary help e.g. SCC acutely increases> 50,000, x cases mastitis within the first 2 weeks of lactation etc	Ensures focus on acute change and actions to prevent spread/ severity of change in SCC or incidence	> 50,000 increase SCC- paddle herd, seek advice for SC mastitis if no clinicals are identified
Utilise NSAID for all cases of clinical mastitis, discuss improved cure rates with NSAID use[30]	Reduced culling and SCC. Improved bacteriologic cure and repro performance	NSAID administered for all clinical cases of mastitis e.g. Meloxicam in association with appropriate antibiotic therapy

[29] https://www.dairynz.co.nz/animal/mastitis/
[30] https://pubmed.ncbi.nlm.nih.gov/26778316/

Farmers/ graziers must observe cows during the dry period for mastitis	Identifies dry-cow mastitis to ensure treatment and increase likelihood of cure and improve AW outcome	Cows objectively checked at least daily when breaks are moved- observed for swelling, off feed, lethargic, lame especially in the first few days after dry off
Emphasise the importance of teat skin health, when appropriate offer teat scoring and services to improve teat skin health	Increases awareness of importance of teat skin health as a defense mechanism, may improve observation of milking machine, teat spray active/ emollient etc. on teat skin health	Undertake teat scoring as part of a regular mastitis management visit, identify management changes to improve teat skin
Utilised BMSCC and mastitis monitoring data to identify trends and triggers for veterinary intervention	When BMSCC at 140,000 act	Farm dependent: strip/ paddle, review herd test data Mastitis incidence > x%/ week act
Discuss that demerit relief is available for accredited veterinary mastitis support	Helps farmer identify issues Faster wholistic veterinary intervention	Fonterra MQM contacts vet to request assistance
Have culture results from lactation infections, herd age structure and herd test results to inform treatment plans	Allows for accurate treatment and culling decisions improving cure rates and profitability long term	For individual cows: culture results for recurrent/ unusual or repeat cases, age, 4x herd test results

Lameness

New Zealand has low levels of lameness, with a prevalence of approximately 3%[17] compared to 20% globally. There is however the opportunity to have better recording to identify accurate lameness incidence and the identification and identify and assist farms have lameness issues.
Treating lame cows is a chore and adds to the workload of time poor farmers. Encourage the use outside help (vet tech, hoof trimmers) to help in busy periods when needed to reduce the negative impact of lameness on animal and human wellbeing.
With increased focus including a formalised approach to monitoring, measuring, data collection, cow identification and resolution of causes[xxiv] lameness impacts can be reduced. Earlier identification and in depth and holistic treatment leads to better outcomes. Together and this can equate to fewer productivity losses and improved wellbeing outcomes.

Good farming practice	Benefits	On farm actions- examples
Discuss the opportunity to reduce lameness relevant to the farm[31]	AW outcomes, reduced labor costs, increased productivity, improved repro, reduced culling	Work out financial return from a lameness focus, discuss the predominant type of lameness and mitigations
Ensure the farm has a formalised lameness plan with a process: to identify, record and monitor and enter lame cows into the herd management system including leg/ lesion location. This plan should cover who's responsible, timing and frequency of scoring, treatment (what days), recording etc.	Accurate incidence, increases focus and AW outcomes Early diagnosis, prompt effective treatment, identifies causation, identifies when triggers are reached Accurate recording means repeat offenders are identified and this can be added to culling decisions	Staff training/ SOP that covers: Areas of responsibility How lame cows are identified (where tag numbers are recorded and leg/ lesion etc) and how lameness is classified in herd management software How records are made e.g. notebook originally and how it is then entered into herd management software How cows are monitored e.g. recheck when/ who This should state timing and frequency of locomotion scoring, treatment (what days), recording etc. ***The dates/ frequencies that lameness events are to occur should be locked in and stuck to***
Encourage farmers to seek outside help if they are time poor e.g. use vet technicians and hoof trimmers to do lame cows if they are time poor or don't have the skilled labour	Accurate incidence, increases focus and AW outcomes Early diagnosis, prompt effective treatment	Use of outside help during busy times. This may be having the vet tech coming out 2x/ week on set days to help during busy periods

