

# MANAGING CATTLE AND HORSES TOGETHER

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Cattle and horses can very effectively be managed together in a pasture setting. Often, resource availability and efficiency dictate the need to have the two species co-mingle, which can be done successfully. However, there are some considerations between the two that must be reviewed to ensure the health and well-being of both animals are being met.

Horses and cattle are similar in that they both are herbivores that thrive on roughages and need access to water, but when it comes to their digestive systems, they vary greatly. Horses are non-ruminants, having a single stomach. Cattle are ruminants, having multi-compartment stomachs. Horses are hindgut fermenters, and cattle are foregut fermenters. When comparing the two species, the digestive differences really culminate in cattle, as they are much better at extracting nutrients from their feed than horses and do not necessarily need high-quality feed to thrive. This, of course, is all relative. Certainly, any animal in high production, like late pregnancy, lactation, and growth, will need a higher-quality feed or supplementation to provide for its nutritional needs.

## IONOPHORES

Ionophores were developed as an anticoccidial medication, but it was later discovered that they also had non-therapeutic antibiotic properties that can alter cellulose digestion by reducing by-products of digestion. This can result in reduced methane production and enhanced energy absorption in cattle. Products such as monensin sodium (brand names Rumensin, Lasalocid, and Naracin) are added to some cattle feeds and supplements (generally those designed for beef cattle in cattle finishing operations) to aid in feed conversion and weight gain. Ionophores can be added to minerals, molasses-based products, and manufactured feed or



pellets. If feeds contain ionophores, the feed will be marked as a medicated feed, and it is labeled to be fed to most classes of cattle on pasture or in a dry-lot feeding program.

Ionophores are extremely toxic to horses. In one study, doses of monensin of only 1.0 to 3.0 milligrams (mg) per kilogram (kg) of equine body weight were enough to kill more than 50 percent of the horses to which they were administered. If managing the average 1,000-pound horse, this means that 50 percent of those that consume approximately 455 mg of Rumensin would be expected to die. The highest rate of inclusion allowed in cattle rations is 360 mg/head per day and recommended at 50 to 200 mg/head/day. This means that an adult horse would have to eat a very large amount of a cattle ration with ionophores for it to be toxic. However, it is still strongly recommended to not allow horses to ingest feed or supplements that contain ionophores. Consumption of ionophores in low doses may not result in death, but the side effects are undesirable and possibly cumulative if the horse ingests cattle feed with ionophores over time. Symptoms include decreased feed intake, weight loss, unthriftiness, fatigue, and possible cardiac and skeletal muscle damage. Horses that have experienced cardiac muscle damage from ionophore ingestion may not recover even after ionophores have been removed from the diet, hence diminishing their ability to perform.

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The greatest concern with ionophore use results from unintentional mistakes made during manufacturing. Accidentally high doses of ionophores in feed can turn deadly for horses. Cattle supplements can also have a more concentrated amount of ionophores and should also be avoided. Horse owners are encouraged to purchase feed from reputable feed manufacturers who have quality control measures to ensure ionophores do not get into horse feed, especially if they mill feed for cattle too.

## UREA

Urea is a non-protein nitrogen compound that is a very cost-effective protein source for cattle rations. Due to the digestive design of cattle, the nitrogen in urea can be used as a building block for protein by the rumen microbes.

Contrary to popular belief, horses are not nearly as sensitive to urea as once thought. In fact, ammonia toxicity from urea consumption is less likely to occur in horses compared to cattle. However, urea is not as useful to the horse as it is the cow because protein is degraded and absorbed in the stomach and small intestine of the horse, and very little of the nitrogen in urea can be utilized and absorbed by hindgut microbes. Most urea is filtered through the kidneys and excreted in the urine by the horse. Even though urease activity in the equine cecum is ~25 percent that of the rumen, caution should be exercised when feeding horses urea. Studies have found that dosages of  $\geq 4$  grams (g)/kg can be lethal in the horse. In a 1970s study, mature ponies of 124 to 136.0 kg (~300 pounds) body weight were given 450 g (0.45 kg) urea (diet consisting of 25 percent urea), and seven of the eight ponies died. A safe inclusion rate of urea in the horse diet for a mature, stock-type breed of horse is yet to be elucidated.

Cattle diets containing urea are likely substandard for horses in available protein and amino acid content. This is especially true for growing animals and broodmares that are in the third trimester of their pregnancy or lactating.

