



## Heat stress in dairy cows – can a feed additive help?

### Effects of heat stress on dairy cattle

Global warming has become a major concern in the recent years. Environmental temperature has increased at an average rate 0.18 °C per decade in the last 30 years and is expected to increase another 0.8 – 2.6 °C by 2050. This rise in ambient temperature has major negative consequences on livestock and agriculture. Among food producing animals, dairy cattle are one the most susceptible species to heat stress (HS) due to their elevated metabolic heat production and low body surface area for heat dissipation. Heat stress is associated with a negative impact on animal welfare and productivity (Figure 1).

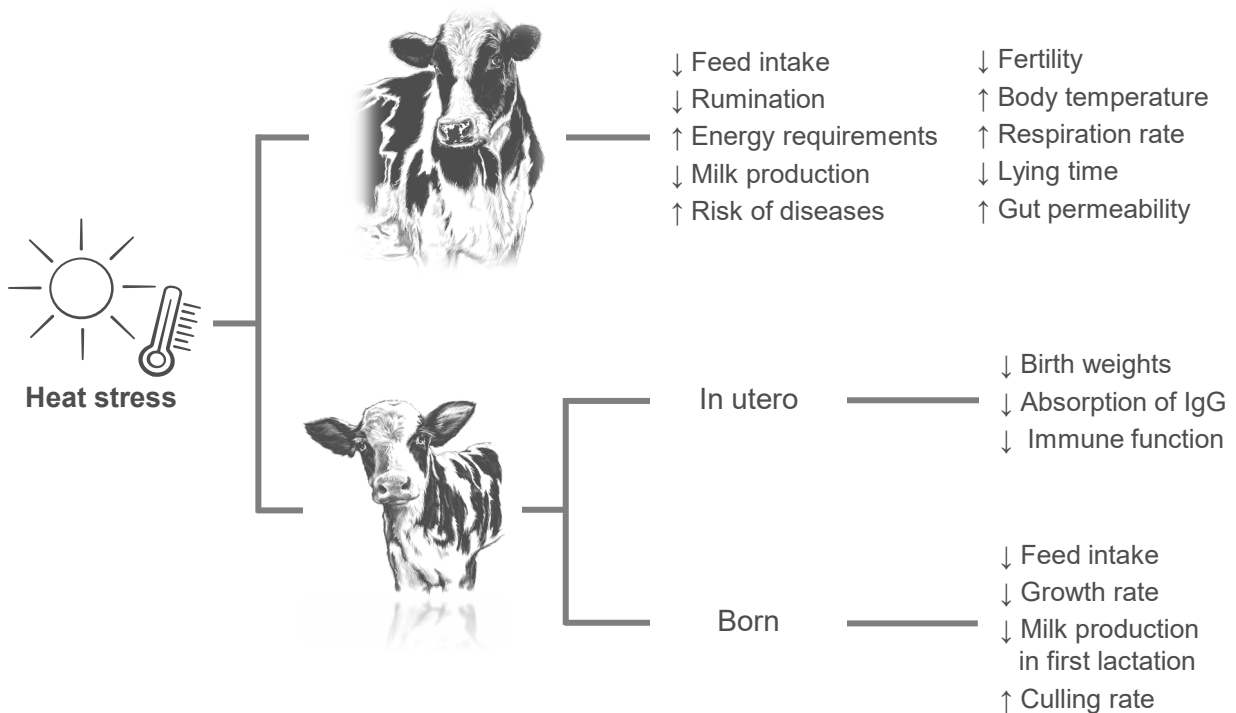
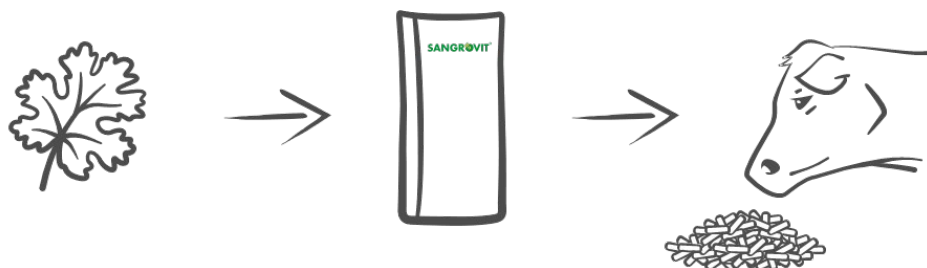


Figure 1 Impact of heat stress in dairy cows and calves

### Sangrovit®

Sangrovit® is a natural feed additive derived from *Macleaya cordata*, a plant that belongs to the *Papaveraceae* family. The active ingredients present in Sangrovit® are the isoquinoline alkaloids (IQs). These alkaloids, with documented mode of action on the digestive system, promote feed intake and support the digestibility of nutrients. Consequently, more energy and nutrients from the diet are available for maintenance and productive processes, hence supporting productivity and contributing to the overall health of the animals. Furthermore, studies in ruminants and other species demonstrated that supplementing Sangrovit® under heat stress conditions mitigates the negative impact of elevated temperatures and humidity.

