This PDF is a version of an online module that is part of the Principles for Transitioning to Organic Farming project. For all of our educational materials, please visit:

http://organictransition.umn.edu/

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Harvesting and Storage of Forages

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under grant number 2013-51106-21005.

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Introduction

Harvesting and Storage of Forages

I. What is Hay?
II. Cutting and Drying
III. Raking
IV. Baling
V. Transport
VI. Storage
VII. Moisture Content

What Is Hay?

- Forage stored in air
- Low moisture (>20%)
- Sun-dried
- Packaged

Goals of Haymaking

- Minimize field losses
- Minimize storage losses

Alfalfa hay that is rained-on during drying and has suffered loss of both forage quality and yield.

Alfalfa Leaf Shattering

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Cutting Standing Forage

Windrows

- Will dry on top
- Need raking so underside will dry

Wide Swath

Exposes more of forage to sun and wind

Forage Drying

- Forage moisture content changes from ~80% uncut and drying to <20%
- Moisture loss depends on sun's energy; aided by wind, low humidity
- Typically takes 2-4 days

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Wheel Rake

Side Bar Rake

Rotary Rake

Windrow Inverter

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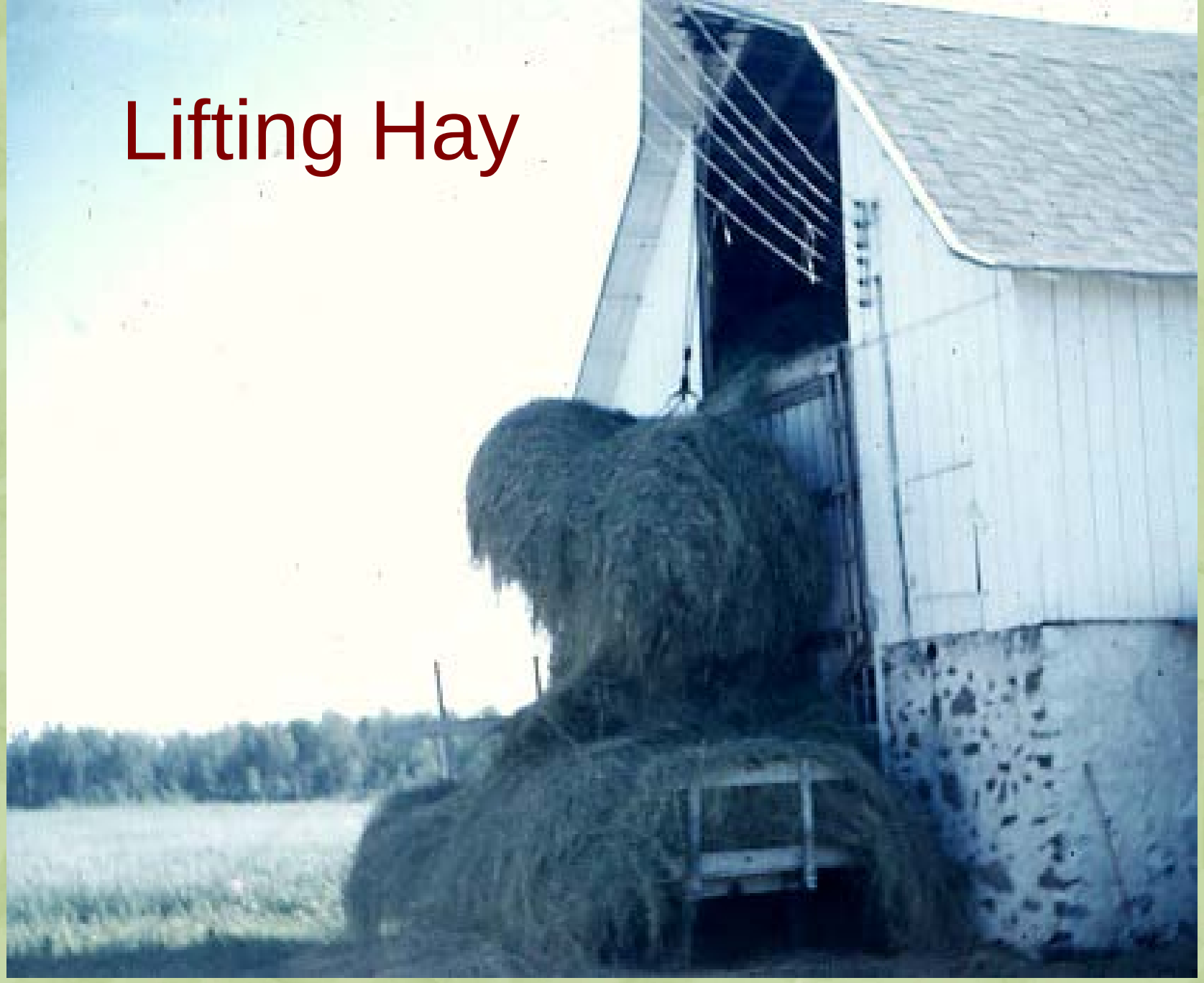
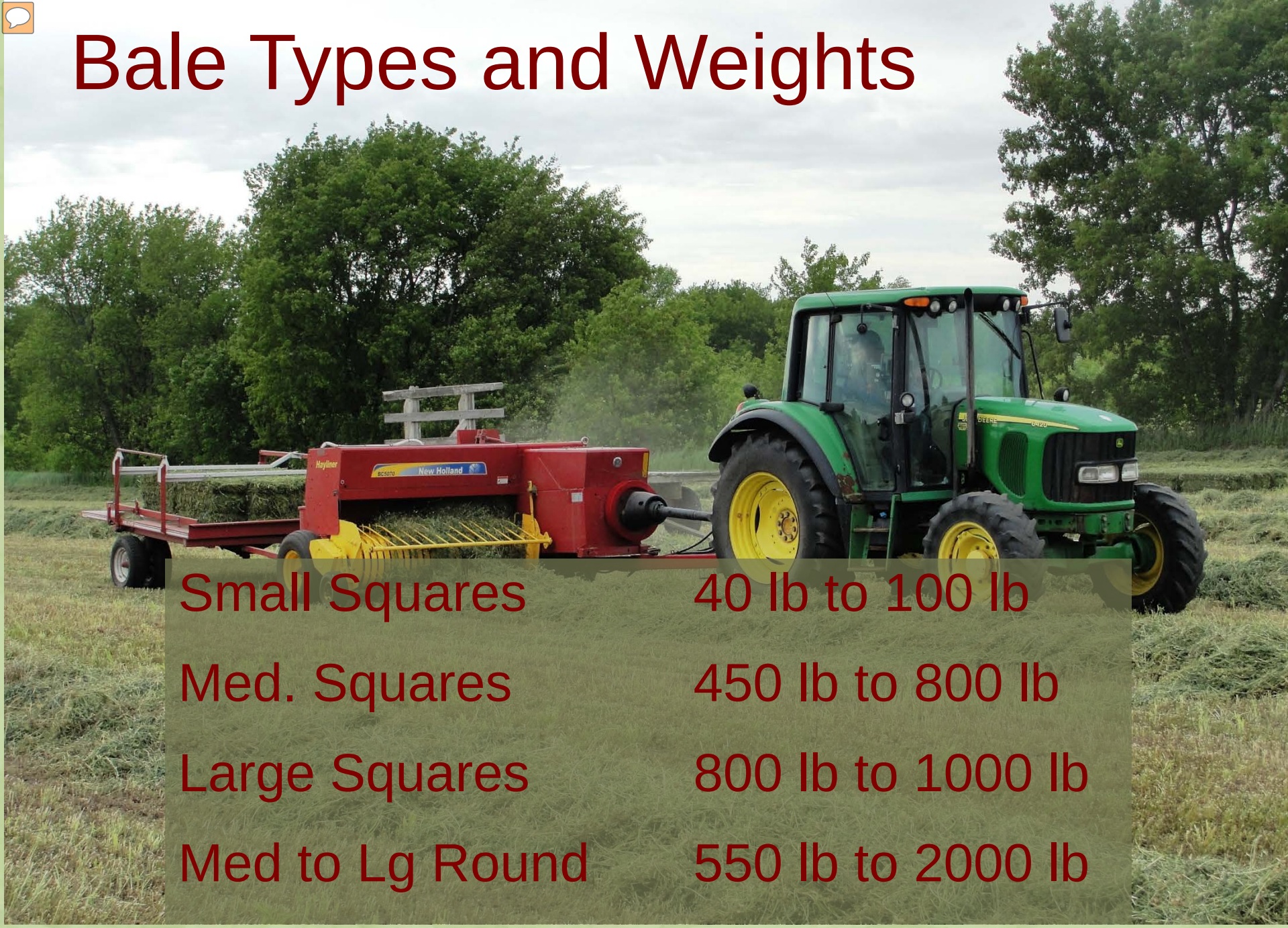
Hay Wagon

