Do Not Feed Moldy Hay to Horses

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Haymaking conditions during 2014 were poor in many areas of the U.S. A lot of hay was rained on or left lying in the field for prolonged periods. Poor drying weather also meant some hay was put up wetter than usual and mold growth occurred in storage. Mold will likely grow on hay without preservative added at moisture levels above 15%. Mold growth produces heat and can result in large amounts of dry matter and total digestible nutrient (TDN) loss – a loss of carbohydrates and binding of proteins. In some cases, heating can be great enough to cause spontaneous combustion and fire.

Molds commonly found in hay include *Alternaria*, *Aspergillus*, *Cladosporum*, *Fusarium*, *Mucor*, *Penicillium*, and *Rhizopus*. These molds can produce spores that cause respiratory problems, especially in horses and, under some conditions, will produce mycotoxins.

Sometimes mold spores are counted on moldy feeds to obtain an indication of the extent of molding and relative feeding risks. Table 1 contains classification of risks at various mold spore counts.

While most molds do not produce mycotoxins, presence of mold indicates the possibility of mycotoxin presence and animals being fed moldy hay should be watched carefully for mycotoxin symptoms.

Table 1. Feeding Risks[a] at Various Mold Spore Counts

Mold Spore Count Per Gram	Feeding Risk and Cautions
Under 500,000	Relatively low risk
1/2 to 1 million	Relatively safe
1 to 2 million	Feed with caution
2 to 3 million	Closely observe animals and performance
3 to 5 million	Dilute with other feeds
Over 5 million	Discontinue feeding

[a] Risks refer primarily to effect of mold per se without regard to possible mycotoxin content. Dust may also reduce feed consumption.

Data from Richard Adams, Kenneth Kephart, Virginia Ishler, Lawrence Hutchinson, and Gregory Roth. 1993. Mold and mycotoxin problems in livestock feeding. The Pennsylvania State University.

Mycotoxins effects on animals:

- Intake reduction or feed refusal.
- Reduced nutrient absorption and impaired metabolism, including altered digestion and microbial growth, diarrhea, intestinal irritation, reduced production, lower fertility, abortions, lethargy, and increased morbidity.
- Alterations in the endocrine and exocrine systems.
- Suppression of the immune system which predisposes horses to many diseases. A suppressed immune system may also cause lack of response to medications and failure of vaccine programs.
- Cellular death causing organ damage.

Bottom line, if hay is moldy, do not feed it to horses.