

MANAGING RAINED-ON HAY

Nutritional Sciences

Hay that has been cut but experiences baling delay due to rain will lose feed quality in proportion to the length of time the crop lays in the field. USDA research in Michigan shows that up to 4% of the dry matter yield will be lost for each day the hay remains laying in the field. Typical dry matter losses of 10% for bud-stage alfalfa can double with 1 inch and reach 40-50% under 1.5 - 2.5 inches of rain.

Rain decreases the nutritional quality of hay by:

- (1) Prolonging respiration losses. Cells of cut forages are alive and functioning until the moisture of hay falls below about 45% moisture. If rain delays drying and cells metabolize for extended periods, carbohydrates will be depleted and forage quality will be lowered. Respiration will account for 2-8% of dry matter losses during ideal conditions but can reach losses of 15% during poor drying conditions.
- (2) Leaching of the energy-rich, water soluble carbohydrates. Leaching is influenced by type and maturity of forage and the amount and frequency of the rainfall. Bud stage alfalfa will undergo more leaching than full bloom hay due to lower soluble nutrients in mature plants. Wisconsin data shows leaching and respiration dry matter losses increase from only 2% with no rain to nearly 30% with 1.5 inches of rain. Reducing soluble carbohydrates will result in hay with higher percent fiber content.
- (3) Increasing leaf shatter. Leaf shatter losses can more than double when hay experiences a hard downpour. Although leaf shatter reduces yields, the percent crude protein in the hay may not be significantly reduced

because proteins are not leached as readily as soluble sugars and minerals.

For this reason, the percentage of crude protein in moderately rain damaged hay can actually increase. Protein analysis alone will not accurately judge hay quality but should include fiber analysis or Relative Feed Value (RFV) to account for elevated fiber levels resulting from leaching losses.

Steps to Consider When Baling Rained-On Hay

- (1) Remember to always check moisture levels before baling. For accurate results use a microwave, Koster or electronic, moisture tester.
- (2) Recognize that rained-on hay will be more prone to molding due to the increased exposure to soil-borne fungi.
- (3) Analyze hay for nutrient content and Relative Feed Value.
- (4) Consult with your nutritionist and consider using this lower quality hay for livestock with low nutritional demands.
- (5) Use Pioneer® brand 1155 Alfalfa Hay Inoculant to:
 - bale sooner at higher moistures (25% moisture for small square bales and 20% moisture for large round bales).
 - reduce the risk of rain-damage.
 - save more leaves.
 - reduce spoilage losses.

Pioneer® brand 1155 is the only alfalfa-specific, non-fermentative, user friendly hay product on the market...the final management step in putting up high quality alfalfa hay!