[31] Podcast: Staying one step ahead of Lameness W Mason, The Vet Chat, Virbac

Ensure all lameness events are recorded including by vet techs and hoof trimmers	Get an accurate lameness incidence Make better culling decisions for repeat offenders	Data entered for all lameness events. The farmer should have clear responsibilities for who is to enter the data, how and when
Discuss the benefit of reinspecting (lift leg again) and retreating if indicated if still lame in set period e.g. 7 days	Confirms if original diagnosis is correct and allows for change to treatment if needed	Reinspect all still lame cows after 1 week, lift the leg again and assess for other issues/ need to change treatment
Identify trigger levels for lameness A prevalence target of < 3-5% is recommended, including for a single mobility scoring event An incidence target of <10-20% is recommended	Will encourage more record keeping improving accuracy and identifying the true scale of lameness and associated benefits (cost, labor AW) if this is reduced. Informs culling decisions	Prevalence Definition = number of cows scoring 2 or 3 on lameness score measure at a single scoring event, recent works shows an average of approximately 3% Seek help if above 5% Incidence e.g. the number of cows treated by trained staff over one season (usually June - May) Average = 14% Top farmers achieve = 8% or less Seek help if above = 20%
Undertake locomotion scoring[xxv] as needed- every 2-4 weeks at high-risk times, but not less 2x/ year for those not already undertaking lameness scoring to raise awareness/ for training purposes	Raises awareness, Use LS for staff training, early identification of lame cows reducing severity recovery times and production losses	LS 2-3 weeks after calving and again at a time that adds the best value to the farm (e.g. summer). Draft and record all individual cases by tag and treat. Use to train staff on lameness causes/ identification, treatment protocols and recording
Record all lame cows numbers/ draft them and treat them Train all staff to constantly observe animals for lameness and draft and treat (ideally) daily[32]	Early identification faster treatment and recovery. NSAID not as effective in chronic cases	
Pain management should be instigated for all L2/ L3 cows- include pain relief (NSAID)[33], and where possible reduce walking distance and use blocks	Faster recovery, reduced severity, reduced culling, improve AW outcomes, reduced BCS lost	3-day NSAID use for all L2/ L3 or repeat cases. Use blocks wherever possible e.g. for all causes if assists mobility/ reduced pain
LS3 cows should be treated on the day they are identified	Early identification faster treatment and recovery	Drafted at AM milking and treated
Backing gates should have an audible tone[xxviii], and be able to be visualised when moved to ensure no cows	Cow AW outcomes, less cows caught in backing gate, reduced lameness, reduced cow anxiety	No electricity. Not moved 1st 20 min milking. Button/ timer (5 sec) with auto cut out. Max

[32] Mason W et al. Lameness recovery rates following treatment of dairy cattle with claw horn lameness in the Waikato region of New Zealand. NZVJ 71(5):226-235, 2023a

[33] https://www.sciencedirect.com/science/article/pii/S0022030222003022

are caught/ there is room to move into and to take up space		distance moved 1 m (HB) 0.5m (rectangle), mirror in shed to see backing gate
Recommend Healthy Hoof[34] if there is a lameness issue	Raises awareness Reduces incidence	Herd Manager or Owner undertakes Healthy Hoof training

