ESSENTIAL PROTEIN

Protein (CP) is crucial for the health and productivity of sheep and goats, especially during growth, pregnancy, and lactation. It is also essential for muscle development, immune response, and reproductive success. Protein is more expensive than energy to feed.

Two sources of protein are available to ruminants: protein from feed and microbial protein synthesized by rumen microbes. All protein is divided into two factions: degradable and undegradable. The undegradable is also called “bypass” (or escape) protein. Rumen microbes break down degradable protein into amino acids and ammonia. Undegradable protein bypasses the rumen and is digested in the abomasum and intestines.

Barber pole worms (*Haemonchus contortus*) significantly affect protein availability in sheep and goats by causing blood loss and reducing nutrient absorption. The worms deplete the animal’s protein reserves, forcing them to divert protein from muscle, milk, and fiber production. For this reason, it can be beneficial to provide supplemental, especially by-pass protein, to grazing animals

Oilseed meals (e.g., soybean and cottonseed) are the most common protein supplements fed to sheep and goats. Distiller’s grains and alfalfa pellets are other good sources. Legume forages (fresh or cured) like alfalfa and clover are intermediate sources of protein and often preclude the need for supplemental protein for most sheep and goats. Urea is usually the least expensive source of dietary nitrogen, but there are precautions to feeding it.

All feedstuffs have portions of degradable and undegradable protein. Bypass protein offers many advantages, primarily by increasing the availability of amino acids, which can lead to improved growth rates, milk production, and overall health. Good sources of bypass protein are fish meal and oil meals. By-pass protein is most beneficial to higher producing animals, e.g., high producing dairy goat or fast-growing lambs.

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