

Methods for Determining Dry Matter of Forages and Grains.

Herb Bucholtz
 Department of Animal Science, Dairy Cattle Nutrition
 Michigan State University
 E. Lansing, MI 48824
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Microwave Method

Equipment Needed

1. Microwave Oven with turntable
2. Microwave-Safe Plate: 7-9" diameter. Caution - Do not use paper plate, they may burn.
3. Gram Scale: Capacity of at least 500 grams, accuracy at least 1.0 gram. Gram scales can be purchased from agricultural supply companies, drug and hardware stores.
4. Cup of Water: Be sure container is microwave-safe. This will help prevent the sample from burning when the sample is nearly dry.

Procedure

1. Weigh the empty plate & record weight
2. Place about 100 grams of chopped forage or cracked/ground grain on plate
And record plate + sample weight
3. Place in microwave for approximately 4 minutes. Set microwave on high setting.
4. After 4 minutes – record plate + sample weight
5. Place back in microwave for another 2 minutes
6. Again – record plate + sample weight
7. Repeat step # 5 until
Plate + sample weight remains unchanged (+/- 1 gram)
Sample is now completely dried.
8. Subtract the plate weight from the plate+sample weight.

Example of Arithmetic Calculations

1. Empty Plate weighted = 200 grams
2. Forage or grain sample + plate weighs = 300 grams
Sample weighted 100 grams [300 grams (plate + sample) - 200 gram (empty plate)]
3. Completely dried plate + sample weighs = 250 grams
4. % Dry Matter =
[250 grams (completely dried sample) – 200 grams (empty plate)] = 50 grams

$$50 \text{ grams} \div 100 \text{ grams} = 0.5 \times 100 = \underline{50\% \text{ Dry Matter}}$$

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Koster Crop Tester Inc.
 2317 Pearl Rd. (Rear)
 Medina, OH 44256
 330-220-2116 Fax: 330-220-1636
 kostercrop@aol.com
 web: www.kostercroptester.com