

Measure Biomass to Determine Cover Crop Quantity and Grazing Days

How can you tell how much cover crop you've produced that can be used to feed livestock? Measuring biomass will help you determine tonnage and estimate your grazing period on cover crops. To measure biomass:

1. Create a 1-by-1 foot square. (**Tip:** An easy way to do this is to bend a coat hanger.)
2. Toss the square into the field randomly in order to select sampling sites. (**Tip:** Try for at least 5-10 random samples.)
3. Using scissors or shears, clip the above-ground forage that's inside the square. You'll want to clip the forage close to the ground.
4. For quick results, dry forage in a microwave or oven (look up instructions online). Alternatively, put the clipped forage in a paper bag and leave to dry for 3-4 weeks. (**Tip:** The forage should be dry and crunchy.)
5. Weigh the dry forage using a kitchen scale. (**Tip:** Record weight in grams (g)).
6. Calculate dry matter (DM) yield, using the following formula:

$$\text{DM Yield} = (\text{Mass of dry forage}) \times \left(\frac{43,560}{\text{number of squares sampled}} \right)$$

Conversions

- 1 lb = 453.6 g
- 1 kg = 2.2 lb
- 1 acre = 43,560 ft²

Example: 50 g of dry forage from 5 squares

$$\text{DM Yield} = \left(\frac{50 \text{ g}}{453.6 \text{ g/lb}} \right) \times \left(\frac{43,560 \text{ ft}^2 / \text{acre}}{5 \text{ ft}^2} \right) = 960 \text{ lb / A}$$

7. Calculate grazing days:

$$\text{Grazing Days} = \frac{\text{dry matter yield of forage}}{\text{dry matter intake of cows}}$$

Example: 10 cows, 1,300 pounds each, consuming 2.5% of their body weight daily

$$\text{Daily Dry Matter Intake} = 1,300 \times 0.025 = 32.5 \text{ lbs}$$

$$\text{Daily Dry Matter Intake for All Cows: } 325 \text{ lb / day total}$$

$$\text{Grazing Days} = \frac{960 \text{ lb / A}}{325 \text{ lb / day}} = \sim 3 \text{ days / acre}$$

8. Using estimates of biomass at different harvest dates:

- **March:** If harvested in March (before much spring growth), one might expect 200-300 lb dry matter (DM)/A. This would support 10 cows for less than one day.
- **April:** If harvested in mid-April, one might expect 800-1,000 lb DM/A. This would support 10 cows for roughly 2.5-3 days.
- **May:** If harvested in early May, one might expect 2,000-3,000 lb DM/A. This would support 10 cows for roughly 6-9 days.