

Nutri**bio** Management Information – Sheet 3

Post-Calving Metabolic Disorders

Post-calving metabolic disorders as, milk fever, retained placenta, displaced abomasum and ketosis create a management headache and have a serious economic impact for any dairy farmer. Again good records and acting on these can minimize these problems. One cannot emphasize the importance of a good dry and transition cow nutrition program to ensure a smooth transfer from the dry period to a productive lactation.

Table 1 outlines the impact of the primary disorder that can lead sequentially to secondary disorders.

Table 1.

Primary disorders that lead sequentially to secondary disorders in dairy cows

Secondary disorder	Primary disorder					
	Milk Fever	Dystocia	Retained placenta	Metritis	Displaced abomasum	Ketosis
Dystocia	X					
Retained placenta	X	X				
Metritis	X	X	X			
Displaced abomasum	X	X	X	X		
Mastitis	X	X	X	X		
Cystic Ovaries	X	X	X	X	X	X
Low conception rates	X	X	X	X	X	X

Britt, 1992

It is important to note the **domino effect** that can occur, take a retained placenta case and two weeks later the cow develops a displaced abomasum or metritis unless good records are in place the retained placenta may not be remembered as the primary cause. Another example is ketosis which one can relate excess weight loss post calving as a primary cause but it is also time sensitive. If ketosis occurs immediately after calving, subclinical milk fever could be the primary cause, if it occurs two weeks post-calving it may be due to metritis. Recording these production disorders can provide valuable information for a nutritionist and veterinarian in creating prevention programs.

Consider the economic impact of these metabolic disorders based on work conducted at Cornell University (Table 2). Consider the domino effect here in financial terms. The incidence of these disorders, is determined by the nutrition and management program of the cow over the transition period, that is the twenty days before calving. These metabolic disorders can turn up in low input systems as well as high input systems.

Table 2 Economic Impact of Post-Calving Metabolic Disorders				
	Milk Fever	Retained Placenta	Ketosis	Left Displaced Abomasum
Deaths %	4	1.5	0.5	2
Culls %	5	6	5	8
Delayed Conception, days	13	15	10	12
Discarded Milk, kgs	0	150	0	140
Lost Milk, kgs	130	250	230	400
Average Cost, \$	181	206	151	312

Source: C. Guard, Cornell University, 1998

While control over the primary risk factors can be limited, from research data reducing potassium (K) and sodium (Na) is a very positive step to take in the dry period, particularly the transition period in minimizing metabolic disorders post calving. Where grass silage is the main forage the inclusion of straw at 3kgs. per cow per day will help, also consider looking at the fertilization program. Switching to corn silage and including straw at 3 kgs. will further reduce the K & Na, but a problem can now occur with calcium. Taking grass silage at Ca =0.68% and maize silage at Ca =0.2% the calcium in the total diet can now drop from a Ca =0.57% to a Ca = 0.23% in the total diet where a requirement for Ca = 0.5% to 0.7%. Calcium is required for muscle contraction of two of the biggest muscles in the cow, the uterus and the rumen. Low calcium levels would be regarded as a secondary risk factor for displaced abomasums, affecting motility, also low calcium levels can result in retained afterbirths.

Conditioning the rumen to utilize volatile fatty acids (VFAs) post calving requires elongation of the rumen papillae, this can be done by the inclusion of cereals into the transition period.

At *Nutribio Nutrition Solutions* we can help you minimize the secondary risk factors associated with metabolic disorders which are nutritionally influenced, minimizing low blood calcium levels is one example. Our dry cow minerals have a high specification in trace elements and vitamins and additional magnesium.

Dairy Solutions Formulations:

Dry Cow:

1. Code – Superchoice Gold
2. Code - Nutribio- Precalver Super
3. Code - Transition Cow (formulated to supplement the cow pre calving and minimize metabolic disorders post calving)