

Terms Used in Nutrition

Acid Detergent Fiber -- It includes cellulose and lignin. ADF is an indicator of forage digestibility.

As Fed -- refers to the per cent dry matter of the feed as consumed by the animal.

e.g. silage -- 30-45% dry matter as fed

hay -- 85-90% dry matter as fed

$$\% \text{ nutrient as fed} = \% \text{ nutrient basis 100\% dry matter} \times \frac{\% \text{ dry matter in feed}}{100}$$

Note: Nutrient Content of commercial feeds are provided on an AS FED basis.

Dry Matter -- a method of expressing the level of nutrients in a feed on the basis that the feed contains no moisture. This allows accurate comparison of feeds of widely different moisture content such as hay and silage.

$$\% \text{ nutrient in dry matter} = \% \text{ nutrient as fed} \times \frac{100}{\% \text{ dry matter in feed}}$$

Essential Nutrients -- substances which must be provided to the body in order for it to stay alive. There are five essential nutrients:

Energy -- provides the body with the capacity to produce heat and utilize other nutrients in growth, reproduction, milk production and fattening. Commonly expressed as TDN or digestible energy (DE). One kg TDN = 4,400 kcal of DE.

Protein -- especially important for and during growth. Made up of "amino acids" which are nitrogen containing compounds that constitute the "building blocks" from which proteins are made.

Urea in properly formulated rations can be used by rumen organisms as a source of nitrogen to produce protein.

Minerals -- the "ash" left after burning the feed under intense heat. Calcium and phosphorus are the minerals present in greatest amounts in the body. When buying mineral supplements, the first number generally refers to calcium and the second number to phosphorus. Thus, a 20:10 mineral supplement would contain 20% calcium and 10% phosphorus and be referred to as a 2:1 mineral mix.

Vitamins -- substances which in relatively small amounts are essential for life. The fat soluble vitamins (A,D,E,K) can be stored by the body. Vitamins A, D, E must be

provided. Ruminants can synthesize all other necessary vitamins.

Moisture Content – the amount of water in the feed.

Total Digestible Nutrients -- a figure which indicates the relative energy value of a feed to an animal. It is the sum of the digestible protein, digestible carbohydrates and (digestible fat x 2.25). In forages it is estimated from chemical feed analysis and is largely based on % fiber in the feed. Since fiber provides little nutritive value, TDN decreases as fiber level increases.

Water -- the most essential nutrient in terms of immediate body health.

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