Reproductive Performance

Good farming practice	Benefits	On farm actions- examples
Emphasis the importance of repro improvement and drivers of this- heifer LWT, BCS[35], heat detection, bull/ AI management, early calving pattern, good transition management etc	37% of cow waste is from reproduction, reducing work, wastage, condenses calving period. Repro positively correlated with BW	Staff training. Heifers reach LWT Cows at BCS ≥ 5 at calving >75% herd cycling 10 days pre PSM, TE and macro-element testing supplementation and dietary management
Ensure an early PD is undertaken with data entered in the herd management software to enable a 6WICR to be generated with benchmarking	Able to generate a 6WICR to concentrate on ensuring early high BW cows get in calf and benchmark	Aged PD <120 days after MSD. Data is then entered into the herd management software
Encourage scanning for phantom cows as relevant to the farm and potential benefit	Small reduction in NICR	Phantom scanning and intervention plan in place
Utilize the Fertility Focus Report[36] to assess performance and identify repro opportunities on farm	Compare to top quartile performance, focusing on getting cows in calf early, 6WICR focus reduces NICR	Available from breeding provider or Infovet. Have pre-mate cycling records and non-cycler records for added benchmarking opportunity
Encourage pre-mate heat records to allow for early intervention/ better decision making[37]	Results in early intervention e.g. non-cyclers	Staff training. Accurate and complete recording. Tail paint on 6 weeks prior to PSM and all heats recorded (focus 1-2 hours after each milking)
Encourage non-cyclers to be treated prior to the PSM	Improves economic return, reduces lates/ empty cows	Non-cyclers (and at-risk cows) identified and vet checked 10 days pre PSM

[34] https://www.dairynz.co.nz/support/training/healthy-hoof-programme/
[35] https://www.lic.co.nz/news/reproductive-performance-do-you-know-where-your-herd-is-at/
[36] https://www.dairynz.co.nz/animal/reproduction-and-mating/fertility-focus-report/
[37] https://www.lic.co.nz/support-and-advice/reproduction/get-your-cows-calf-early-get-ahead/

Discuss benefits of TE testing/ supplementation[38]	Reduced disease. Increased immunological and reproductive performance	Supplementation prior to PSM, PSC or when entering colostrum mob. Test as recommended by the vet

Tail scoring

Good farming practice	Benefits	On farm actions- examples
Discuss tail scoring with individual animal records made so any tail damage can be identified over time[39]	Compliance for any reporting. Protective to new staff. Peace of mind for owners. Improved AW outcomes	Tail score all animals once a year with individual records and location of injuries made. Tail score all heifers/ returning cows on farm entry

Cull Cow Preparation

The animal wellbeing outcomes for cull cows when they are transported[40] can be improved with forward planning. The following represents new directives from MPI in late 2024.

Good farming practice	Benefits	On farm actions- examples
Discuss with farmers and their staff know when, and how to seek a vet certificate	Raises awareness Reduces likelihood of MPI/ transporter issues	Staff training. Farmer seeks advice animals they are unsure of and certificate for defective animals
Inform farmers that from late 2024 farmers must inform meat processing companies when an animal with a vet certificate is going to be supplied	MPI directive, improved communication reducing issues at the plant. Ensures plant is open to receive animals	Farmer rings the meat processing company before the animal is transported to inform them an animal with a vet certificate is going to be supplied for processing
Discuss with farmers that the receiving processing plant (if issuing a vet certificate) must have the capability to take animals with vet certificates/ specific types e.g. over sized The certifying vet should ask the supplier who they normally send their animals to, as some processors will not accept animals vet certificates or without an existing commercial relationship with that farmer	Raises awareness Reduces issues at the plant Reduces animals being unable to be processed	Farmer communicates to vet where they have existing commercial relationships to the vet when seeking a certificate Farmer seeks advice from processing premises for acceptance of vet certificated and oversized animals From 2024 the Meat Industry will provide processor information detailing plant open dates/

[38] D. Hawkins. (2007) The Effect of Injectable Trace Elements (MULTIMIN®) on Health & Reproduction Parameters in NZ Dairy Herds. DCV Newsletter March 2007.
[39] https://nzva.org.nz/assets/Policies-Guidelines-Resources/tail_scoring.pdf
[40] https://www.mpi.govt.nz/animals/animal-welfare/safeguarding-our-animals-safeguarding-our-reputation/transporting-dairy-cattle-to-ensure-they-arrive-fit-and-healthy/

