



Making the most of your hay

By STOCKADE Brands

What can you do when your hay quality isn't the best and hay is in short supply so buying better hay isn't an option? Well, research has shown that protein supplementation can increase digestibility of low quality forages up to 10%. That's like having 10% more hay in your barn! Here's how it works...

The feed value of low quality hay is improved by digestion and conversion to microbial protein. As a rule of thumb, when the crude protein content of forages are less than 13-15%, ruminal protein output is greater than input. When feeding low quality hay, the majority of protein that the ruminants use comes from microbial protein (60% to 100%). Put simply, the ruminant is digesting the microbes. Thus the more microbes we grow, the better the ruminant does. To grow more microbes, they have to digest more hay.

With bulky, high-fiber, low-quality forages, intake is limited by the amount that can fit in the rumen at one time. The faster the bulky forage can be digested and moved out of the rumen into the lower gastrointestinal tract (rumen turnover), the faster more forages can be consumed. Quicker rumen turnover is advantageous in that more microbes are grown in the same amount of time. More microbes mean more nutrients, thus improving overall animal performance.

Ruminally available protein is a limiting factor in fiber fermentation. Remember, low quality hay contains high amounts of fiber. Protein is a key component needed for microbial adhesion to fiber which begins the fiber digestion process. Protein is also needed for the enzymes responsible for breaking down fiber. Additionally, inadequate dietary protein depresses appetite, reducing the amount of fiber available for the microbes to eat. For all of the stated reasons, protein supplementation improves the microbes' ability to digest low quality forages and increases forage intake, which in the end increases the number of microbes available for digestion by the ruminant.

As far as the microbes are concerned, it doesn't matter if this protein comes from natural protein sources or NPN. In fact, research has shown that microbes digest fiber in low quality hay moderately better with the addition of NPN-containing protein supplements vs. all natural protein supplementation. This is because 100% of NPN is ruminally available, while not all of the natural protein is ruminally available to the microbes. However, both NPN-containing and all natural protein supplements improved fiber digestibility over hay alone.

Just as you and I like three regular meals and between meal snacks throughout the day instead of one huge meal, rumen microbes respond better to small regular doses of protein rather than slug feeding once a day or less frequently. Research repeatedly shows that regular daily supplementation of protein yields better results than less frequent protein supplementation. Studies conducted at Kansas State University reflect this. In one study, reducing feeding frequency resulted in cows losing more weight during the winter. In another, daily supplementation was shown to improve forage intake and digestibility as opposed to twice a week supplementation. Research shows that it doesn't take much protein to enact a positive influence. Supplementation with limited amounts of a high protein supplement increased digestibility and intake of lower quality forages in numerous studies.

While protein is very important, don't forget minerals! These ruminal microbes also require minerals. At the same time, your sheep, goat or cow requires proper mineral nutrition for immunity, hoof health, growth and reproduction. While most livestock receive adequate minerals and vitamins from hay and pasture to survive, the vast majority are not receiving what they needed to thrive and are in various states of nutritional deficiency. An important point to remember is that the mineral content of forages is limited by the mineral make-up of the soils on which they grow. If it's not in the soil, it can't get into the plant. And while soil types vary, no one soil type provides optimum levels of all the minerals needed. In fact, some soils are severely deficient in some minerals or have an overabundance of a mineral that interferes with the bioavailability of another mineral. For this reason, it is commonly recommended to provide free choice mineral and vitamin supplementation to livestock at all times.

In a perfect world, one would take forage samples to obtain the mineral make up and then have a custom mineral manufactured that perfectly matches your needs. However, this isn't feasible to the average producer. Luckily, STOCKADE® offers a wide variety of protein and mineral/vitamin supplements so that you can mix and match to best meet the needs of your livestock.

When it comes to providing supplemental protein and minerals and vitamins to your cattle, sheep or goats for the purpose of stimulating microbial forage utilization and intake, there is no better method than use of one of the self-fed STOCKADE® protein

supplement blocks. STOCKADE® offers a wide variety of products in either a large tub or pressed block form –whichever best fits your management style and animals’ needs. STOCKADE® manufacturing technology results in high quality blocks with consistent hardness and intake, resulting in animals consuming small, regular doses of ruminally available protein throughout the day. This continuous delivery of protein to rumen microbes results in optimum forage digestibility.

In summary, dietary protein and minerals and vitamins are key in the microbial digestion of low quality forages. Research confirms that regular, daily intake of even a small amount of protein helps aid forage digestibility. STOCKADE® self-fed, supplement blocks deliver supplemental protein in a convenient, self-fed, no-waste form. These blocks in conjunction with a quality STOCKADE® mineral supplement will create a comprehensive supplement program.

Contact your local dealer for more information about availability or call 800-835-0306.