

# Collecting Forage Samples for Laboratory Analysis

► Learn guidelines for collecting representative forage samples for hay, haylage, silage, fresh forage, and nitrates.

With any type of forage sample, the goal is to collect a representative sample. The following provides some guidelines.

## Collecting a Hay Sample (≤ 20 percent moisture)

1. Test each lot of forage separately. A lot is defined as hay that was harvested at the same time out of the same field and under the same conditions.
2. Collect 15 to 20 core samples from each lot. Use a hay coring probe to reduce sampling error. If you don't have a hay probe, contact your county Extension coordinator or regional Extension agent on the Animal Science and Forage team to locate a probe in your area.<sup>1</sup>
3. Insert the hay probe at a 90 degree angle.
  - For a round bale, insert the probe into the curved side of the bale.
  - For a square bale, insert the probe into the center of the end of the bale.
4. Remove the hay probe, and empty the contents into a clean container.



5. After sampling a complete lot (15 to 20 core samples), mix the sample thoroughly and place the sample in a 1-quart plastic bag.
6. Label each sample with an ID (e.g., Back forty, Front lot, Old cotton field).
7. Fill out a Hay and Forage Testing Analysis Form on the Soil Testing Lab website or obtain a form from your county Extension office. Attach the form to the sample and mail it to the Auburn University Soil Testing Laboratory.

## Collecting a Haylage<sup>2</sup> Sample (≥ 40 to 60 percent moisture)

1. Haylage samples may be collected at multiple times: before baling, before wrapping, after wrapping, or before feeding.
  - If collected before baling, collect multiple grab samples from different areas in the field after harvest and just before baling.
  - If collected post-baling/before wrapping, collect core samples (as described above) from various bales in the field or as they are delivered to the wrapper, just before wrapping.
  - If collected after wrapping, collect core samples (as described above) from various locations in the tube or severally individually wrapped bales from the same lot. Remember to seal the puncture hole in the wrapping with multiple layers of an airtight tape.
  - If collected just before feeding, collect core samples (as described above) only from the tube or lot of individual bales that you plan to feed next. This eliminates excessive damage from hole punctures over a prolonged period of time.
2. Place each sample into a clean container, mix thoroughly, and empty the sample into a 1-quart plastic bag. **Remove as much air from the bag as possible when sealing.**

3. Label each sample with an ID (e.g., Back forty, Front lot, Old cotton field).
4. Fill out a Hay and Forage Testing Analysis Form on the Soil Testing Lab website or obtain a form from your county Extension office. Attach the form to the sample and mail to the Auburn University Soil Testing Laboratory **immediately** to reduce the chance of spoilage. If possible, mail early in the week so it arrives to the laboratory without spending the weekend in shipment.

## Collecting a Silage Sample (≥ 65% moisture)

Silage can be hand collected from an upright silo or bunk.

1. Collect double handfuls of silage from 20 to 30 different areas in the silo or bunk.
2. Avoid spoiled areas and sites that have been exposed to air for several hours.
3. Place each sample into a clean container and mix thoroughly. Collect a subsample from the container and place into a 1-quart plastic bag. **Remove as much air from bag as possible when sealing.**
4. Label each sample with an ID (e.g., Back forty, Front lot, Old cotton field).
5. Fill out a Hay and Forage Testing Analysis Form on the Soil Testing Laboratory website or obtain a form from your county Extension office. Attach the form to the sample and mail to the Auburn University Soil Testing Laboratory **immediately** to reduce the chance of spoilage. If possible, mail early in the week so it arrives to the laboratory without spending the weekend in shipment.

## Collecting a Fresh Forage Sample (> 80% moisture)

Using hand sheers, collect fresh forage samples from 10 to 20 random areas of a field (not to exceed 40 acres).

1. To best represent the forage that will be consumed, **do not** clip forage to ground level, rather clip samples to the height at which the forage will be harvested or grazed.
2. Place each sample into a clean container, mix thoroughly, and empty the sample into a **paper bag** (avoid plastic bags as these may produce inaccurate results).

3. Label each sample with an ID (e.g., Back forty, Front lot, Old cotton field).
4. Fill out a Hay and Forage Testing Analysis Form on the Soil Testing Laboratory website or obtain a form from your county Extension office. Attach the form to the sample and mail to the Auburn University Soil Testing Laboratory **immediately** to reduce the chance of spoilage. If possible, mail early in the week so it arrives to the laboratory without spending the weekend in shipment.

## Sampling for Nitrates

1. Follow sampling procedures as outlined above for a specific forage category.
2. If high-moisture samples are submitted for nitrate testing (such as fresh forage, silage, or haylage), place the samples on ice or freeze them immediately after collection and send to the lab for analysis as soon as possible. For best results, deliver samples to the Auburn University Soil Testing Laboratory on the same day you collected it. This reduces the chance of nitrate reduction during storage and transportation.
3. Nitrates are more stable in hay and **do not degrade** readily over time. Submit a hay sample for nitrate testing according to the outlined procedure above.
4. Label each sample with an ID (e.g., Back forty, Front lot, Old cotton field).

<sup>1</sup>Go to [www.aces.edu](http://www.aces.edu) for a listing of county Extension coordinators and regional Extension agents. Watch the Alabama Cooperative Extension YouTube Channel video *How to Pull a Hay Sample* on how to properly collect a representative forage sample.

<sup>2</sup>Baleage is a form of haylage that has been baled and wrapped.



Kim Mullenix, *Extension Beef Cattle Systems Specialist*; and Jennifer Johnson, *Extension Forage Specialist*

For more information, contact your county Extension office. Visit [www.aces.edu/directory](http://www.aces.edu/directory).

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