

Grazing Systems

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A grazing system is the combination of pastures, livestock, fences, and management used to control forage production and harvest. The development of a grazing system should be flexible and dependent on the livestock producer's goals and resources. Grazing systems are divided into "continuous" or "rotational" stocked systems.

Continuous stocking is the grazing of one pasture for a long period. Advantages of continuous stocking are low fencing cost, little daily management, and good animal gains per head when the stocking rate is correct. The disadvantage of continuous stocking is that it allows little control of the timing and intensity of grazing. Under continuous stocking, livestock should be stocked at a rate that will balance the feed requirement of the herd with the forage growth rate.

Continuous stocking often results in poor forage utilization in the spring when plant regrowth is rapid. If the animals are stocked to use the spring flush, there will not be enough forage during the summer to meet the herd's needs. When the pasture is stocked properly for summer forage production much of the spring flush will be wasted and the manager will need to clip the pasture to remove grass seed heads and weeds. If the pasture is overstocked animal gains will be lower and the pasture will be overgrazed. This results in lower forage production and an open sward that is subject to erosion and weed invasion.

Continuous stocking is of value on a farm where pasture is plentiful and the manager does not wish to increase livestock numbers. Continuous stocking is most successful when used with dry cows, sheep, growing heifers, and beef cows of moderate to low milking ability.

When using continuous stocking, don't over graze the pasture. Stock the pastures at a rate that provides adequate forage in July and August. The forage should be maintained at a height of 2 inches when grazing Kentucky bluegrass white clover and 4 inches when grazing Orchardgrass-clover pastures.

To get better use of spring forage use a variable stocking rate over the grazing season. A higher stocking rate should be used in the spring when forage production is high. The stocking rate should be reduced during the summer. This can be done by selling livestock

after the spring flush or by allowing cattle to rotationally graze hay aftermath or summer annuals. If needed, clip your pasture once a year between June and July to control weeds and remove grass seed heads that can irritate the animals' eyes and increase the incidence of pink-eye.

Do not continuously stock alfalfa, timothy, reed canarygrass or smooth brome grass stands. These species will not survive continuous grazing. Bluegrass, orchardgrass, and tall fescue are grasses that can tolerate continuous stocking; white clover and Empire-type birdsfoot trefoil are legumes that can tolerate this management.

Rotational stocking is where livestock are moved between pastures during the grazing season, concentrating their feeding on one pasture for a few days and then moving them to a new field that is ready to graze. The grazed paddock is allowed to rest and regrow for a suitable length of time. The time needed depends on the forage species and growing conditions.

Rotational stocking has a number of advantages. The manager has more control of the timing and intensity of grazing by the livestock. This allows improved forage growth and utilization over the season. With rotational stocking sod vigor may be increased. Adequate regrowth helps maintain a healthy plant root system that grows deeper in the soil and is more tolerant of summer droughts. This increased sod vigor can reduce weed problems by providing competition with weed seedlings. Also, many weeds are grazed by livestock when frequent grazing keep the pasture in a vegetative stage of growth. Having the proper rest interval between grazing events allows the use of forage species such as alfalfa, which may be more productive than naturalized forages on deep fertile soils. Well-managed rotational stocking has often doubled animal production per acre on farms compared to continuous fixed stocking. This advantage is due to a combination of increased forage production, forage quality, and forage utilization.

Rotational stocking has some disadvantages. More fence has to be built and maintained, more time is spent checking and moving livestock, and more effort may be required to make water available to the animals.

Rotational stocking is best suited where the manager wants to increase animal production per acre or reduce operating cost by harvesting forage with livestock instead of machinery. Rotational stocking is best suited for dairy cattle, intensively managed sheep, high-producing beef cattle, and growing young stock where increased production per acre is a major goal.

The number of paddocks used in a rotational stocking system varies with management goals and personal preferences. With the cool-season forage used in West Virginia, at least seven paddocks are needed to allow for uniform grazing over the year and to allow for some hay removal. An 8- to 10- paddock system is more flexible and is adequate for beef and sheep production. The number can be as high as the 21 to 84 paddocks used by dairy producers. These intense systems are best suited for high-producing animals since this management provides a uniform, high quality feed supply. This usually results in a

more uniform level of milk production. Short-stay rotational grazing systems are of less value on most beef and sheep operations since they require more capital, labor, and management. The lower returns from beef and sheep may not recover the additional costs.

Rotationally grazed paddocks should be large enough to supply the animal's feed requirement for the planned stay. The animals should consume the available forage to the desired stubble height in seven days or less. With good soil conditions and forage species, one to two acres will provide the grazing needs of a cow and her calf for the summer. About half of the paddocks should be harvested for hay in late May to control excess growth. The regrowth on these paddocks can be grazed when forage growth is slower in July and August. If weather conditions are favorable during the summer, excess forage can be taken as a second or third hay cut. In the fall, forage growth will stop due to cold weather and short day lengths. During this season the entire acreage can be used for grazing. As the cattle finish grazing a paddock, they should be excluded to prevent overgrazing or punching holes in the sod in wet weather.

In the Northeast grass-clover pastures need about a 3-week rest interval in the spring. This increases to a 6-week rest interval in the summer as soil moisture decreases and temperature increases. Orchardgrass-clover and endophyte free tall fescue stands are most productive when they reach an 8- to 10-inch height. Graze the stand to a 2-inch stubble to favor the maintenance of white clover. Tall fescue-clover stands infected with the wild toxic endophyte are best grazed from a 6- to 8- inch height down to a 1- to 2-inch stubble to encourage clovers and other grasses to dilute out the toxic endophyte. Kentucky bluegrass-clover stands should be grazed when they reach a 4- to 6-inch height and grazed to a 1-inch stubble. Base the grazing of alfalfa and birdsfoot trefoil on the development of flowers. These legumes should be grazed in the late bud to early bloom stage of growth. They will respond best to a 5-to 6-week rest interval, depending on temperature and rainfall. These plants should be grazed to a 2- to 4-inch stubble.

The type of grazing system best suited to a given farm will depend on the farmer's goals and resources. Rotational stocking allows flexibility in management and provides a better opportunity to use livestock to manage the grasses, legumes, and weeds that inhabit pastures. Under both continuous and rotational stocking it is necessary to be able to increase the grazing acreage available per animal as the season advances. This is done by making more acres available to the herd or by reducing the herd size. If this is not done, forage will be wasted in the spring or overgrazed later in the season and animal production may suffer. The key to making either management system work is balancing the production and use of forage over the year.

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