

# RUMINAL ACIDOSIS RISK ASSESSMENT

For assessing factors affecting rumen function and risk of acidosis in cows.

Healthy, efficient rumen function is the cornerstone of dairy production. There are many factors including herd, feed and feeding management that affect the risk of cows becoming unwell with ruminal acidosis.

Ruminal acidosis impacts on cow productivity, health and welfare. This tool will help you identify high risk factors for ruminal acidosis on your farm, so you can consider actions that may reduce the risk.

For each factor under 'herd', 'feeds' and 'feeding management', highlight the statement which best describes what currently happens on your farm. Consider each factor for which you are high or moderate risk and how you may possibly be able to reduce the risk level.

## Herd

LOW risk Green zone	MODERATE risk Orange zone	HIGH risk Red zone
Small variation in cow liveweight within the herd		Large variation in cow liveweight within the herd (mixed breed herd or high proportion of heifers)
Many older cows in herd		Many first calvers in herd
Many mid-late lactation cows in herd		Many freshly calved cows in herd
Small variation in days in milk (as per seasonal calving herd)		Large variation in days in milk (as per split or year-round calving herd)
Cows not exposed to cold, wet, windy weather conditions	Cows exposed to some periods of cold, wet, windy weather conditions but constantly provided with forage	Cows exposed to persistent cold, wet, windy weather conditions with periods without access to forage for >2 hours
Cows not subjected to hot weather conditions at all or not subjected to heat stress during hot weather conditions	Cows subjected to some periods of moderate/high heat stress during hot weather conditions but have a heat stress management plan in place	Cows subjected to long periods of high/severe heat stress during hot weather conditions but do not have a heat stress management plan in place

## Feeds

LOW risk Green zone	MODERATE risk Orange zone	HIGH risk Red zone
Maize/sorghum/barley	Grain blends containing >50% wheat/triticale	Triticale/wheat
Grains coarsely ground – minimum powder seen in dairy when grain fed		Grains finely ground – powder seen in dairy air when grain fed into bins
<3kg grain/concentrate fed per cow per feed	3–5kg grain/concentrate fed per cow per feed	> 5kg grain/concentrate fed per cow per feed
Quantity of grain/concentrate fed per day = <25% of total DMI	Quantity of grain/concentrate fed per day = 25–40% total DMI	Quantity of grain/concentrate fed per day ≥40% of total DMI
>36% NDF in total diet	32–36% NDF in total diet	<32% NDF in total diet
75% of fibre sources in diet are >1.5cm length in PMRs/TMRs	65% of fibre sources in diet are >1.5cm length in PMRs/TMRs	<50% of fibre sources in diet are >1.5cm length in PMRs/TMRs
Forage: concentrate ratio of diet 60/40	Forage: concentrate ratio of diet 50/50	Forage: concentrate ratio of diet 40/60
Adequate protein in diet (>18% CP)	16–18% CP	Inadequate protein in diet (<16% CP)
Longer stem, mature pasture		Young, lush, leafy, rapidly growing pasture- e.g. ryegrass at 1–2 leaf stage, high vegetative legume or herb
No low pH silages or acid-dump feeds (e.g. corn gluten) fed		Significant amounts of low pH silages or acid-dump feeds (e.g. corn gluten) fed
No high starch by-product (bread, cereal meal, potatoes etc.) fed	High starch by-product (bread, cereal meal, potatoes etc.) included as component of concentrate or PMR/TMR and fed at up to 10% total DMI	High starch by-product (bread, cereal meal, potatoes, etc.) included as component of concentrate or PMR/TMR and fed at >10% total DMI
No high sugar feeds fed	Supplementary sugar fed in dairy	High sugar by-products fed
Forages and high fibre by-products kept dry during storage and feed-out		Forages and high fibre by-products allowed to get wet during storage and feed-out (mycotoxins)
Wet feeds e.g. grape marc, veggie waste, brewers grains fed within 7 days of delivery to the farm		Wet feeds e.g. grape marc, veggie waste, brewers grains, etc. not fed within 7 days of delivery to the farm
Risk level appropriate buffers, neutralising agents and rumen modifiers included in diet at adequate feeding rates/cow/day		Risk level appropriate buffers, neutralising agents and rumen modifiers not included in diet at all or at inadequate feeding rates/cow/day

