Dairy One
Forage Laboratory

Collecting a Forage Sample

An analysis is only as good as the sample submitted. Taking a good representative sample of your feed is the first and most critical step of the analysis process, yet it is often the step that is the most taken for granted. The key to submitting a good sample is to collect several subsamples to form a composite. Remember, the one pound sample that you submit for analysis is going represent several tons of feed. Thus, you want to be sure that it represents a good cross-section of the feed, not just one bale. For example, if you sampled the worst bale in the lot, feeding recommendations based on this information would result in overfeeding and increased feed cost. A composite sample will be more representative of your entire feed store.

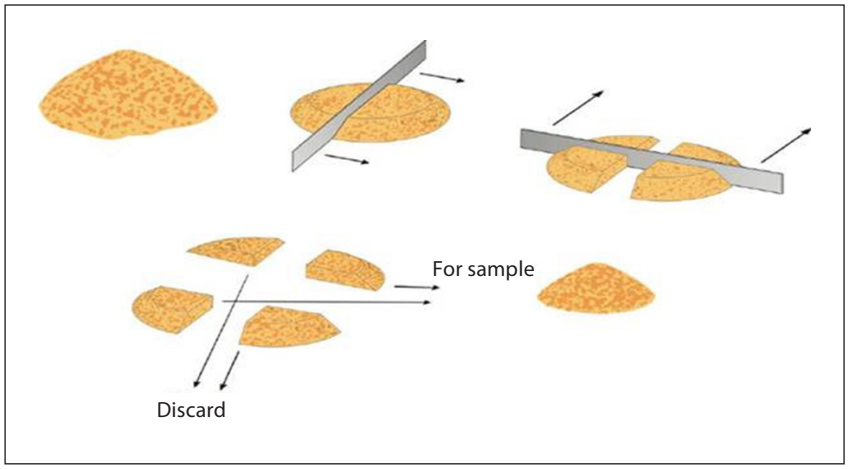
Guidelines
Submit samples in a quart sized zip-lock bag. See reverse side for approximate sample in bag weights.

Hay – Hays of different types, cuttings or lots should be sampled separately. Using a Penn State Forage Sampler (or other suitable hay probe), bore 12 - 20 bales selected at random through the center of the small square end. For round bales, sample on the curved side with core perpendicular to the side. Combine all core samples.

If there is an excess of cored forage that will not fit into a quart sized sample bag, use the cone and quarter method (diagrammed below) to further reduce the sample size but retain an accurate representation of the larger sample to be submitted.

Empty your sample on a flat clean surface (or piece of plastic) and pile the sample into a cone-like shape being careful to minimize leaf shatter. * Flatten the top, divide the cone into four quarters, then discard the two quarters diagonally to each other and combine the other two. If the sample is still too large, repeat the process. Continue this process until two quarters can fill the sample bag.

**** Important Note:** Using the cone and quarter method for dry alfalfa hay may inadvertently cause leaf shatter and yield a biased sample. Instead, it's best to submit all the cores pulled. These samples will be processed by the lab in their entirety. However, due to the labor necessary to grind samples sent with volumes exceeding quart sized, an extra handling fee is applicable.*



Silage from bunk silos – Collect only freshly removed material. Using a loader bucket or face shaver, remove material from the face of the bunk in a manner similar to how you are currently feeding. Create a pile on the bunker floor and collect 5 – 8 handfuls of silage in a clean plastic bucket. Thoroughly blend the silage in the bucket and take a one pound (0.5 kg) composite sample (typically 2-3 handfuls).

Alternatively, load a mixer wagon, mix for several minutes, discharge 15 – 20 pounds of the blended silage and take a one pound (0.5kg) sample (typically 2-3 handfuls) from the discharged pile. Fill the sample bag, press out air, tightly seal and submit the blended sample for analysis.

Silage from silage bags- Collect 6-10 handfuls of sample from different locations across the silage face. After silage has been removed from the bag, repeat the process for a second set of samples across the freshly exposed face for a total of 12-20 handfuls of sample. Alternatively, take 12-20 cores through the side of the tube at various distances along the length. Tape holes in the plastic shut after sampling.

Combine all samples in a clean bucket. Thoroughly blend the silage in the bucket and take a one pound (0.5 kg) composite sample (typically 2-3 handfuls). Fill the sample bag, press out air, tightly seal.

Silage from tower silos- If sampling was not performed prior to ensiling, wait until fermentation is complete. Sample from below the spoiled material at the top (below the first 2-3 feet). Collect 10 handfuls while unloading in the morning and place in a clean plastic bucket. Blend thoroughly and fill sample bag half full. Repeat process at evening feeding and fill the rest of the sample bag, press out air, tightly seal and submit the blended sample for analysis.

Total Mixed Rations – Collect only freshly blended rations. Grab 12-20 handfuls of the mix from different locations in the feed bunk or from in front of 12-20 cows. All subsamples should be mixed in a clean plastic bucket to form a composite. Submit a one pound (0.5 kg) sample of the composite for analysis.

Pasture – randomly select 12-20 sites where the animals have been grazing and clip a handful of forage at grazing height. All subsamples should combined and thoroughly mixed in a clean plastic bucket to form a composite (further cutting the forage into 2 - 3 inch (5 - 8 cm) pieces aids in blending). Take a one pound (0.5 kg) sample, pack tightly in a plastic bag and freeze for 12 hours prior to submitting for analysis. Freezing will help prevent marked chemical changes due to respiration or fermentation.

Grains and Ingredients – Bin storage: randomly collect 12-20 samples as the grain is discharged and combine in a clean plastic bucket. Flat storage: grab 12-20 samples from various sites and combine in a clean plastic bucket. Thoroughly blend composite and submit one pound (0.5 kg) sample for analysis. Note: whenever possible, a grain probe should be used to take a sample.

Approximate weights in a sample bag (regardless of bag size) to avoid the extra handling fee.

Hay and Damp Hay	100g
Haylages	300g
Corn Silage and Fresh Corn Forage	450g
Corn Silage with CSPS	900g
Grains and Byproducts	450g
TMR	400g
Pasture	500g
Corn Silage, Fresh Corn Forage, and TMR (Grind all requests)	150-200g