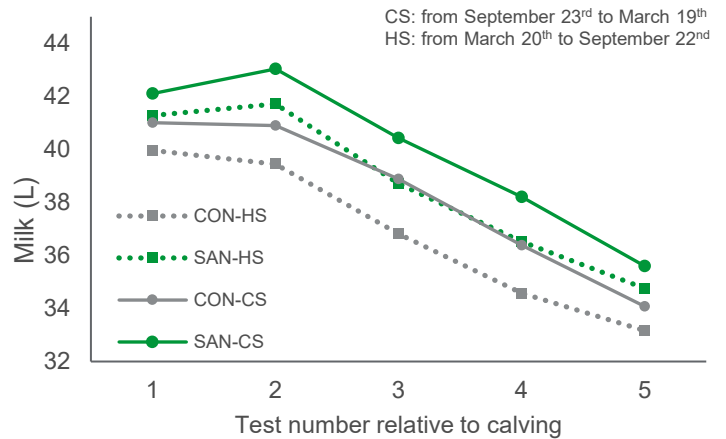


# HOT TOPIC

## Heat stress in dairy cows – assessing the effect of Sangrovit® in different seasons

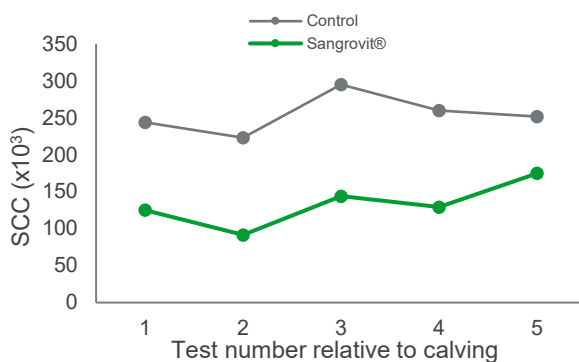
A study conducted in 30 dairy herds in France aimed to evaluate the effects of Sangrovit®, supplementation on performance of lactating dairy cows. A total of 1226 dairy cows were included in the study accounting for lactation number and milk production and somatic cell counts (SCC) on the previous lactation. Approximately 21 days prior to the expected calving date, dry cows were randomly assigned to 2 treatments. Cows in the control group (n=613) were fed the basal diet while cows in the test group received Sangrovit® (n=613) through the transition period into mid-lactation.

Overall, cows in the Sangrovit® group (SAN) produced more milk (1.72 L) than control cows (CON). Furthermore, an analysis accounting for season of the year was conducted. The hot season was defined from March 20<sup>th</sup> until September 22<sup>nd</sup> while the cold season was defined as the time frame between September 23<sup>rd</sup> to March 19<sup>th</sup>. Analysis by season revealed that, although milk yield was improved during both seasons in cows receiving Sangrovit®, a better response in milk yield was observed in cows supplemented with Sangrovit® during the hot season (Figure 2). On average, somatic cell counts (SCC) were lower for cows that received Sangrovit® than for cows in the CON group (133.0 x 10<sup>3</sup> vs 254.8 x 10<sup>3</sup>).

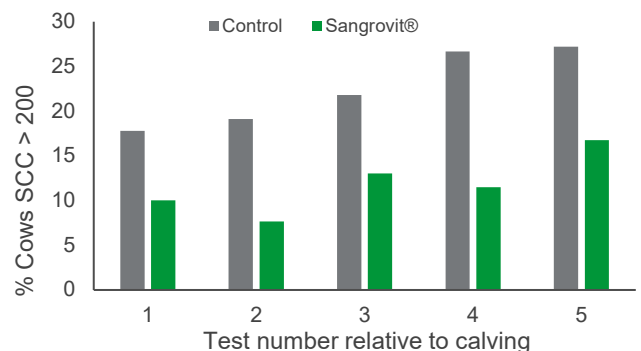


**Figure 2** Effects of Sangrovit supplementation on milk yield during the hot (HS) and cold season (CS) relative to un-supplemented control cows (CON)

Furthermore, the proportion of cows with SCC > 200,000 (indicative of subclinical mastitis) was evaluated during both seasons of the year. While reduction in the proportion of cows with SCC > 200,000 was observed during both seasons in cows that received Sangrovit® relative to control cows, the greatest reduction was observed in the spring and summer months (Figure 3; reduction in CS = 34.97%; reduction in HS = 48.03%).



**Figure 3** Average SCC for the HS and CS



**Figure 4** Proportion of cows with SCC > 200,000 during the HS



### Conclusions and Implications

Supplementing Sangrovit® during heat stress, when the drop in milk yield is more profound and somatic cell counts are more elevated, can be regarded as an effective strategy to support milk production and preserve the mammary gland.