



Sampling Feeds for Mold and Mycotoxin Analysis

L. E. Chase¹ and G. C. Bergstrom²

¹ Department of Animal Science

² Department of Plant Pathology

Cornell University

One of the most critical components of an investigation of a potential mold/mycotoxin problem is obtaining a **representative** sample for submission to the analytical lab. It is important to realize that this process is difficult and requires some time and planning. There are a number of problems that exist in obtaining a representative sample. These include:

- Molds and mycotoxins are frequently present in small amounts.
- Molds and mycotoxins may not be evenly distributed throughout the feed. They may exist in isolated, small areas of the stored feed.
- Additional growth could occur during shipping to the laboratory.
- Mycotoxins could continue to be produced during storage. Thus, the sample taken today may not be indicative of future levels.

The following sampling procedures are suggested. These were adapted from information published by Penn State.

A. Dry feeds (> 88% dry matter) –

- Take a minimum of 8 – 12 samples at each of 3 – 5 feedings or when feed is removed from the storage structure.
- Mix these samples (from each feeding), save 1 – 2 pounds and store in a cool, dry place. These can be labeled as composite 1,2. etc.
- Mix at least 3 – 5 of the composite samples together. Take a 1-2 pound sample to be sent to the laboratory. You should also retain 1-2 of these samples on the farm in case additional analyses are done later.
- Double bag these samples and keep them cool and dry.
- Ship samples early in the week to arrive at the laboratory Tuesday through Thursday. If shipping overnight or next-day delivery, don't send samples after Wednesday.

B. Wet samples – (Upright silos or bags)

- Take a minimum of 8 – 12 samples at each of 3 – 5 feedings or when feed is removed from storage.

- Mix these samples and save at least 1-2 lbs. Place this sample in a double plastic bag, squeeze out as much air as possible, seal and store in a refrigerator or freezer.
- Mix the 3 – 5 composite samples together. Take at least 2 lbs. of this composited feed for submission to the lab. Double bag this in plastic bags and squeeze out as much air as possible.

C. Wet samples – (Bunker silos)

- The objective is to obtain a representative sample of the entire silo face.
- The preferred method is to scrape feed from the entire width and height of the silo face. Alternatively, you could dig a vertical trench about 1/3 of the distance from each wall.
- Mix the forage in a mixer wagon and sample this for analysis.
- You should do this over 2-4 day period.
- Place the samples from each day in a plastic bag and squeeze out as much air as possible.
- Composite (mix) the daily samples and place a 1-2 pound sample in a plastic bag, squeeze out the air and seal. Double bag the sample.

D. Additional Guidelines –

- Save 1 – 2 other samples on the farm in case additional analyses may be needed. These samples should be labeled and frozen.
- Store any wet samples in a freezer until you are ready to send them to the lab.
- Wet samples should always be sent as a frozen sample to the lab.
- You could hand deliver these samples to the lab or ship by overnight mail. If they are shipped, you may need to include an ice pack to keep them frozen.
- Ship samples to arrive at the lab on Tuesday through Thursday.
- **Don't just take a "grab" sample from 1 location on 1 day and send it to the lab.** This is not a representative sample of the stored feed and the results will be limited in value.
- **Check with the specific lab you are using for any sample size, mailing or shipping instructions.**