It is important to sample forages before adding them to a livestock diet. Sampling allows producers to have a balanced ration for their livestock and test for mycotoxins. It also gives farmers a snapshot into their agronomy, harvesting and storage practices. The results of a forage sample will only be as good as the technique and effort that went in to obtaining it.

Forage samples should be divided into different lots based on the variety, maturity or field location(s). When sampling a lot, limit lot size to 200 tons or less. If a lot is greater than 200 tons, take two samples. The sample should then be quarter sampled. To quarter sample, put each sample into a bucket, mix the feed samples in the bucket thoroughly and lay the mixed sample out in a pile. Flatten the pile and then divide into quarters. Take two quarters of the pile, mix it together and place it in a sample bag to send to the lab. Final sample size should be one pint to one quart.

How To Quarter Sample

Silos, Bunkers And TMR: Scoops Or Handfuls

- Collect scoops or handfuls of forage from silos, bunkers, TMR mixers and bags. Your hand should be in an up facing position, much like a scoop. Do not shake the sample when sampling, as it will cause the fines to fall out of the sample. Scoop with your hand or scoop and place the sample in a bucket.

- When sampling from bags, take 5-6 handfuls/scoops of feed. After taking the first set of samples, remove feed for the next feeding and take another 5-6 handfuls/scoops. Mix all samples together in a bucket and quarter the sample.

- When sampling from a silo allow silage to ferment for 3 weeks and don’t take a sample from the top 3 feet. Run the silo unloader and collect 14 random handfuls/scoops¹. Put these samples into a bucket and quarter sample.

- When sampling from a bunker do not pull handfuls out from the face of the pile. This is dangerous. Use a facer or loader bucket to remove silage and place into a pile. Take 10 handfuls, place the samples into a bucket and quarter.

- When sampling from a TMR there can be a lot of variance. When feeding out, take samples from the beginning, middle and end of the bunk. Taking samples from various parts of the feed bunk is best to get an accurate analysis. Mix samples together in the bucket and quarter.

After the samples are taken and prepared, the next step is to remove as much air as possible before sealing the bag. Silages can continue to ferment after a sample is taken. If possible it is best to vacuum seal these samples. If a sample will not be mailed right away it is okay to freeze sample unless you are testing for molds and mycotoxins. Do not freeze sample for molds and mycotoxin tests.

¹ https://www.dairylandlabs.com/feed-and-forage/submit-a-sample/sampling-tips/conventional-analyses
² https://u.osu.edu/beef/2014/12/10/forage-and-feed-sampling/
A Fill out your contact information, “CC Crystal Creek®” on the email line to ensure your nutritionist receives a copy of your sample results.

B Give a clear description for each sample submitted.

C The N7 NIR Select is the most common test recommended with the Crystal Creek® nutrition program. Near Infrared Spectroscopy (NIR) is a rapid and cost effective analysis that gives information on numerous nutrients in a short amount of time compared to Wet Chemistry tests which take longer. Wet Chemistry is the term used to describe direct analysis of feedstuff nutrients. Wet chemistry analysis provides the most accurate values available for individual samples because this procedure utilizes chemicals to isolate individual nutrients.

D When testing for Molds and Mycotoxins, the TLC (Thin Layer Chromatography) test should be chosen for TMR, haylage and corn silage samples. ELISA (Enzyme Linked Immunosorbent Assay) tests should be used for grains such as high moisture shell corn and snaplage. Crystal Creek® recommends selecting the Four Toxin Package for your mycotoxin testing needs. Do not freeze these samples as freezing can cause incorrect results.

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Forage Sampling

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E  Fermentation Quality Analysis / VFA Profile test will give you information on what can be improved and how it will feed out. Many factors contribute to the value of the ensiled feed including processing, moisture, and packing. This test would be recommended for silage after 21 days of storage, when it has reached a stable condition.

F  Add On Wet Chemistry Mineral Package Tests

If precise mineral levels are needed, it is recommended to use the wet chemistry add-on packages. The M2 test looks at Ca, P, Mg, K, and S. All these minerals are tested for in the NIR tests except when testing TMR samples, but wet chemistry mineral tests are more accurate. M3 and M7 should be chosen when using DCAD diets.

G  Individual Wet Chemistry Tests

Most of these individual tests are part of an NIR packages and some are a part of wet chemistry tests.