



IMPLEMENTING ULTRA HIGH DENSITY GRAZING

Alabama Job Sheet No. AL528A



Definition

In this form of rotational grazing, grazing animals, at a very high stocking density, graze a management unit for very short period of time.

The goal is to utilize grazing livestock hoof action from ultra high-density livestock stocking to mix plant residues and manure with soil to improve the nutrient cycling process and microbial activity. The improved soil health will lead to increased plant diversity, vigor and water infiltration. Wildlife should benefit from this grazing system.

Considerations

There are a number of things to consider before and during implementation of this type grazing system. They include:

- Plant diversity is going to occur and is usually desired with this kind of management and is a component of this method's success.
- Complex management ability is required for this method of grazing and is not for beginners or those never using any kind of grazing management before.
- Excess forage must be available to graze at a high stock density (> 50,000 lbs. < 75,000 lbs. of livestock/acre).
- Livestock may have to be moved every few hours to meet the livestock forage needs depending on the specific situation.
- Pasture forages should be allowed to rest and accumulate much longer than in a typical rotational grazing system. It may take up to 90 days for adequate accumulation after being grazed.
- Developing an 'eye' for when to graze and move animals is different from typical rotational grazing system and will take time to develop. (Ex: determining when 50% of the available forage has been removed).
- It is preferable to end grazing when tame species are grazed down to about 4 to 5 inches; or, when native grasses are grazed down to 8 to 10 inches.
- When starting this grazing method, consider allowing livestock to graze in paddocks for a very short period of time to "quick graze" each area, but continue at high stock densities. This is sometimes called 'top grazing'.
- Producers wishing to maintain "near-pure-stands" of forages such as bahiagrass and bermudagrass should not consider this grazing method. As these forages mature in this type of system, quality and stand is reduced, leading to other species being introduced (one of the goals of this practice).
- It is anticipated that the average beef operation in Alabama will most likely have to feed hay or destock to allow forage accumulation.
- This activity applies to beef operations only.
- Herds used for ultra high density grazing should be of uniform body weight to facilitate management.
- This grazing method should be implemented during the months of March through November and depends on type of forage to be grazed.
- Gully, sheet and rill erosion must be controlled or stabilized.
- Adequate livestock drinking water must be provided by a tank, trough or a stabilized controlled access surface water location.
- Those implementing this type of management should use caution and evaluate risk.
- This grazing method should not be implemented under the following conditions:
 - Sites that are have wet saturated soils or are very shallow to bedrock soils, etc.
 - Live plant canopy cover of the soil surface is less than 75%.
 - A woodlot or forest.

Implementation

The following guidance will aid in implementing this grazing system.

Step 1:

Complete a grazing plan to account for livestock numbers, forage yields, about 50% forage utilization (amount animals actually eat). See Table 1 for estimates of available forage.

Example – Determine operation stocking rate:

- Assume a 6000 lb. dry matter yield per acre for 80 acres.
- (6000 lbs. x 50% (utilization)) = 3000 lbs./ac available dry matter.
- For 80 acres the available dry matter for consumption is 240,000 lbs. (80 x 3000 lbs.).
- If a 1000 lb. cow eats an average of 25 lbs. per day (2.5% of body weight), then the baseline stocking rate for the operation is 26 cows on 80 acres [(240,000 lbs. dry matter per 80 ac/ 25 lbs. dry matter needs per day per cow) over 365 days] = 26 cows.

| Table 1. Total Pounds per Acre of Available Forage (100 % uniform stand) | | |
|--|---------------------------------------|---------------------------------------|
| Available Forage Height for Grazing (inches)* | Estimated pounds by Plant Density 200 | Estimated pounds by Plant Density 250 |
| 18 | 3600 | 4500 |
| 16 | 3200 | 4000 |
| 14 | 2800 | 3500 |
| 12 | 2400 | 3000 |
| 10 | 2000 | 2500 |
| 8 | 1600 | 2000 |

*Total height minus height of forage when grazing is to be stopped.

Step 2:

Then design the stocking density for each paddock.

- Example: (remember stocking densities should be at least 50,000 lbs. /ac.).
- From the example in step 1: 26 cows at 1000 lbs. each on 1 acre = 26,000 lbs. density.
- If paddocks are changed to ½ acre paddocks then 26,000 lbs. /.5 ac. = 52,000 lbs. /ac (requirement met).

Step 3:

Remove livestock from a paddock when about 50% of available forage has been removed. This is difficult to judge and better decision making comes with experience. At livestock removal time, much of the

uneaten forage will be trampled (laid flat) on the soil. Approximately 10%-20% of the original forage/residue should still be standing (See Picture 1).

As an example:

Assume 200 lbs. dry matter per inch of forage. Initially, the average forage height is 20 inches and is to be grazed down to 4 inches. This leaves an average of 16 inches of available forage (above 4 inches). This means that:

- There is about 3200 lbs. of available dry matter per acre (16 in. x 200 lbs. dry matter per inch).
- At 50% utilization, that's 1600 lbs. of dry matter to be consumed per acre.

Using the example in Step 2:

- 1600 lbs. dry matter x .5 acres = 800 lbs. of dry matter in the 0.5 acre pasture.
- 26 cows x 25 lbs. dry matter needs/day = 650 lbs. dry matter needs/day;
- This means dry matter is available for 1.2 days of grazing (800 lbs. of available dry matter/ 650 lbs. daily dry matter needs = 1.2 days).
- Being conservative, allow 1 day of grazing for this 0.5 ac paddock.

Remember, moving of livestock from one paddock to another is about judgment of how much forage has been grazed and how much of the forage is left. Since no one wants to hurt animal health and performance, the manager should be conservative in trying this method by moving animals at least once a day in this example.

Step 4:

- Rotate livestock back to paddocks when the paddocks are fully recovered. Remember, it may take up to 90 days for adequate recovery and accumulation. Forages should be allowed to increase in maturity during each rest period (See Picture 2). Ideally, livestock will only have access to any paddock or area, two times per year (3 times maximum).
- Using the above example, if 90 days are required for recovery before grazing the first paddock again, then:
 - Ninety, 0.5 acre, paddocks will be required to continuously graze using this ultra high density grazing method.
 - Or, a lesser number of paddocks could be grazed using this method, but cattle would have to be moved to another set of pastures to graze or held on feed until the original pastures had received adequate rest and recovery.



Picture 1: Picture of 40-50% grazed, 30-40% trampled and 10% to 20% left standing.



Picture 2. Cool season perennials at full growth and beginning High Stock Density Grazing.

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