



NEWSLETTER

Declining Forage Quality? It's Time to Rethink Dietary Energy

In recent years, producing high-quality forages has become increasingly challenging. Climate change has significantly reduced the number of suitable harvest windows, leading to several well-recognized consequences: more lignified forages, higher ash contamination in some cases, and a greater incidence of mould and yeast-related issues. Even when forage digestibility appears satisfactory, considerable variability between samples often remains.

Under these circumstances, formulating rations capable of meeting the requirements of today's high-producing dairy cows has become increasingly complex. As genetic progress continues to drive higher production potential, the role of dietary energy becomes even more critical. Consequently, greater reliance on concentrates is often required, a strategy that can only be fully effective when supported by forages with adequate digestibility.

One of the first nutritional parameters to evaluate is the **sugar content of the diet**. Dry forages, particularly those harvested at an early stage of maturity, can contribute meaningful amounts of sugars, whereas silages and late-harvested forages are frequently deficient. The ideal target is typically a dietary sugar concentration of **6–8% of dry matter**, although achieving this consistently under practical farm conditions is often challenging.

Within this context, **molasses supplementation** represents a particularly effective nutritional tool. Molasses can rapidly increase the sugar content of the ration while simultaneously improving palatability and, consequently, dry matter intake (DMI). In addition, it provides a readily available energy source for rumen microorganisms, supporting both cellulolytic and amylolytic bacterial populations and enhancing overall diet digestibility.

These benefits translate into improved feed efficiency and enhanced productive performance, often reflected in increased milk yield as well as higher milk protein and milk fat production.

Nevertheless, maintaining the correct balance between **forages and concentrates** remains essential. An ideal forage-to-concentrate ratio would be approximately **50:50**, although this target assumes the availability of high-quality forages, a condition that is not always achievable. When forage quality declines, nutritionists often increase concentrate inclusion to maintain adequate energy density within the ration. However, this approach can increase the risk of ruminal pH instability and subacute ruminal acidosis (SARA).

For this reason, particular attention should be paid to maintaining appropriate levels of physically effective fibre. Dietary **aNDFom** (amylase-treated neutral detergent fibre expressed exclusive of residual ash) should generally remain within the range of **28–30% of dry matter**, while **uNDF** (undigestible neutral detergent fibre) should be controlled at approximately **11–13% of dry matter**. Where necessary, the inclusion of buffering agents such as **sodium bicarbonate** and **magnesium oxide** can help support rumen pH stability and maintain optimal fermentation conditions.

Ultimately, when formulating rations for high-producing dairy cows, it is not sufficient to focus solely on the quantity of energy supplied. Equal consideration must be given to the **quality and availability of that energy within the rumen**. Diets based on highly digestible fibre and adequately supported by fermentable sugars are generally more efficient, promote better animal health and welfare, and contribute to greater sustainability of the production system.

In this scenario, molasses continues to demonstrate its value as a strategic nutritional ingredient, helping nutritionists optimize ration formulation and effectively manage the challenges associated with increasingly variable forage quality.