

Minimizing Hay Storage Loss Demonstration

300 Day Grazing – Emphasis Program

Objectives:

Evaluate the change in hay quantity and quality as well as the economics of losses associated with various hay storage techniques.

Methods & Procedures:

Experimental Unit: Bale

Number of Experimental Units Needed Per Treatment: 4 to 6

Treatments –

Control	Alternative(s)*
1) Option 1: twine wrapped, stored outside on the ground uncovered 2) Option 2: net wrapped, stored outside, on the ground, uncovered (this eliminates alternative method #1)	1) Net wrapped, stored outside, on the ground, uncovered 2) Net or twine wrapped, stored outside, elevated on pallets 3) Net or twine wrapped, stored outside, elevated, covered with a tarp 4) Net or twine wrapped, stored outside, on ground, covered with a tarp 5) Hay – stored inside shed/barn

*Only one alternative is necessary; however, the demonstration is not limited to one alternative either.

- Weigh each bale and determine dry matter weight.
 - To determine dry matter content take 6 core samples per bale, 3 samples per each side of bale and calculate a dry matter weight.
- Measure forage quality (routine analysis) of the treatment group
- Record the costs associated with each adopted treatment.
 - Apply costs per bale (twine cost, net wrap cost, tarp cost, barn cost, etc.).
 - Barn and Tarp costs should be derived by calculating the number of bales protected annually. Useful age of barn and tarps should also be recorded.
- Record rainfall events and amounts or utilize local weather station data (this can help with interpretation of results).
- Since bales will be exposed to winter weather elements try to make final observations toward the mid-point of winter feeding (this may not be feasible in all circumstances).

- Remove any deteriorated portion of the bales, re-weigh and re-sample for dry matter.

Data Analysis:

- 1) Determine the amount of dry matter loss per bale based on intact weights adjusted for dry matter content.
- 2) Determine the amount of dry matter loss per bale based on weights whereby deteriorated portions were removed.
- 3) Determine the storage cost per bale.
- 4) Determine the value of dry matter retained per bale.
- 5) Determine the return per bale (and payout period for structures) based on storage losses.

Outcomes:

- 1) Economic returns to hay storage practices.
- 2) Percent hay loss for control group vs. alternative method.
- 3) Pounds of hay lost for control group vs. alternative method.

Outputs:

- 1) Number of producers reached through field days, news letters and presentations.
- 2) Adoption of practices by producers

Hay Storage Loss

Control Method

Agent Name: _____
 Producer Name: _____

Hay

Hay Storage method _____
 Hay Analysis (*Routine*) Attach initial & final analysis
 Hay Type _____
 Harvest Date _____
 Final Sample Date _____
 Bale Value _____
 Bale size (*length x height*) _____

Cost per bale

Twine cost (sisal or plastic) _____
 Net wrap _____
 Misc. _____

Rainfall

Harvest - Feb. (*calendar included*)

Record Daily Amounts _____

Bale Number	Weight @ harvest	DM content @ harvest	Weight after storing	DM content after storing	Weight of deteriorated portion	DM Content of deteriorated portion
1						
2						
3						
4						
5						
6						

Hay Storage Loss

Alternative Method

Agent Name: _____
 Producer Name: _____

Hay

Hay Storage method _____
 Hay Analysis (*Routine*) Attach initial & final analysis
 Hay Type _____
 Harvest Date _____
 Final Sample Date _____
 Bale Value _____
 Bale size (*length x height*) _____

Cost per bale

Twine (sisal or plastic) _____
 Net wrap _____
 Tarp _____
 Barn _____
 Misc. _____

Rainfall

Harvest – Feb. (*calendar included*)

Record Daily Amounts _____

Bale Number	Weight @ harvest	Dry Matter content	Weight after storing	DM content after storing	Weight of deteriorated portion	DM Content of deteriorated portion
1						
2						
3						
4						
5						
6						

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