

# Mold & Mycotoxin Sampling Tips



## Shipping

Proper sample handling is critical for accurate mold and mycotoxin analysis. When shipping samples, eliminating oxygen and cooling the sample will help conserve the sample integrity.

The recommended methods to properly preserve a sample for shipping are:

- Vacuum-sealed. Inexpensive Food Saver® or Ziploc® sealing systems work well for vacuum-sealing mold and mycotoxin samples.
- Keep sample cool! Cooling provides additional protection for multiple day or weekend shipments. Cold packs can be included in shipments but should not be in direct contact with the sample. Be sure samples are **not allowed to freeze** as it may result in erroneous mold, yeast and toxin counts.

## Sampling Tips

Aflatoxin contamination in milk is strictly regulated and is directly proportional to the concentration of aflatoxin in the feed.

Bear in mind that aflatoxin is not uniformly present throughout a feedstuff and improper sampling can result in large analytical variation.

To illustrate this problem consider:

- Within a contaminated ear of corn, kernels typically contain 0 - 400,000 ppb aflatoxin.
- One single kernel contaminated with 400,000 ppb aflatoxin causes an overall contamination concentration of 26 ppb in a 10-pound sample.
- 20 individual samples from a load of contaminated cottonseed often range from 15 to 160 ppb with an average of 74 ppb.

Proper feed sampling, along with accurate testing, is crucial in determining aflatoxin risks in herd health.

## Sampling at harvest

Sampling feed at harvest is the easiest time to test for aflatoxin. Here are some tips:

- Take ½ gallon samples from each load of feed as it is flowing into the bin
- Avoid sampling from the very beginning and very end of each load
- Composite several samples and mix thoroughly

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## Sampling stored feed

Sampling stored feed can be challenging. Use caution and care when pulling samples and follow these recommendations:

- For sampling instructions of grain in **trucks, railcars, and storage bins**, download **The USDA Grain Inspection Sampling Handbook** from [http://www.gipsa.usda.gov/publications/fgis/handbooks/gihbk1\\_ins\\_phb.html](http://www.gipsa.usda.gov/publications/fgis/handbooks/gihbk1_ins_phb.html)
- When sampling **horizontal bunkers**:
  - Use a face shaver to shave silage from the entire vertical and horizontal face of the feed-out surface.
  - Load the silage into a TMR mixer and mix for 2-5 minutes
  - Unload the silage and take 12 or more “grab” samples from throughout the pile
- **Vertical silos and silage bags** are extremely difficult to sample after filling. Contaminated areas of the field are likely to be concentrated in small areas of the silo.

\*Take great caution when interpreting results from samples taking at feed out from these storage structures.

## Sub-sampling

Sub-sampling is often required to reduce samples to a reasonable size for shipping. Maintaining sampling accuracy is best done by using the coning and quartering technique for most feedstuffs. This can be accomplished by:

- Form the sample into a cone by pulling sample from the bottom edges to the top center of the sample.
- Flattening the cone
- Divide the cone into quarters
- Discard opposite corners to reduce the sample size
- Repeat as needed to obtain the desired sample size.

