

GRAZING

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Grazing" is defined by the dictionary as moving along while cropping and eating grass. Since December is the month with a lot of holiday occasions where a great deal of food is consumed by most of us, it may be appropriate to think a little about cattle grazing. The act of grazing may seem like a simple and unimportant factor in cattle production. Grazing is not necessary for cattle as they can be maintained quite well, although at higher cost, when fed in a feedlot. However, in the southern USA the availability of pasture over most of the year and the lower cost of these 4-legged forage harvesters makes this the obvious choice for feeding beef cows. Grazing meets the nutritional needs of the animal but this activity also has a marked effect on the plants in the pasture as to their survival, productivity, and nutritional content.



How does an animal graze?

The grazing animal can be considered as a forage harvesting machine. During one day, a cow may consume 20% of her weight in fresh forage. This is done by moving slowly across the pasture and taking bites (30 to 60 per minute) by pulling the grass into the mouth with the tongue, holding it firmly between the tongue and lower incisor teeth, and pulling or tearing it from the plants. The sound one hears when standing near a group of grazing cattle is that of grass being torn off the plants. During warmer times of the year, major grazing periods occur around dawn or dusk although during winter grazing may be almost continuous during daylight. During very hot weather in summer, cattle may graze predominately at night. Grazing may occupy 6 to 11 hours per day, depending on availability of forage and how quickly they can fill up. A good pasture should have sufficient green forage so that animals can obtain full size bites. When pastures are very short or there is a great deal of dead material, cattle will obtain

only small bites of forage and require more bites which means a longer grazing time.

In a peaceful pasture scene, cattle are working hard. During one day, a cow will have walked two miles or more and taken 20,000 to 40,000 individual bites to satisfy its appetite. After grazing, the animal rests and ruminates 5 to 9 hours daily while regurgitating the forage, chewing, mixing it with saliva, and swallowing again. During rumination, the cow exercises another 15,000 to 20,000 jaw movements.

The diet eaten by grazing animals usually contains higher proportions of leaf and live plant tissue, and lower proportions of stem and dead tissue, than are found in the pasture as a whole. This means that the nutritive value of the diet of a grazing animal is usually higher than that of the total forage in a pasture. In addition, grazing animals tend to graze some plant species and avoid others. Thus, selective grazing by the animal is an important factor in animal performance on pastures with adequate forage. When pastures have limited forage and cattle are forced to eat most of the available forage, selectivity by the grazing animal is reduced and performance of growing animals may suffer. Touch, taste, and smell are used in selective grazing. Cattle do not select food objec-

tively because it is high in energy or protein, thus they appear to lack nutritional wisdom. Quite often, one might say the same thing about many human beings!

How do grazing animals affect the pasture?

The productivity and quality of pastures may be substantially altered by grazing animals. The effects may be either good or bad, depending on the plant species and environmental conditions. Grazing animals have three major effects on a pasture: defoliation, treading, and excretion.

(1) **Defoliation.** Grazing reduces leaf area, thus affecting plant food storage, new shoot development, root growth, light intensity, soil temperature, and soil moisture. Close continuous grazing will decrease forage production and may reduce the vigor and stand of some grasses and increase unpalatable weed development. Close grazing may favor one plant species over another such as common bermuda or bahiagrass over hybrid bermudagrass. Close continuous grazing favors white clover and Kentucky bluegrass but may eliminate plants such as johnsongrass, orchardgrass, or alfalfa. Undergrazing not only wastes forage and reduces forage quality but generally decreases white clover because of shading by grasses. Adjusting stocking rate or rotational grazing can greatly assist in maintaining pasture productivity.

(2) **Treading.** The pressure of hooves of grazing animals may cut or crush pasture plants, compact the soil, and reduce pasture production. Some plants are much more tolerant of treading than others. Ryegrass, tall fescue, Kentucky bluegrass, bermudagrass, bahiagrass, and white clover are more tolerant of treading than wheat, rye, oats, or orchardgrass. Pasture treading damage is much greater on wet than dry soils, on clay than sandy soils, and on recently tilled than settled soil.

(3) **Excretion.** Cattle defecate 10 to 12 times and urinate 6 to 8 times daily. Unfortunately, grazing cattle collect nutrients from all over the pasture and then concentrate them in only a small area. Probably only 1 to 2 percent of a pasture may be covered by dung during a year and somewhat more area by urine. The areas affected by nitrogen and potassium from the excreta will be somewhat larger because of mobility but it still is highly concentrated. The patchy distribution of urine and dung near shade, water, and bedding sites contributes to variation in forage growth and serious nutrient losses from volatilization of nitrogen and leaching of nitrogen and potassium.

Pasture is a crop that is harvested with cattle. The success of the harvesting process to produce a satisfactory output of animal product is dependent on the grazing process and how it is managed to produce adequate supplies of nutritious forage and utilize it. Understanding how cattle graze is the first step in improving grazing management. Careful observation of cattle while grazing and the pasture itself is time well spent.

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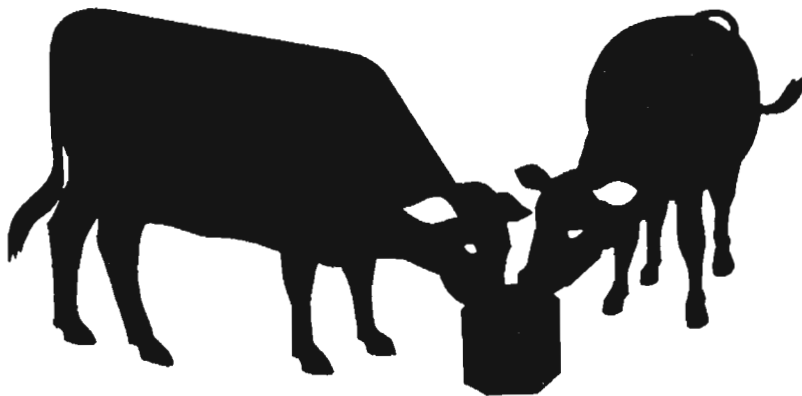
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