



**PERFORMANCE PRO-BIOTICS**  
DIRECT-FED MICROBIALS

# 'FIRE UP' THE START OF LACTATION

[www.performanceprobiotics.com](http://www.performanceprobiotics.com)

Last Updated **N. Brazier** | January 2010

**Calving is an enormous challenge, at a time when the cow's annual performance is being set. Problems at this time will impact her productivity for the year, her health and her ability to go back in calf. The onset of colostrum and milk production increases requirements for energy and protein as well as calcium, phosphorus, magnesium and vitamins and trace minerals. As a result, metabolic systems are stretched and the immune system is compromised. Additionally, appetite is depressed at the same time as there are extreme dietary changes. An appropriate springer diet will "fire up" the cows system in preparation for calving and enable her to meet the challenges of the new lactation head on.**

## **THE CHALLENGES**

1. While only 5-7 % of cows show signs of clinical milk fever, it is estimated that 66 % of cows actually suffer from subclinical milk fever because at calving a cow will lose 9 times the amount of calcium in her entire blood calcium pool.
2. The contraction of smooth muscles is highly dependent upon optimum calcium levels. Strong performance of smooth muscles ensures that the abdominal muscles hold the abomasum in place, preventing it from twisting or moving to be trapped under the rumen.
3. Mastitis incidence is reduced by strong and timely teat end closure. (Incidentally, a milk fever cow is more than 8 times more likely to get mastitis).
4. Cortisol, a stress hormone, is released at calving and acts to suppress the immune system, increasing the risk of retained afterbirth, mastitis and metritis. Optimum calcium balance is required for cell mediated immune response, reducing immunosuppression at calving.
5. On most farms the diet of dry cows is relatively poor, at a time when appetite and intake are dropping and the nutrient requirements of both the cow and calf are rapidly increasing. The springer diet therefore needs to provide energy and protein in a nutrient dense bundle.

## **PERFORMANCE FIRE UP PROVIDES MANY SOLUTIONS**

1. Complete with anionic salts, Performance Fire Up acidifies the diet, enhancing the actions and production of Parathyroid hormone (PTH) and 1,25-dihydroxy vitamin D3 (1,25(OH)2D3). These two hormones are key to moving calcium into the bloodstream from the intestine, the bone and from the kidney.
2. In addition to its anionic qualities, Performance Fire Up also contains Hy-D, a middle product in the conversion of Vitamin D to 1,25(OH)2D3, differentiating it from many of the anionic salt products on the market.
3. Direct Fed Microbials are key inclusion of all Performance products. The probiotic component of Performance Fire Up consists of 5 bacteria (Lactobacillus acidophilus, Bifidobacterium thermophilum, Bifidobacterium longum, Streptococcus faecium, Bacillus subtilise), 3 enzymes (alpha-Amylase, Hemicellulase, beta-Glucanase) and yeast (Saccharomyces cerevisiae). These microbes significantly improve rumen function by facilitating both starch and fibre fermentation, increasing desirable microbial populations throughout the gastrointestinal tract and minimising the reproduction of pathogenic bacteria.



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## THE SPRINGER DIET

The following diet should be fed for two to three weeks prior to calving to properly prepare cows for their new lactation.

- 150 – 250 g/head Performance Fire Up (+/- according to urine pH)
- 2 – 3 kg cereal grain
- 0.5 – 1 kg canola meal (or similar)
- 3 kg good quality hay
- Ad lib cereal straw

1. Cereal grains provide high levels of energy, as well as help prepare the rumen microbial populations for the diet after calving. Additionally starch fermentation promotes the growth of rumen wall papillae, which increase surface area, thereby increasing the ability to absorb nutrients and Volatile Fatty Acids (VFAs). This results in more efficient feed utilisation, but also prevents the build up of VFAs and thus reduces the incidence of acidosis, ketosis and laminitis.
2. Protein is essential to promote appetite, before calving when intake is dropping, but also after calving thereby impacting milk production at peak, total milk production, fertility and reducing metabolic issues especially ketosis. There are also reports that dietary protein pre-calving has a positive impact on milk protein.
3. Fibre provides scratch to rehabilitate the rumen wall, promoting better absorption of VFAs. The higher the quality the forage, the better adaptation of rumen bugs and the less energy and protein required from alternative supplements. However, straw should be offered ad lib in addition to better quality forages. This is to ensure that the rumen is kept fully distended, reducing the amount of free space in the abdominal cavity and preventing displaced abomasum.
4. Urine pH is a useful tool to measure how effectively the springer diet is working for a specific herd. A more acidic (anionic) diet will create a mild metabolic acidosis within the cow's system, which will be reflected by more acidic urine (a drop in pH). The target pH for Holstein cows is 6.5 and for Jerseys is 6.0. In order to further drop the pH, slightly increase the level of Performance Fire Up, or drop it slightly to increase pH.

DACD of Ration	Urine pH of prefresh cow	Acid-base status of pre-fresh cow	Calcium status of fresh cow
Positive	8.0 to 7.0	Alkalosis	Low blood calcium
Negative	6.5 to 5.5	Mild metabolic acidosis	Normal blood calcium
	Below 5.5	Kidney overload crisis	

(from Davidson et al. 1995)



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The inclusion of Performance Fire Up provides cows with Direct Fed Microbials, Hy-D and anionic salts, as well as all minerals and vitamins required for health and performance. Performance Fire Up provides an excellent solution for optimising blood calcium status and preventing a number of potential problems at the crucial time of calving.

**FOR FURTHER FINE TUNING OF YOUR SPRINGER DIET PLEASE CONTACT YOUR PERFORMANCE REPRESENTATIVE.**

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