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Feeding Protein meals?

In some situations it may be advisable to feed protein meals or complete mixed feeds to stock to maximize their performance. During our dry season the major limiting nutrient is usually protein and so we must feed a protein source to maximize performance. Non protein nitrogen sources such as urea are converted by the rumen microbes into microbial protein. When the microbes pass through to the fourth stomach they are digested and so this protein becomes available to the beast. Stock on pastures that have gone to seed will generally benefit from a protein supplement and when attempting to finish cattle before the dry a protein meal can be very useful. On lush green pastures energy and minerals are usually limiting and so to increase weight gain an energy source with complete minerals would be required.

Young weaners and calves have not developed a fully functioning rumen and so cannot make use of Non Protein Nitrogen. Stock under 120kg live weight are generally considered to not have a fully functional rumen. These animals need a true protein source to supply their requirements. While they may take a small amount of NPN they require true protein to maximize performance. Horses being monogastrics also require a true protein source.

True protein sources can either be broken down in the rumen and are so termed Rumen Degradable Protein or pass through the rumen undigested to the fourth stomach where they are digested, termed bypass protein. Non protein nitrogen provides a fast source of ammonia for the rumen microbes whereas Rumen degradable protein is digested more slowly and so feeds the rumen microbes over a period of time. When feeding protein meals on dry grass it is usually best to combine a rumen degradable source with a Non protein nitrogen source to supply a more constant level of ammonia in the rumen. The high energy levels available in protein meals also aid in fattening stock. Laying down fat is very energy intensive and so a high concentration of energy in the diet is required to finish cattle.

There is a lot of confusion about when people attempt to compare protein meals between different types and costs. The first issue to look at is the cost per a unit of protein. When supplementing cattle on dry grass the first limiting nutrient is usually the total amount of protein, particularly Rumen degradable protein that feeds the rumen microbes and so increases the efficiency of digestion. The cheapest form of protein for the rumen microbes is non protein nitrogen. The beast can only use a limited amount of this so if we are pushing the beast to perform then we may need to feed a true protein source. If we are supplementing on dry grass and we need to feed rumen degradable protein then avoid meals that are high in bypass protein such as copra meal. When the cost per unit of protein is similar remember that most protein meals are high in energy having an energy value similar to or higher than grain. With this in mind if cost per a unit protein is similar then comparing cost per unit of energy will show the best value meal.

Protein meals can be useful when feeding for high performance as they contain both protein and high energy and also to feed early weaned calves or when creep feeding young calves. In any feeding program do not forget to make sure there are adequate supplies of minerals available.

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