## Feeding management

LOW risk Green zone	MODERATE risk Orange zone	HIGH risk Red zone
Pasture only or TMR feeding system	PMR feeding system	Bail feeding system
Cows put onto ryegrass pasture at $\geq 3$ leaf stage in winter, $\geq 2.5$ leaf stage in spring/summer	Cows put onto ryegrass pasture at 2–3 leaf stage in winter, 1.5–2 leaf in spring/summer	Cows put onto ryegrass pasture at 1–2 leaf stage in winter, 1–1.5 leaf in spring/summer
Low proportion of legume/herbs in diet		High proportion of vegetative legumes and herbs in diet
High proportion of mature C4 pastures or C4 grazing crops in diet	High proportion of vegetative C4 pastures	
Good control over the quantities of grain/concentrate dispensed to each cow by the dairy feeding system		Poor control over the quantities of grain/concentrate dispensed to each cow by the dairy feeding system
Grain/concentrate feeding 3 $\times$ per day in dairy	Grain/concentrate feeding 2 $\times$ per day in dairy	Grain/concentrate feeding 1 $\times$ per day or every second or third day in dairy
If feeding >6kg DM of concentrate per cow per day, quantity over and above first 6kg is fed via PMR	If feeding >8kg DM of concentrate per cow per day, quantity over and above first 8kg is fed via PMR	If feeding >8kg DM of concentrate per cow per day, quantity over and above first 8kg is not fed via PMR
Little separation of feed ingredients and additives by the dairy feeding system		Significant separation of feed ingredients and additives by the bail feeding system in dairy
Variable grain/concentrate feeding rate to cows in dairy		Flat feeding rate to cows in dairy
Increases to the amount and types of feed made gradually		Increases to the amount and types of feed made abruptly
Cows are allowed to go straight to forage after milking	Cows are held back for 15–60 minutes from forage after milking	Cows are held back for >60 minutes from forage after milking
Cows always have access to forage when not being milked	Cows periodically run out of forage or pasture	Cows are utilising a high proportion (>80%) of pasture on offer or all of PMR.
Evidence of overgrazing		
Cows are not hungry when given unrestricted access to large amounts of feed in paddock or elsewhere		Cows are hungry when given unrestricted access to large amounts of feed in paddock or elsewhere
Pre-calving transition cows and heifers are fed a diet including half the quantity of concentrate they will be fed post-calving for 3 weeks, so their rumens are well adapted		Pre-calving transition cows and heifers are fed less than half the quantity of concentrate they will be fed post-calving and/or are fed concentrate for <3 weeks, so their rumens are not well adapted
Fresh cows are managed with a targeted feeding program with access to additional forage, reduced quantities of grain, and possibly slower fermenting grain types such as maize	Fresh cows are managed with a targeted feeding program with reduced quantities of grain only	Fresh cows go straight into the milking herd on same diet as the rest of herd
Grain/concentrates, high fibre by-products and forages are fed in multiple feeds over the 24 hours of each day using a mixer wagon/forage cart and feed pad/troughs		Grain/concentrates are fed in dairy bail only, separate to forages
Consistent daily feeding routine is used, with little variation in timing and amounts fed		Inconsistent daily feeding routine is used, with great variation in timing and amounts fed
Short intervals between feeding of forages and grain/concentrates each day		Long intervals between feeding of forages and grain/concentrates each day
TMR or PMR feed space = cow width + more than 10%/cow or >1 hay feeder per 20 cows	TMR or PMR feed space = cow width + up to 10%/cow or >1 hay feeder per 30 cows	TMR or PMR feed space = cow width or less/cow or >1 hay feeder per 40 cows
All cows are given adequate time to consume targeted level of supplementary forage		Cows are pushed off supplementary forage while still eating. Last cows milked or arriving to feed have restricted time to consume forage