		limits on size/ ability to process specific animals e.g. if lame
Certificates **MUST** name the destination premises, "nearest works" not suitable Certificates are only valid for 7 days and as per vet instructions No alterations can be made, except by a veterinarian, and as suitable	Improves animal welfare outcomes, meet legal; requirements	Vet completes the veterinary certificate as described and the animal is transported meeting these stated parameters
Discuss the need for animals to be adequately prepared considering the stage of lactation to reduce the chance of them going down in transport/ lairage	Raises awareness Improves AW outcomes	Lactating cows should be off feed for shortest time, have extra macro elements fed, hay+ water in yards and transported the shortest time/ distance possible. Down cows at processing premises typically have not been prepared for transport, are severely dehydrated and have low calcium and phosphorus

Antimicrobial Use

An AWP, as part of an effective, preventative animal health care programme, including the judicious use of antimicrobials, is key to reducing the reliance on antibiotic use and the development of antimicrobial resistance.

Good farming practice	Benefits	On farm actions- examples
All antibiotic use associated with the farm's dairy animals must be recorded	Veterinary and farmer compliance Allows for benchmarking	All treatments entered into herd management software. The vet clinic may choose to calculate the Population Correction Unit[41]or Animal Daily Dose[42]
There should be a documented procedure for antibiotic usage on farm (including animals at run-offs/ winter grazing) including: • what antibiotic is to be used when • the treatment regime (dose/ days etc) • culturing requirements for mastitis	Effective use of appropriate antibiotics resulting in improved/ faster cure. Improved AW outcomes, reduce forced culling through failure to cure/ contagious mastitis spread More complete information to identify antibiotic resistance	SOP or documented as part of the prescribing visit. The vet may choose to assess by period: antibiotic use against the prescription to determine suitability of the type/ quantity of antibiotic used on the farm. This will depend on having accurate and complete animal health records

[41] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508379/#:~:text=The%20PCU%20is%20calculated%20by,(AWT)%20(6).
[42] https://www.amcra.be/en/analysis-of-antibiotic-use/

• what actions to take if there is failure to cure		
Staff must be trained and judged competent by veterinarians to administer antibiotics, including the ability to: • calculate dose • administer (route SC/ IM/ IV/ intra mammaries etc, site/ competence) • Understanding witholdings • Marking/ recording animals and use	Meeting compliance requirements Improved individual animal health records Improved cure outcomes following treatments Reduced forced culling (mastitis cure failures) Improved AW outcomes following treatments Reduced residue (meat and milk) risk Improved ability to calculate antibiotic use benchmarking	Included in annual spring training content Recorded in staff training records Vets may choose to "sign off" staff as competent to administer antibiotics
Vets may recommend farmers undertake assessment of antibiotic resistance from a bulk milk sample at least annually[43]	Reduces waste (treatment failure) forced culling Informs appropriate antibiotic treatment approaches based on farm specific data Improves AW outcomes Slows antibiotic resistance spread	At least annual antibiotic antibiogram undertaken to inform the farms treatment protocol
Antibiotic Dry Cow Therapy, (ADCT). ADCT is only used on cows with an indication of infection	Reduces the risk of anti-microbial resistance developing, demonstrates industry progress towards MPI's AMR goals, reduces the risk of over-regulation	Dry off decisions are made at an individual cow level. Whole herd antibiotic dry cow therapy is only used in-line with SmartSAMM and Vet Council guidelines[44]

Disease Management and Biosecurity

Effective biosecurity can be utilized to prevent the importation of disease onto an otherwise not infected farm. Having farmers think about biosecurity in terms of preventing disease makes it more relevant to on-farm practices by effectively monitoring, and/ or treating animals at risk of spreading disease. For disease endemic to the farm there may be financial and production benefits resulting from testing, monitoring, prevention of spread and culling as part of an integrated response plan.

