Cover Crop Quick Guide

Biomass Sample Collection

To determine aboveground biomass, measure both fresh weight and the sampled area.

- Collect at least four representative samples per acre.
- Cut all aboveground biomass 1 inch above the soil surface.
- Weigh the combined samples.
- Record the total fresh weight (lbs) and the total sampled area (ft^2).
- Mix samples thoroughly and place one 1-gallon subsample into a paper bag for NCDA&CS Waste Analysis Lab submission.
- Do not submit more than 1 gallon and do not use plastic bags.

Weighing Tip

An easy method for weighing biomass in the field is to use a tarp, S hooks, and a luggage scale.

Example:

1. A 1 ft × 1 ft frame is used to cut 8 samples with a combined fresh weight of 5.4 lb. Total sampled area = 8 ft^2.
   Biomass density is calculated as:

$$\frac{Biomass, lb}{ft^2} = \frac{5.4\ lb}{8\ ft^2} = \mathbf{0.68\ lb/ft^2}$$



2. A 1-gal subsample is submitted to the lab using the NCDA&CS Waste/Compost Sample Submission Form and waste code **NCC**.

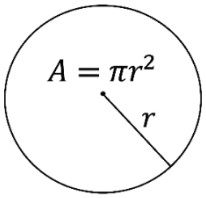
Using Different Frame Sizes and Shapes

Example for a Round Frame:
Radius (r) of frame = 1.5 ft

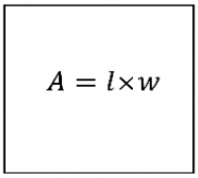
Steps:

1. Calculate r^2:
   r^2 = 1.5 × 1.5 = 2.25
2. Multiply by π:
   A = 3.14 × 2.25

Answer:
A = 7.07 ft^2



Area (A) of circle



Area (A) of a square or rectangle

Cover Crop Nutrient Calculation

The NCDA&CS Waste Report shows that the biomass contains **8.61 lb N** per ton:

Estimate of Nutrients Available for First Year (lb/ton)

N	P_2O_5	K_2O	Ca	Mg	S	Fe	Mn	Zn	Cu	B
8.61	3.05	15.7	0.99	0.72	0.82	0.17	0.02	0.02	0.01	0.00

To calculate nitrogen in the cover crop biomass per acre, multiply:

Lab N value x Biomass density x Conversion factor (22)

Why 22?

$$\frac{43{,}560\ ft^2}{acre} * \frac{1\ ton}{2000\ lb} = 21.8$$

Example:

$$\frac{8.61\ lb\ N}{ton\ biomass}\ x\ \frac{0.68\ lb\ biomass}{ft^2}\ x\ 22 = \mathbf{129\ lb\ N/acre}$$

Key Points

- Ensure samples represent field variability, especially in mixed stands.
- Smaller frames require more samples; larger frames require fewer.
- Determine total cover crop fresh weight in the field before lab submission.
- Submit samples with waste code **NCC.**
- Send sample to the lab as soon as possible to prevent decay. Do not submit in plastic bags.
- Do not allow the subsample to dry. The lab measures fresh and dry weight of the subsample to calculate dry matter %. This value is critical in calculating the nutrients in lb/ton.
- The "Estimate of Available Nutrients" section reports total nutrients. Actual availability is variable and depends on incorporation method, crop species, and age of crop at incorporation.
- Use lb/ton values from the waste report for nutrient calculations (not mg/kg dry-weight values).

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