

NRCS GRAZING OR PASTURE STICK

INSTRUCTIONS FOR USING

The USDA-Natural Resources Conservation Service (NRCS) grazing stick is a tool for use in rotational grazing. It is a good educational tool for getting started in rotational grazing. The following information can be obtained when using the grazing stick:

- When grazing should be started
- When livestock should be moved to another pasture
- Average pasture growth rates
- Rotation lengths, number of days when pasture is not being grazed
- Estimate of the amount of available dry matter

When to start and stop grazing: Place the stick vertically into the forage. Use the inch scale to measure the height of the grass at the top of the **thickest** part of the canopy. Measure about 10 spots typical of the pasture to obtain an average forage height. **Begin grazing** when forage heights are between 6 and 12 inches for pastures containing orchardgrass, timothy, bromegrass, perennial ryegrass, tall fescue and legumes such as red clover, and trefoil. Grazing should begin at a height of 5 to 6 inches for pastures containing lower growing plants like bluegrass, redtop, sweet vernal grass, fine leafed fescues, and white clover. Reed Canarygrass is not palatable when it is mature, so target grazing this species at no more than 6-7 inches, and leave 4 inches of stubble.

Pastures exceeding heights of 12 inches can be grazed by larger livestock species, such as cows. Sheep and even horses may tend to avoid the taller plants and graze around the base for shorter stems. If grazing cows on taller heights, be aware of nutritional requirements of the animals you are grazing, and manage appropriately, keeping a close eye on livestock body condition scores. Milk production may suffer on forages that are too mature, and most lactating cows are managed on pastures that do not exceed 10 inches in height, and are leafy, green and succulent.

Taller forages will also tend to be less palatable, in general, to animals. If pastures get ahead of you in maturity, consider taking a cut of hay from the field(s). Another strategy that is used to get animals to utilize over-mature pasture is to mow a day's worth of forage at a time and leave it to wilt for half-day or so before turning cows onto it. They will usually consume it as they would hay. Again, the caution here is that grasses that have produced a seed head and gotten "stemmy" will have much lower protein, digestibility, and nutritional value.

Move livestock to a new pasture when the forage height has been reduced to 3 to 4 inches for the taller species and to about 2 inches for the lower growing species (black bar on stick). The more leaf material that is left behind, the better the plants will respond and re-grow. It is important not to graze below these heights, and even taller "stubble" left behind is better. If the forage is grazed too short, then the plants have to use their root reserves to start regrowth. This will slow the rate of regrowth and reduce the total amount of regrowth, impacting productivity. It may be necessary to supplement the forage with hay or another feed to prevent overgrazing.

Remember these adages and discipline yourself to manage by them for the best possible pastures:

"Take half, leave half."

"It takes grass to grow grass."

Tall vegetation, not eaten by the animals, can be clipped to a height of 4 inches to promote regrowth and to control undesirable weeds. Clipping weedy pastures twice a season will help to keep weeds in check and promote forages.

One exception to these height recommendations is the first time a pasture is grazed in the spring. Grazing should be started when new spring growth reaches 4 inches in height and grazed until the height is 2-3 inches. This will keep pastures from maturing too fast and move the animals rapidly through all the pastures to establish a staggered forage regrowth pattern necessary for the rest of the grazing season.

A second exception to the recommended grazing heights is when soils are so wet that punching is a problem. Delay grazing until the soils are dry enough to support the weight of the animals without punching. In these circumstances, pasture may get more mature than you desire. See above for ideas to deal with this.

The side of the stick with the black (or red if your stick is wooden) tip also gives the average growth rates expected in pounds of dry matter per acre per day for different times of the year. Also, rotation lengths are given. The rule of thumb is to allow the pasture to regrow undisturbed for 15 days in spring or early summer and 30 days or longer in mid-summer and fall before turning the animals back into the pasture to graze. This period of undisturbed regrowth is very important for a pasture to be productive. **The number of days is a guideline. Actual management decisions should be based on grass height, speed of regrowth, and other considerations.**

A third exception to these recommendations is when there are hot, dry conditions. Rotation lengths (number of resting days) need to be increased, and a longer height needs to be left for recovery.

How to estimate the amount of dry matter for grazing: This estimation uses the side of the grazing stick with the dots grid and the tables on the right side of the stick.

1. First, the average height of the forage needs to be determined as described above.
2. Next, slide the stick sideways into forage that is 5 to 8 inches tall, depending on the species. With the stick flat on the ground and the forage covering the stick, count the number of dots you can readily see.
3. Go to the table on the right side of the stick and choose the column of numbers that matches the number of dots counted.
4. Rotate the stick to find the best description of the forage present. This gives the estimated pounds of dry matter per acre per inch of growth. These tables assume that there has been some level of management, such as liming or applications of N (nitrogen fertilizer) on grass-only pastures.
5. To estimate the amount of **forage available for grazing per acre**, subtract 3-4 inches (remaining leaf and stubble) from the average height of the pasture and multiply by the estimated pounds of dry matter per acre per inch value obtained from the table.

Now, other estimates can be made by knowing the number of animals, type and size.

Rule of thumb: Grazing animals consume 2.5 to 4.0 lbs. of dry matter per 100 lbs. of body weight per day, depending upon species and production stage. Lactating dairy cows eat 3.0 lbs. of dry matter per 100 lbs. of body weight per day.

Examples: 125 lb. sheep eats 3.1 lb. dry matter/day
1000 lb. non lactating cow eats 25 lb. dry matter/day
1200 lb. lactating dairy cow eats 36 lb. dry matter/day
1300 lb. lactating dairy cow eats 39 lb. dry matter/day

This information can be used to determine how many animals can be grazed on the pasture for a given period of time, how long the pasture can be grazed, or how many acres of pasture is needed for a given number of animals for a given period of time. This information is useful for making sure there is enough forage in the days ahead and for fine tuning planned rotations and pasture layouts. Dry matter fed in the barn or supplemented on pasture can be subtracted from the total daily requirement.

Some animals will consume more than needed if it is available. Dairy cows, however, tend to have a challenge consuming enough succulent pasture to meet their DM requirements. More frequent moves (2 or more times per day) will reduce fouled forage and encourage animals to get up and graze.

The longer animals are in one paddock, the more fouling and trampling will take place, and consequently there will be less available palatable forage. Trampling and fouling may account for reductions of available forage in the range of 10 to 50%, so it is a good idea to take this into account when planning paddock size, stocking rate, or stocking period.

Calculate paddock size:

1. Use the pasture stick to estimate the amount of forage dry matter available per acre.
2. Calculate the amount of forage needed for the animals you have X .5 (to account for fouling, trampling, and other wasting, or by .7 if moving to fresh ground every one to two days) X the number of days they will be on a paddock until their next move.
3. Number 1 ÷ number 2 = paddock size in acres needed.

One acre is roughly 40,000 square feet, or 200 x 200

For a demonstration, see eOrganic's video, Calculating Dry Matter Intake:

<http://www.youtube.com/watch?v=bSYflqjP6B0>

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