Dairy One Forage Laboratory

June 2016 Newsletter

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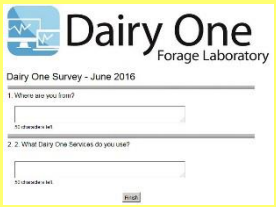

Managing and Preventing Moldy Hay

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Dairy One and Equi-Analytical

Mold in hay is a year round concern, but harvest is the best time to minimize the potential of having moldy hay to deal with for the rest of the year. So far in the Northeast, this looks like a great spring for making hay. Drier soil conditions and light rain results in less potential for mold growth while the hay is growing and promotes faster drying after mowing.

Why are we concerned?

First, before we even feed out the hay, if mold develops during storage there is loss of dry matter and total digestible nutrients (TDN) as mold eats the hay rather than your animals. When you have moldy hay as your feed source, the next concern is the development of respiratory diseases or allergic reactions. Allergic reactions are more common in young animals and horses, especially in poorly ventilated areas. Moldy hay can result in decreased palatability and intake by animals and could be a heath concern for humans handling the hay.

How do we end up with moldy hay?

No one goes into the hay season expecting to make moldy hay. Weather, moisture, and to a lesser extent storage conditions, can result in mold development.

1. **Cool and Wet Growing Conditions**: First, if weather conditions are wet and cool, mold can develop on the grass before it is even harvested. Second, under these conditions hay can take longer to dry because the soil is wetter, and third, if the soil is wet, the hay will continue to absorb moisture from the soil in the windrow.
2. **Rain on Mowed Hay:** When hay gets rained on before it can get dry enough and baled, the potential for mold growth increases. The longer it takes to get the hay dry, the more mold can grow in the field before baling. Getting out and raking or tedding hay as soon as possible after a rain to facilitate drying, will limit the potential for mold growth.
3. **Baling too wet:** When hay is baled with a moisture content greater than 14% or a dry matter content of less than 86%, mold has a greater potential to develop during storage. The potential for mold growth increases as the harvest moisture increases. Treating hay with a preservative, such as propionic

acid, at harvest can limit the opportunity of mold growth. If you cannot avoid harvesting hay that has a higher moisture level than desired, there are a few things you can do during storage to help reduce moisture content and the potential for mold growth.

a. Store hay under cover to limit the addition of new moisture from precipitation

b. Stack in lower tiers - more room between the roof and the bales will allow moisture to move out of the bales

c. Leave more space between bales - this will allow for some moisture to move out and also prevent the moisture in wetter bales from moving into drier bales

d. Increase ventilation - more air movement will help hay continue to dry

4. **Feed out method:** Hay should be offered in an amount that animals are going to consume in a short period of time (within 24 hours), thus reducing the potential to get rained on or other contaminants to develop in the feeding equipment. If you find the hay in your feeder to be moldy, the feeder should be thoroughly cleaned before new hay is added to limit the potential for new mold growth.

Testing and Recommendations

Not all moldy hay is low quality or has visible mold. If you suspect that mold growing in your hay is causing allergic, respiratory or production problems in your animals, have it tested for mold. If the test is positive, not all moldy hay has to be thrown out as there are some levels of mold spores that are safe or manageable (Table 1).

Table 1. Feeding risks at various mold spore counts

Mold Spore Count per gram	Feeding Risks and Cautions
Under 500.000	Relatively Low Risk
500,000 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

Data from Richard S. Adams, Kenneth B. Kephart, Virginia A. Ishler, Lawrence J. Hutchinson, and Gregory W. Roth. 1993. Mold and Mycotoxin problems in livestock feeding. The Pennsylvania State University.

If you have moldy hay, there are a few management steps you can take if the range of spores is under 3 million (Table 1).

1. Open up moldy or dusty hay and feed it outside to decrease the potential for the animal to inhale the dust and mold spores.
2. Soak the hay before feeding for 5 to 30 minutes and feed the hay wet. This will accomplish two things - washing off the dust and mold spores and suppressing airborne dust while the animal is eating.

