WASHINGTON STATE UNIVERSITY
WALLA WALLA COUNTY EXTENSION

CONTROLLED GRAZING: A PROVEN MANAGEMENT TOOL

Efforts to increase efficiency, lower costs, and gain more profit from existing resources and ecologically maintain those resources have led many progressive ranchers to controlled grazing. Since its introduction to North America in the 1970's controlled grazing has proven itself a sound management practice.

Controlled grazing is the management of forage with grazing animals. It limits access to grazing by subdividing pastures with permanent and temporary fences. When compared to controlled grazing practices, traditional grazing methods prove inefficient in terms of energy, production, and operation.

Controlled grazing results in: increased amounts of forage harvested by animals; improved forage quality; extended grazing seasons; reduced fertilizer and herbicide applications; reduced labor and feed costs; fewer weeds; and environmentally responsible grazing areas.

Fencing plays a critical role in the success of controlled grazing. New fencing options and technology simplify controlled grazing more than ever, and help improve results such as forage quality, production, and environmental impact.

Controlled Grazing Basics

1. **Select an area to start**. Keep it close to home and small—20-30 acres, and no more than 200 acres. Choose an area that is uniform in terms of soil, forage, and terrain. Hay pastures make ideal controlled grazing areas.

2. **Plan perimeter and interior fencing**. Fencing for controlled grazing is simple to plan, install, and maintain. Strong, permanent perimeter fences should be erected. Interior paddocks are then created with temporary fences. Move portable fences as cattle need to be moved. If possible, provide water in each paddock.

3. **Put enough livestock into a paddock**. Enough livestock should be concentrated into an area, so that the forage is grazed to the desired height before the grazed plants begin to regrow. Forage usage should be monitored daily. The smaller the paddock and the higher the number of livestock, the more uniformly the paddock will be grazed. When the forage in the paddock is grazed to half its original height, move livestock to a paddock that is ready to be grazed. Once animals are accustomed to controlled grazing, moving to new paddocks should only require a few minutes.

4. **Monitor forage in the grazed paddocks**. The ideal forage height to begin and end grazing is dependent on the species and the climate conditions. Forage plants should be grazed before they get too mature, but not so soon or so low that the crowns would be damaged. When forage has recovered, move livestock back into the paddock. Growth rates vary widely during the grazing season. Available moisture is the key to the length of time for the forage to recover. The rule of thumb is “fast growth, fast moves; slow growth, slow moves.”

5. **Have backup pasture available**. Avoid grazing paddocks that have not recovered sufficiently. Be prepared to cut hay in paddocks that grow too rapidly between grazing periods. Do not try to follow a set rotation; move livestock to a paddock that is ready to graze.

6. **Relax and be flexible**. Severe grazing (grazing very short) can be offset by a longer recovery period. Let it rest longer than the others. Monitor forage and make adjustments as needed. Controlled grazing is as much art as science.

Rest Periods and Stock Density

Forage recovery time is the most important aspect of controlled grazing management. Grazing plants too soon will use up root reserves and weaken them. Waiting too long to graze plants will reduce forage quality and affect animal performance.
Stock density must be managed effectively, too. Low stock density causes uneven harvesting of forage. Some plants are grazed too short and are weakened, while some plants are not grazed at all and lose quality. Low stock density also reduces beneficial hoof action, and can result in trails from livestock who wander around looking for better forage.

High stock density causes animals to graze quickly and then rest, resulting in better performance and less damage to plants. French farmers have a saying: “Cows eat with five mouths-one on their head and four on their feet.” The less animals walk, the more they eat.

Proper stock density, like rest periods, varies greatly depending on the forage resource and the season. In the spring, stock densities should be higher to allow livestock to keep ahead of grass. During summer months, when grass quality declines, stock densities should be increased to force animals to harvest more forage. In late summer, stock densities should be reduced to allow grass to build up reserves for fall. In the fall, depending on type of grass, stock densities can be increased to increase forage utilization.

Undergrazing Pitfalls

- Shades our low-growing forage species
- Produces stems of low quality
- Reduces forage production with soil capping
- Wolfy, over-mature impalatable plants

Overgrazing Pitfalls

- Lowers carrying capacity
- Slows root growth
- Reduces drought tolerance
- Weeds increase

Successful controlled grazing management depends on the right fencing system. Dependable, controlled grazing fence systems combine strong, durable perimeter fencing with easily adjusted interior fencing.

Calculating for Controlled Grazing

Stock density = number of head divided by size of paddock
Example: One hunderd steers averaging 600 pounds each are grazing a two-acre paddock. One hundred steers times 600 pounds equals 60,000 pounds, or 60 head (1,000 pounds live weight). When divided by two acres, 60 heads equals a stock density of 30 head per acre.

Stocking rate = number of head divided by size of grazing area
Example: One hundred steers averaging 600 lbs each are grazing a 40-acre cell that is divided into 2-acre paddocks. That equals 60 head (1,000 pounds live weight) divided by 40 acres for a stocking rate of 1.6 head per acre.

Rest period = (number of paddocks times grazing period) minus one grazing period
Example: When grazing 20 paddocks for two days each, the rest period for each paddock is 40 days minus one grazing period, or 38 days. If the grazing period were one day, the rest period would be 19 days.

Carrying capacity = amount of forage available divided by number of head
Example: a 40-acre pasture produces an average of 3,500 pounds of dry matter (forage less moisture) per acre per month from March to August. Normal harvest yields 2,000 pounds per acre per month. A 600-pound steer will eat approximately 3% of its

bodyweight, or 18 pounds per day. Dividing 2,000 pounds by 18 pounds equals 111 steers. Therefore, the carrying capacity is 111 steers, or 66 animal units per acre per month.

Residual dry matter = amount of forage minus amount of forage harvested
Example: A two-acre paddock contains 3,500 pounds of dry matter per acre for a total of 7,000 pounds of dry matter. One hundred steers will eat 1,800 pounds per day or 3,600 pounds of dry matter in two days. This will leave 3,400 pounds of residual dry mater or 1,700 pounds per acre. The more dry matter left, the faster the paddock will recover.

Profit per acre = [(sale weight x price) minus costs] divided by number of acres
Example: One hundred 600-pound steers gain 300 pounds and sell for $75/cwt or $675 each, less a 3% death loss, for a total of $65,475. Each steer costs $450, plus $50 in medicine, fencing and pasture for a total for $50,000. This means a gross profit of $15,475, which, divided by 40 acres, means $387 gross profit per acre.

The Difference Between Stock Density and Stocking Rate
Stock density is the number of animals grazing a paddock. It is often confused with stocking rate, which is the number of animals on the property. For example, a 500-acre ranch with 1,000 steers would have a stocking rate of two steers per acre. Dividing the ranch into 20 25-acre paddocks and putting all the steers into one paddock would provide a stock density of 40 steers per acre. Strip-grazing each paddock five times (five 5-acre strips per paddock) would give a stock density of 200 steers per acre. However, the stocking rate of two steers per acre would not change.

Adapted from: *Small Farm Today*; August 1999

Compiled by John Fouts. For more information, contact WSU Extension at (509) 524-2685 or email John at fouts@wsu.edu.