

Feed additives for cattle on pasture

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Beef producers have many options available to include in beef cattle diets that can offer many benefits in a small package. These feed additives can function to improve production, feed efficiency, and even animal health. Although most typically think feed additives are used in feedlot operations, their usefulness in grazing cattle (both stocker or cow/calf systems) is well documented. For cattle on pasture, the most commonly used feed additives function to improve feed efficiency and growth or to reduce the incidence of bloat, illness, or parasites. It is extremely important that label directions are followed explicitly for medicated feed additives, and withdrawal times are strictly adhered to. Feed additives can be classified into several broad categories: rumen fermentation modifiers, animal health products, and direct-fed microbials.

Ionophores fall into the category of rumen fermentation modifiers, and their function is to modify the microbial population in the rumen. These antimicrobial compounds inhibit some microbes in the rumen, selecting for those which are more efficient or produce products that are more efficiently used by the animal. By altering this microbe profile, the type of volatile fatty acid produced in the rumen is altered, and less methane is produced. This results in improved feed efficiency and improved weight gain. In addition to these benefits, ionophores also reduce the incidence of coccidiosis, acidosis, and bloat. Specifically in stocker cattle, the use of ionophores has been shown to increase ADG by 5 to 15% and improves feed efficiency by 8–12% (Lawrence and Ibaruru 2008). Currently there are several commercially available options. Monensin has the trade name Rumensin®, lasalocid has the trade name Bovatec®, and laidlomycin propionate has the trade name Cattlyst®. These are often purchased pre-mixed into minerals or supplements.

Feed additives that affect animal health can be further split into several categories: antibiotics, fly control, and parasite control. Feed through antibiotics have received a lot of press as of late due to the implementation of the veterinary feed directive (VFD), and the removal of the low dose label claim for improved weight gain. Under veterinary supervision, antibiotics may be used to treat or prevent scours, coccidiosis, shipping fever, anaplasmosis, and liver abscesses. Chlortetracycline (CTC) is one popular choice for antibiotics in feed.

Feed through fly control products can be included in a feed or mineral supplement for cattle on pasture. These may be referred to as insect growth regulators (IGR). With this method, an insecticide designed to prevent larvae from reaching maturity is mixed into a feed or mineral source for the cattle to consume, and works best if it is fed before the adult flies begin to emerge. The major benefits of the feed through option are attributed to its application method. Since the fly control is present in the feed or mineral, there is little extra labor or stress for the cattle. Some disadvantages of this option include consumption variability, the product is not effective if cattle do not consume it in adequate amounts, and fly transfer, if cattle are near other animals not treated for flies, and it is likely that adult flies will transfer to the treated herd. It is important to remember that these feed through products reduce fly counts by interrupting the life cycle of the fly, not by killing adult flies.

Currently there are several options for feed additives which control internal parasites of cattle. These anthelmintics (dewormers) are available as pellets, protein blocks, molasses blocks,

mineral supplements, or as a supplemental feed top dressed onto a ration. This form of dewormer is advantageous when gathering cattle for routine deworming strategies is difficult or impossible. However it is important to remember that as with other feed additives, effectiveness is entirely dependent on animal consumption. In other words, the product will not work if cattle will not eat it in proper amounts.

Direct-fed microbials are another classification of feed additives for beef cattle. The FDA defines direct-fed microbial as “a source of live, naturally occurring microorganisms”. Several studies suggest that the addition of a direct-fed microbial to diets of stressed stocker calves can improve both health and performance. These stressed calves may suffer from an altered microbial population in the rumen and lower gut which can affect health and performance. Most commonly, direct-fed microbials contain bacteria known as lactobacilli with *Lactobacillus acidophilus* being one of the most common microorganisms used. Fungal cultures, such as *Aspergillus oryzae*, are also often used in direct-fed microbials.

Regardless of the type of feed additive used on your farm, it is very important to use feed additives responsibly and to follow all label directions and withdrawal times. Remember that medicated feeds are regulated by the FDA, and pesticides are regulated by the EPA. A list of current approved feed additives can be found on the FDA Approved Animal Drug Products Online database (<http://www.accessdata.fda.gov/scripts/animaldrugsatfda/>).

Be sure that medicated feeds are stored properly and expiration dates and withdrawal times are strictly adhered to. All feed additives will be accompanied by label instructions for feeding and associated warnings. Be very careful not to mix feed additives that are not approved to be fed in combination. Only used feed additives at labeled dosage, and for the recommended class of cattle. When used properly, feed additives offer tremendous benefits to stocker cattle producers. Be sure to do your homework and choose the feed additive that best fits your operation’s needs.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit extension.msstate.edu/beef.

References:

Feed additives for beef cattle diets. <https://extension.msstate.edu/sites/default/files/publications/publications/p2518.pdf>

Hersom, M., T. Thrift, and J. Yelich. 2011. The Impact of Production Technologies Used in the Beef Cattle Industry. <http://edis.ifas.ufl.edu/an272>

Krehbiel, C. R., S. R. Rust, G. Zhang, and S. E. Gilliland. 2003. Bacterial direct-fed microbials in ruminant diets: Performance response and mode of action. J. Anim. Sci. 81(E. Suppl. 2) Online. Available: http://www.journalofanimalscience.org/content/81/14_suppl_2/E120.full

Lawrence, J.D., and M.A. Ibarburu. 2008. “Economic Analysis of Pharmaceutical Technologies in Modern Beef Production.” <http://www2.econ.iastate.edu/faculty/lawrence/pharmaeconomics2006.pdf>