

Pasture Stocking Rate

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Last month we discussed how cattle graze and how they affect the pasture. This month, let us talk about one of the most important concepts in pasture management - stocking rate. January is generally a poor time for good pasture growth and hay feeding is the norm for most beef cow herds in Georgia. There isn't much that can be done at this time to enhance pasture growth but it is a good time to think seriously about how to better manage pastures for greater productivity and nutritive quality.

Seasonal variations in forage growth rate

It would be wonderful if pasture growth rate was uniform over the year or at least matched the seasonal variations in forage needs of the grazing livestock on a farm. Unfortunately, pasture growth rate varies greatly over the year because of variations in temperature, rainfall, and differences in plant species. Bermudagrass makes peak production during June and July with a 4 to 7 month dormant period, depending on the area of the State. Tall fescue has a long productive season with peaks in autumn and an even larger one during April and May. Winter annuals such as wheat or rye can make substantial growth during autumn, declining in January, then peaking during March and April. Thus, matching the forage available to the needs of a fixed number of animals becomes difficult and how this problem is managed can affect subsequent growth rates of pasture.

Pasture stocking rate effect on animal production

Pasture stocking rate can be defined as the number of animals per unit area for a substantial period of time. This doesn't mean much unless one knows the amount of forage available in the pasture. Another term, grazing pressure, refers to the animals in relation to the forage available. Thus, at high grazing pressure there is little forage available per animal. One can have high grazing pressure in winter at a low stocking rate because of limited forage but during

spring the grazing pressure may be low with a high stocking rate because of large quantities of available forage in the pasture. Therefore, any attempt at managing a pasture must take into account the seasonal changes in forage available.

A good pasture manager must be able to estimate the stocking rate based on the amount of forage available in the pasture if adjustments are to be made. If the pasture is being grazed by growing animals, the available forage can influence the output of animal product from the pasture. The graph shown is based on many grazing trials with growing steers. At a low stocking rate, available forage and productivity per animal are high but output per acre is low. Animals have plenty of opportunity to select green leaves but as the quality of perennial grasses declines with accumulation of stems and dead leaves, dry matter intake may decrease and lower animal output. As stocking rate is increased on a pasture, less forage is available per animal. Individual animal output decreases as they compete for forage and have less opportunity to select for high-quality leaves. However, animal output per acre

increases with stocking rate until individual animal gains are depressed to the point that the additional animals carried on the pasture do not compensate for the loss. The effects of stocking rate are much less dramatic with beef cows and calves than growing steers or heifers because the cow requirements for maintenance are lower and the cow can make use of body reserves to sustain lactation when forage intake is limiting. However, as the calf grows and obtains most of its sustenance from forage it will be responsive to forage available and the quality of that forage. Maintaining a good supply of green leafy forage rather than old stemmy and dead leaves in a pasture will improve calf weaning weights.

Stocking rate effect on pasture plants

Tall fescue pastures during late autumn and winter are generally closely grazed as animals supplement their diets with limited amounts of green leaves to supplement hay feeding. No harm is done to the grass as tiller (shoot) populations decline during winter. Tiller numbers normally increase rapidly during