Good farming practice	Benefits	On farm actions- examples
Discuss benefits of a preventative focus for diseases identified as important by your farmer clients e.g. BVD/ Johne's, anthelmintic resistance, Salmonella, scours vaccination, TE supplementation etc.	Improves awareness of a management plan. AW, labor and staff enjoyment improved. Potential cost benefit. Improved sustainability Reduced disease incidence	Use LIC's Johne's dashboard[45](once commercially available) for holistic Johne's management, use of BVD bulk milk testing[xxxix], biosecurity initiatives,

[43] https://dab.elanco.co.nz/#:~:text=DAIRYANTIBIOGRAM%20is%20a%20new%20test,taken%20by%20your%20milk%20processor.
[44] https://hub.vetcouncil.org.nz/dry-cow-antibiotic-therapy
[45] https://www.lic.co.nz/products-and-services/animal-health-and-dna-testing/johnes-disease-testing/

		inclusion of vaccinations, monitoring, testing in AWP, TE supplementation
BVD – recommend testing, assessment and control plan	Reduced productivity losses	Vaccination, test and cull
Johne's- discuss endemic nature and presence in large proportion of herds in NZ and that there may be benefit from a sustained annual test and cull policy (5-6 years), consider individual milk testing. Discuss the need to reduce transmission as well as test and cull (effluent/ colostrum etc.)	May be benefit from a sustained test and cull policy. Improved AW outcomes, reduced wastage/ culling, production losses	Test wasting animals even on farms where farmer does not think they have Johne's Individual milk testing and use of LICs Johne's Dashboard Test 100% of lactating animals in Feb/March and cull all positives/ high positives. Animals not tested are a risk. Discuss re-testing suspects and culling daughters
When animals are being treated or held on the yard ensure they have a companion	AW outcomes, social license, cow behavior, human/ animal safety	Staff training, included in SOP. Use of a "sick mob" where animals can recuperate together
Bio-security- discuss farm biosecurity considering risk[46], taking into account a closed/ open herd system, species of animals and regional location[47]. Focus on specific diseases relevant to their farming system	May prevent importation of disease, and/ or reduce production losses with increased incidence of disease	Have signage at farm entry points to remind visitors of their obligations. BVD test and control programme. Culling PIs, vaccination; Johne's parasite resistance, Lepto, ticks, etc.
At least daily observation of dry cows should be undertaken with action taken when indicated	AH outcomes, accurate, prompt diagnosis and treatment reducing duration and severity of disease. Early identification of herd level issues	Grazier/ staff training. Standard approach for treatment including NSAID and LC antibiotics for mastitis
Have an established euthanasia plan with contact details for all classes of stock	AW Outcomes, social license, staff job satisfaction	In SOP/ recorded and available for all staff including a backup if primary person unavailable
Euthanasia should be carried out as soon as practical and animals that are to be euthanized should not be left overnight	AW Outcomes, social license, staff job satisfaction	Staff training/ SOP. Multiple trained personnel at any one time. Compliant and maintained euthanasia methods available (gun license, gun maintained, correct ammunition for class of stock). Animals always assessed for effectiveness of euthanasia before being left

[46] https://www.dairynz.co.nz/biosecurity/biosecurity-support/evaluating-biosecurity-risks/
[47] https://www.dairynz.co.nz/biosecurity/

Pain Management

Improved pain management results in better AW outcomes, reduced severity and length of disease, improved staff job satisfaction and reduced culling.

Good farming practice	Benefits	On farm actions- examples
Manage animals to reduce pain such as minimizing walking distance for lame animals, having water and adequate nutrition cow side for sick/ painful animals, minimizing pain using aids such as cow blocks, routine use of NSAID	Improved AW outcomes, social license, reduced duration and severity of disease, reduced negative production impacts and culling, increased cures. Farmers are usually supportive of the use of NSAID as standard. Increased survivability	Have a known and implemented pain management plan (SOP or in AWP). Vet prescription allows for routine use of NSAID. Staff training.
Discuss when pain relief will be used[48], [xliii, 49]e.g. LS ≥2, mastitis, metritis and what drug will be used when including for routine calf management	Improved AW outcomes, social license, reduced duration and severity of disease, reduced negative production impacts and culling, increased cures. Reduced use of anti-biotics in mastitis. Improved staff job satisfaction	Staff training, and in relevant SOPs. Included in PAR visit, calf NSAID considered e.g. for scours
Discuss how a preventative health approach reduces disease and hence pain e.g. effective teat spraying for mastitis, early identification and treatment for lameness etc.	Reduced incidence of disease. Labor saving, improved staff job satisfaction. AH outcomes improved	A preventative health focus. Staff training on preventing disease, colostrum management, husbandry, lameness, milking and nutrition management, risk factors and mitigations

