**Using the Grazing Stick to Estimate the Amount of Forage Available for Grazing**

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**Introduction**

 The grazing stick is a tool that has been developed by the USDA-NRCS to help producers evaluate the amount of forage available for grazing in pastures that are between 6-12 inches tall.

 The grazing stick uses the relationship between the plant height, plant density, and plant weight per height to estimate the amount of forage available above a 3-inch stubble height. The grazing stick does not measure the total standing crop or the entire yield of a pasture, but rather, only that which is considered available for use by grazing animals.

**Procedures**

 For best results, make sure the pasture is between 6-12 inches tall.

 Walk through the entire pasture in a single “S” or “Z” pattern to read several areas.

 Take a minimum of 10 measurements per acre of pasture.

 (Measurements of 10’s make the math easier).

 Keep in mind, the more measurements you take, the more accurate the estimate.

**Measuring Sward Surface Height**

 At each measurement location, place the grazing stick in the forage perpendicular to the soil surface (bottom of the stick should be flat on the soil). Place your hand, palm side down along the side of the grazing stick, parallel with the soil surface and slide your hand down the stick until good contact with the leaf canopy is made. Record this height to the nearest whole inch. Next subtract 3-inches from this number. This is the amount of estimated forage available for grazing.

 **Example**: Ave grass height (10 inches) – stubble height (3 inches) = 7 inches of forage

 In situations where sward surface heights are very uneven (generally when canopy heights are greater than 10 inches) or where higher stubble heights are wanted to maintain plant health and vigor, livestock production goals, or other management objectives, the accuracy of the forage estimate can be improved by subtracting an additional 1 or 2 inches.

**Evaluating Sward Density**

 At each sample point, place the grazing stick flat on the ground with the densitometer (the dots on the grid) facing up, and slide it along the soil surface beneath the forage. With the grazing stick flat on the ground and the forage covering the stick, kneel-down such that you can look straight down at the dots on the stick.

 Without moving your head or the stick, look straight down and count the number of dots you can see on the stick. The number of dots you can see through the forage will be used to estimate the forage availability.

**Estimating Forage Availability**

 Once the average number of inches of available forage has been estimated and its density (number of dots), go to the top of the grazing stick and determine which forage type most closely represents the type of forage in your field (example: orchardgrass, bluegrass, ryegrass, or fescue).

 Next, select the column on the grazing stick that represents the number of dots you counted. The corresponding number (at the intersection of the grass type and number of dots) is your estimated pounds of dry matter/acre/inch.

 Multiply the pounds of dry matter/acre/inch by the number of inches of forage available. This value is an estimate of the amount of forage available for grazing per acre.

 **Example**: Orchardgrass mix with 2 visible dots = 250 lbs dry matter/ac/inch forage

 250 lbs of dry matter/acre/inch x 7 inches of forage = 1,750 lbs of dry matter/acre

The grazing stick is not a precision instrument. It is used to help make decisions regarding how much forage is available and how often the animals should be moved to maintain viable, productive forage for grazing animals.

Average dry matter intake (DMI) for grazing animals is generally 2-3% of body mass per day, dependent on species, variety, and energy needs (rapid growth in youngstock, lactating for her, or breeding season for him). A trusted grazier, university extension, or NRCS advisor should be able to help you with more detailed calculations if you choose to take the planning further.

**Remember: Keep it Simple.**

 Put the animals on the pasture when the grass reaches the “Graze” portion (6”-8”) of the stick.

 Take the animals off the pasture when the grass is down to the no-graze portion (3”) of the stick.