

### Multi-species Grazing

Multi-species grazing is the practice of using two or more livestock species together or separately on the same pasture-land in a specific growing season. Different species of livestock prefer different forages and graze them to different heights. Cattle tend to be intermediate grazers. They graze grasses and legumes and bite with their mouth and tongue. Sheep and horses graze closer to the ground than cattle. Sheep and goats eat forbs (brushy plants with a fleshy stem) and leaves better than cattle or horses. Many weeds in a grass pasture are forbs. Cattle and horses tend to graze grasses better than small ruminants such as sheep and goats. Goats are browsers and prefer to graze/browse with their heads up. "Browse" are the tender shoots, twigs, and leaves of trees or shrubs that are acceptable for grazing. Goats browse like deer if given the opportunity. They will eat higher growing plants such as forbs and shrubs as well as high-growing grasses. With their mobile upper lip, goats can select individual leaves and strip bark off of woody plants. Their unique lip allows them to eat the parts of a plant that are highly nutritious while leaving behind the less digestible parts such as the thorns and branches of blackberries and multi-flora rose. Both goats and sheep will eat weeds although goats prefer browse more than sheep.

Brush and weed management is the most noticeable benefit that producers see from multi-species grazing with cattle and small ruminants. Although research indicates that multi-species grazing can contribute to more efficient and uniform use of pastures, the results will vary with the type of pasture. Land that includes grasses, forbs, and browse are best utilized with multi-species grazing. Land that is uniformly in grass may best be utilized for cattle or horse production. Multi-species grazing can improve utilization of forages by less than 5% to more than 20%, depending primarily on the type of vegetation on the land and the mix of animals used.

In past times, cattle and sheep have usually been the combination used for multi-species grazing. This practice, in part, was due to greater multi-species grazing in western states where there is greater diversity of plant species and elevation of land than in eastern states. However, with the increase in popularity of goats, they now are often used with multi-species grazing. Horses also may work well with goats in a multi-species grazing scheme.

Varying terrain also lends itself to multi-species grazing. If the terrain is steep and rough, goats and sheep are superior to cattle for handling the terrain. They also eat more forbs and browse than cattle as sheep and goats are well adapted to grazing rough borders around an otherwise relatively level pasture. Cattle prefer to graze grass and prefer more gently sloping land. It is the combination of grasses, forbs, and browse that provides for the more efficient use of multiple species for grazing, sometimes increasing meat production per acre by over 20%.

Although there are individual preferences, data do not define if forages are utilized more efficiently if small ruminants graze before or after cattle. Some prefer to graze small ruminants before cattle so that the sheep and goats are less likely to be exposed to larvae from internal parasites on taller-growing plants. Cattle and small ruminants also may be grazed at the same

time. Usually small ruminants are used to eat weeds and browse that cattle do not eat in a multi-species regime. Concerns with multi-species grazing involving cattle and small ruminants include predator control and fencing for the goats or sheep. Labor also can be an issue since the species may be grazing at different times. In such cases, additional labor is needed to move the livestock from field-to-field. Depending on the environment, small ruminants may require a more extensive program to control internal parasites than cattle which adds to labor demands.

Some type of predator control program is essential with sheep and goats as they are more susceptible to feral or local dogs and coyotes than cattle. Cattle may serve as a deterrent to the roaming canines but extra precautions are usually needed. Livestock guardian animals are most commonly used to protect the small ruminants from predators. Dogs such as the Great Pyrenees or the Anatolian Shepherd are most used as guardians, but donkeys, mules, mustangs, and llamas are also used. If a guardian animal does not protect the herd, it should be replaced.

Usually more exterior fencing is needed to keep unwanted canines away from small ruminants as well as to keep the small ruminants in the field compared to cattle. Goats require a little more extensive fencing than sheep to keep them confined but even more extensive fencing is required to keep the coyotes out of the field where the sheep and goats are grazing. Reinforcing existing fencing with electric fencing is usually the most economical method.

As with all livestock, there may be personality conflicts with mixed species of animals. If this occurs, the least desirable animals involved in the conflict are best culled from the herd. Another problem with grazing of multiple species is the feeding of minerals. Usually goats and cattle can use the same mineral unless there appears to be a health concern. However, sheep do not tolerate as high a level of copper as do goats and cattle if the animals are being co-mingled. Multi-species grazing can have additional benefits other than greater pounds of meat per acre. Because gastrointestinal parasites from goats or sheep cannot survive in the stomach of cattle and vice versa, multi-species grazing may decrease internal parasite loads. The decreased level of parasites should result in fewer treatments for worms which could slow resistance of parasites to conventional dewormers, an increasing problem with small ruminants. In a field infected with a high load of larvae from sheep and goat parasites, cattle should be grazed first to pick up the larvae of parasites, and then goats or sheep could graze with less danger of parasite infestation. In other situations, producers may prefer to have small ruminants graze before cattle as most of the larvae of internal parasites are located on plants within 4 inches of the ground.

Producers with cattle can obtain greater pounds of meat per acre and can reduce weeds and brush in a pasture when adding small ruminants for multi-species grazing. These benefits need to be compared to the additional labor and fencing requirements for the small ruminants as well as the costs of predator control for sheep and/or goats.