[48] https://pubmed.ncbi.nlm.nih.gov/22664209/

[49] ttps://www.dairynz.co.nz/news/breaking-the-lameness-cycle/#:~:text=Manage%20the%20pain&text=One%20UK%20study%20showed%20that,only%20a%20hoof%20trim2.

Mortality

Having an accurate and complete records enables farmers to calculate accurate death rates. These can then be used to understand if levels of morality on their farms are acceptable.

Good farming practice	Benefits	On farm actions- examples
Reduced mortality rates for youngstock	Improved animal welfare outcomes, improved efficiency, reduced replacement rate needed	A preventative AWP in place, good disease monitoring, prompt identification, investigation, diagnosis, and treatment of disease with a focus on biosecurity Date integrity to know real time disease incidence Prompt action when trigger levels are reached <5% pre-weaning mortality
Reduced Mortality rates for adult stock	Improved animal welfare outcomes, improved efficiency, increased ability for discretionary culling	A preventative AWP in place, good disease monitoring, prompt identification, investigation, diagnosis, and treatment of disease with a focus on biosecurity Date integrity to know real time disease incidence Prompt action when trigger levels are reached <2% for other stock classes

Animal Wellbeing and Behavior

Animal well-being, including the ability for animals to show positive natural behaviors, is becoming a core consumer requirement. This AWP considers animal behavior throughout. Fonterra anticipates increased future focus on animal well-being, the following table identifies areas where change may occur.

Good farming practice	Benefits	On farm actions- examples
Enrichment of cow's environment e.g. cow brushes/ sprinklers etc.	AW outcomes Social license	Provision of cow brushes in barn/ paddock
Increased focus on an animals' agency including interactions with other animals and humans, novelty, variety, rest, and play	Animals experience[50]	Ability to choose- feed variety, friend group, lying areas/ substrate, novel activities, grazing location, activities e.g. use of brush, stand in shade etc.

[50] https://www.animalbehaviorandcognition.org/uploads/journals/17/AB%26C_2017_Vol4(4)_Marino_Allen.pdf

Delayed calf removal from the dam	To be determined	To be determined
Increased minimum age of transport	Calf robustness in transit, improved AW outcomes	To be determined
Calf fate	Profitability by breeding calves suited to a determined use e.g. use of appropriate beef genetics	Targeted breeding programme
Use of sexed semen	Reduced need for replacement calves	Targeted breeding programme, including sexed semen

Use of sensor data

For farms with sensor data (collars, bolus, other), this should by assessed by veterinarians with the relevant expertise to inform farm management and discussion throughout the AWP consult.

Good farming practice	Benefits	On farm actions- examples
Pre-mate cycling/ days to first heat	Provided predictive indicator of likely reproductive performance and facilitates intervention when needed	
Nutrition, including transition management	Enables real time insight into individual and herd nutrition, facilitates herd level intervention from individual animal insights	Assess rumination rates, eating rates, production variables, movement patterns etc.
Health	Identification of disease and interpretation of causation. Earlier intervention reducing severity and production/ mortality/ financial impacts of disease. Ability to use individual animal insights to minimize herd impacts through changes to farm management	
Reproduction	Additional data to identify real time to observed change, can enable quick mating management change in response	Cycling, conception rate, non-return rate, return intervals etc.
Milk Production	Early indicator of impacts of change- farm management, feed quantity/ quality/ environmental conditions, seasonal change etc.	Identification of changes to KgMS/ composition/ volume