

# PASTURE INPUTS

## for optimal outputs

by Rob Phillips

To achieve optimal outputs from a dairy, it is essential to have the best inputs. In a pasture-based operation, the major inputs are pasture availability and quality, balancing the total diet and managing these inputs. Although the dairy cow can efficiently convert poor-quality inputs (such as roughages) into milk, the quality of these inputs affects the quantity of milk produced as well as the type and cost of other supplements needed to achieve the desired output.

It remains the producer's responsibility to ensure that the inputs are of the best quality possible to achieve optimal output. So, how does the pasture-based producer ensure that inputs assist the dairy cow to reach her optimal potential?

### Quality is important

Dry matter intake (DMI) is essential to achieve optimal cow performance. This remains the greatest challenge for the producer, as each pasture varies in quantity and quality, often resulting in underfeeding. Pastures are often allocated incorrectly or pasture quality may be such that the cows cannot consume what has been allocated. The producer can minimise the effect of this variability by measuring pasture availability and allocating the daily grazing





The producer can minimise the effect of pasture variability by measuring availability and allocating the daily grazing area accordingly.

## PASTURE MIXES

To improve input or DMI, the dairy cow must get the right quantity of the right quality pasture. This is achieved by grazing the pasture at the correct leaf stage and through correct pasture mixes. Consider the variances in quality of pasture species when planting and allocating pasture. A kikuyu pasture will always be of a lower nutritional quality than a ryegrass pasture. This must be factored in when determining pasture allocation. The quality of pasture can be manipulated through cultivar selection as well as mixing various species. There has been great success with mixes including perennial ryegrass, annual ryegrass, clover (red and white) and grazing chicory. Lucerne is also an option in these mixes where conditions are suitable.

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area accordingly. This is done in conjunction with the accepted norm that a dairy cow will consume 4% of her body weight in dry matter per day.

Once all supplements are removed from this DMI calculation, the remainder must be supplied in the form of pasture. Many pasture-based producers focus on maximising pasture utilisation; therefore, pastures are grazed as short as possible. This, however, is a major limitation to cow performance, as it has a negative effect on DMI. It is better to use follower stock to graze pastures to below a residual of 1 400 kg DM/ha.

To ensure the correct allocation of pasture, the producer should assess the situation himself and not rely on disc meter data. The best time to do it is around 10:00 as the cows will then start to lie down, if full. A quick assessment at this time can eliminate under- or overallocation of pasture, improving overall output. The eyes and feet of the producer or manager remain the best tools on a farm. Unfortunately, they are often underutilised.

When considering DMI, it is essential to know the roughage or neutral detergent fibre (NDF) content of the pasture, as this has a dramatic effect on intake. Pasture is often allocated with the assumption that the cow is eating because she has been allocated 12 kg dry matter pasture. Producers seldom pay attention to the NDF content of the pasture and its limitation on intake. A kikuyu pasture might have a NDF level of 10 to 15% higher than that of a perennial ryegrass/clover pasture. Since a cow can only consume 1,2 to 1,5% of her body weight in NDF, she often cannot consume the quantity of pasture allocated. Inevitably, the cow remains hungry. If the producer visited the camp, the residual pasture would have given insight into what was happening on the farm.

**Pasture quality**

It is essential to collect pasture samples monthly and send them for analysis to determine the quality. When referring to pasture quality, pasture protein and energy spring to mind. These are essential measures of pasture quality but are of no use if the cows cannot consume the pasture owing to adverse NDF and acid detergent fibre (ADF) levels. These two factors, along with lignin, are

perhaps the most important measures of pasture quality to consider. Pasture NDF affects DMI while ADF affects the digestibility of the pasture or roughage.

Roughage with a high NDF level will have a high ADF level, although they are not directly correlated. Therefore, in the case of a high NDF pasture, even fewer nutrients are available as the ADF is high. The pasture might test high in protein and energy, but the cows cannot utilise these nutrients, as the microbes cannot access them. Therefore, when given roughage with a high NDF the cow suffers a double blow. First, her intake is restricted and second, the digestibility of the roughage is lower. Not only is the dairy cow hungry, she is falling short of her daily nutritional requirements. This translates into lower output in the form of milk and possibly weight loss, especially in cows fresh in milk.

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The focus on pasture quality must always begin with NDF. If the NDF is low, pasture protein and energy levels are usually higher and will be more available. With the pasture analysis information, the producer can allocate the best pasture to the fresh cows and can ensure that the cows can consume the quantity of pasture allocated.

### Manage input

To optimise production and economic output, it is important to manage the above factors properly. The producer must enter the pasture-quality analyses and other roughage-quality data into a ration-modelling program. This tool allows for the correct balancing of the respective ration components to generate optimal returns. By using such a program, the producer can rest assured that the pasture quality information is being correctly utilised. This way, he can allocate the correct type and quantity of supplementary feed to the respective groups or individual cows. With individual cow feeding through modern electronic feeding programs, the producer can achieve optimal production, as it is easier to balance pasture quality with effective concentrate allocation per cow.

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### CONCLUSION

It is imperative to remember that the dairy cow of today is a high-potential animal with great production abilities. The inputs, in fact, restrict her outputs. The producer is in the driver's seat and the dairy cow is at his mercy. Ensure that you utilise the tools available allowing your dairy cows to reach their production potential. Once you have done this, ensure that you assess the effectiveness of your decisions personally every day.

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