If mold counts are above 3 million and you are able to find an alternative hay, then discontinue feeding the moldy hay to minimize risk.

Advanced Services from the Dairy One Forage Lab

(125) Total Fatty Acids - $49/sample
The Fatty Acid profile of feeds is used to calculate fatty acid balances in rations and determine where fat supplementation is needed. The supply and balance of fatty acids in a ration can influence milk fat, milk production, and reproductive performance.

(611) Mold and Yeast - $25/sample
Mold and Yeast counts are reported as Colony Forming Units (CFU)/gram. When submitting samples for mold and yeast analysis, do not freeze samples as freezing will reduce the counts and not represent the true mold level in the sample. Dry hay samples can be shipped as sampled. If the sample is wet for hay or a wet feed or you are concerned that shipping will take more the 3 days, ship the sample on ice to limit mold growth during transportation. Mold and yeast analyses are $25/sample and will take approximately 1 week to process from the date received at the lab.

(612) Salmonella - $30/sample
Salmonella testing is appropriate for verifying if a feed safety system designed to reduce or eliminate salmonella from the feed is working or determine if a feed ingredient is compliant with a desired specification. Salmonella testing should not be used to prove the safety of a feed or feed ingredient. (National Grain and Feed Association, 2013)

(613) E. coli O157 - $35/sample
E. coli O157 contamination in feeds can occur and animals can become infected and continue to shed cells for months.

(229) Carbon - $10/sample
Measure of the total organic carbon in the sample and in plants will be related to the fiber and structural components of the plant.

Check out the Advanced Services from Dairy One Forage Lab on dairyone.com/advanced-services.

*All prices in US dollars. Prices subject to change without notice.

Survey:

Complete survey this month to get entered to win one of the "June is Dairy Month" T-Shirts from Dairy One!

Upcoming Events

June 6th and 9th - 2016 Advanced Dairy Nutrition Short Course - Cornell University, Ithaca, NY http://ansci.cals.cornell.edu/news-events/advanced-dairy-nutrition/registration

June 15th and 16th - Four-State Dairy Nutrition and Management Conference - Dubuque, IA http://www.extension.umn.edu/agriculture/dairy/learning-opportunities/four-state-dairy-conference/index.html

Dairy One
Measurement to Management Tour 2016

Once again, the entire Dairy One Team including the Forage Lab, Agro-One, Animal Health Diagnostics, Agricultural Management Resources, DHIA Field Testing, and Agricultural Consulting Services will be taking to the road. The 2016 Measurement to Management Tour (M2M) will bring you information on all the services we have available and how they could be used by you and/or your consulting team. We will be stopping at 3 different member farms to spend the morning touring the farm and showcasing areas we can help you measure and relate it to your management. In addition, each location will have a guest speaker in one of the management areas.

Tour Dates and Locations:

Tuesday, August 2nd - Manning Dairy - St. Albans, VT.

Topic: Soil Health

Guest Speaker: Bob Burger - Woods End Lab, Maine -
The Solvita Test and Field Testing for Soil Health

Wednesday, August 3rd- Black Creek Farm - Salem, NY.
Topic: Milk Quality
Guest Speaker: Dr. Mike Zurakowski - Quality Milk Production Services, Cornell University- Milk quality testing and culturing

Thursday, August 4th - AR Joy Farm - Cochranville, PA.
Topic: Feed Management and Records
Guest Speaker: Virginia Ishler - Penn State University - Using Feeding Records and Testing when Making Feeding Decisions

Schedule for each event:
10:00 - 10:15 AM,
Introduction of Dairy One and Dairy One staff at the event

10:15 - 11:00 AM,
Feeding Management and Records - Guest Speaker

11:00 - 12:00,Dairy One Business Unit Presentations
Noon-1:00pm, Lunch and discussions

1:30pm, Adjourn

To Register:
Pre-registration is encouraged. If you are interested in one of the M2M dates please call Dairy One at 800-344-2697 and press zero (0) for Jennifer Hamilton, our receptionist or email marketing@dairyone.com to reserve your spot.

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