## MINERAL LICK TUBS

Mineral lick tubs are effective supplements of essential minerals that help address forage deficiencies in cattle. They often contain a high percentage of molasses to encourage the animal to ingest the minerals. Horses also enjoy eating molasses, but substantial time spent at the lick tub can create problems. Horses are sensitive to starch and sugar overload by design since highly fermentable feedstuff in the hindgut can result in toxicities. In these cases, laminitis (founder) and/or colic



are often the result. When lick tubs are present, horses should be observed closely. If the horse spends a large amount of time at the lick tub, they should be removed. Horses with metabolic disorders should not be allowed access to lick tubs with molasses due to the high sugar content. Horses are also known to run cattle off from the lick tub, which is not desirable.

## CUBES

Range cubes are often made from grain by-products and are generally used to supplement cattle with protein, vitamins, and minerals when foraging poor-quality pasture or hay. They can also be fed to horses, and this is a somewhat routine practice in certain areas where animals are fed cubes once or twice a week. It is recommended that horses not be fed supplemental feed on an irregular basis due to the digestive upset that can occur. However, the carbohydrate content of cubes is relatively low, and horses are usually okay to eat them on an irregular basis when fed according to labeled instructions. First and foremost, make sure that range cubes do not contain cattle additives that could be harmful to horses.

## GRAZING PATTERNS/HABITS

Horses are selective grazers, meaning they prefer certain areas to graze while leaving other areas alone. This can be wasteful with pasture resources. Since cattle are less selective about where they graze, running the two species together can be advantageous and result in more uniform use of the pasture.



In addition to their selective grazing patterns, horses have both upper and lower arcades of teeth, so they can easily crop grasses and graze close to the ground. This can exasperate the closely grazed areas horses tend to keep to. Cattle, on the other hand, do not have upper incisors, so they use their tongue to grasp taller grass and then rip it once it has been pinched by the upper and lower jaws. Therefore, cattle cannot eat close to the ground like a horse. The two species together can really maximize pasture resources.

It should be noted that fescue is a popular plant species for grazing cattle due to its hardiness. However, it is not a safe forage for broodmares in their last trimester. A common endophyte that infects fescue can cause pregnancy complications, including prolonged gestation, thickening of the placenta, dystocia, and insufficient milk production. Broodmares should be removed from fescue pastures prior to the last trimester of pregnancy.

## INTERNAL AND EXTERNAL PARASITES

Thankfully, cattle and horses do not play host to the same intestinal parasites, so grazing them together will not contribute to the parasite burdens of each other. Cattle may be helpful in breaking up horse feces in pasture areas where horses avoid grazing, which can help expose eggs and larvae to the environmental elements and, therefore, reduce reinfection of horses.

External parasites are a greater concern for both cattle and horses, especially flies. Cattle tend to attract more flies, and horses can become more afflicted when pastured with cattle. The horn fly is especially problematic. The male and female horn flies both take up to 20 to 30 bloodmeals a day. The adult horn flies stay in continual contact with the cattle, resting on them between feedings. Some pour-on insecticides used on cattle are also labeled for horses and can be very effective for more prolonged fly control than the traditional fly spray or salves. Caution should be exercised if pour-on chemicals are used on skin areas



where tack is used with the horse, such as under the cinch and saddle pad. Also, pour-on applications that are oil based can be problematic for some horses during the summer when the sun can burn oiled skin.

## FENCING

The best fencing for horses is that which is smooth and in good working order; however, that is not always practical when managing cattle too. Cattle most often need to be confined with barbed wire or other fencing topped with a strand of barbed wire. A hot wire can be run on the interior of a barbed-wire fence to deter horses from becoming tangled. Strategically placing animals on both sides of the fence with adequate space for the herd size will minimize injury and destruction. Bulls on one side and open cows on the other side will require a robust fence line. Likewise, stallions separated from mares with a barbed-wire fence is a recipe for disaster. Horses also have a propensity to get impaled by t-posts, which are commonly used for wire fencing. Simple caps can be purchased to cover the tops of t-posts to reduce injury.

Most fence-related injuries in horses occur with horses that are turned out in pastures on an irregular basis. Horses raised and routinely managed in pastures designed for cattle are much less prone to injury than those periodically turned out on pasture.

## OTHER CONSIDERATIONS

Horses and cattle typically co-mingle well, and some animals even find herd comfort with one another, especially if a single horse is pastured with a herd of cattle. Horses pose more risk to young calves that might become too curious and get kicked. Bulls can sometimes be more aggressive with horses and should be monitored closely. Caution should be exercised when managing cattle with horns and horses. They should never be placed in confined areas together to avoid a horse getting gored.