Lifting Hay



Hay Lifter

Bale Types and Weights



Small Squares	40 lb to 100 lb
Med. Squares	450 lb to 800 lb
Large Squares	800 lb to 1000 lb
Med to Lg Round	550 lb to 2000 lb

Bale Packaging

Older Square Baler

Bale Thrower

Large Square Baler

Large Round Baler

Large Round Baler

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Large Round Bale Pickup

Large Round Bale Transport

Large Rectangular Bale Pickup

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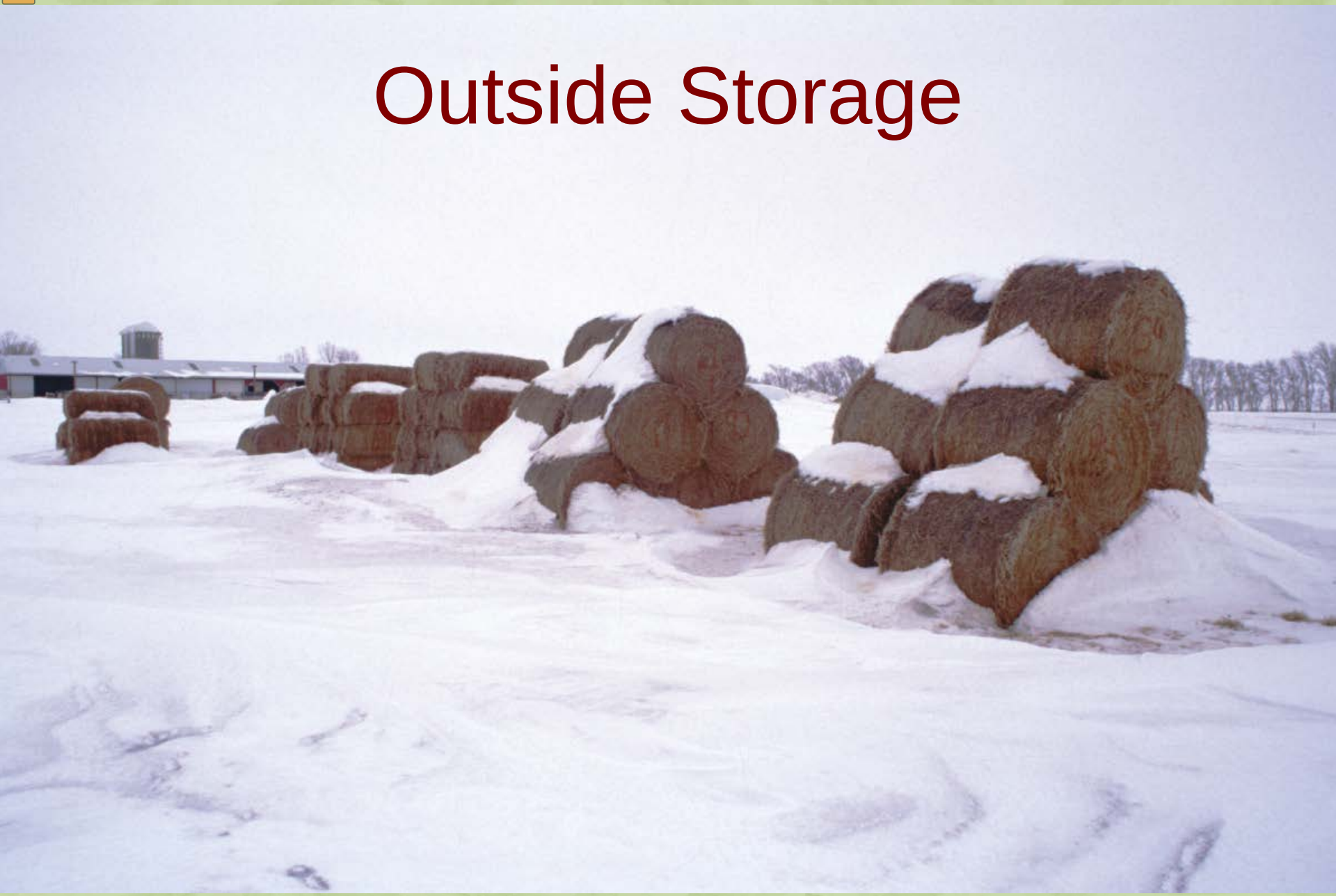
Moldy Bales

Round Bales in Field

Outside Storage




Following
Spring

Store in Well-Drained Spot

Sync title to second sentence

Storage on Pallets or Gravel

Plastic Covering

Plastic Wrapping

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Improper Moisture

> 20%: risk of mold growth

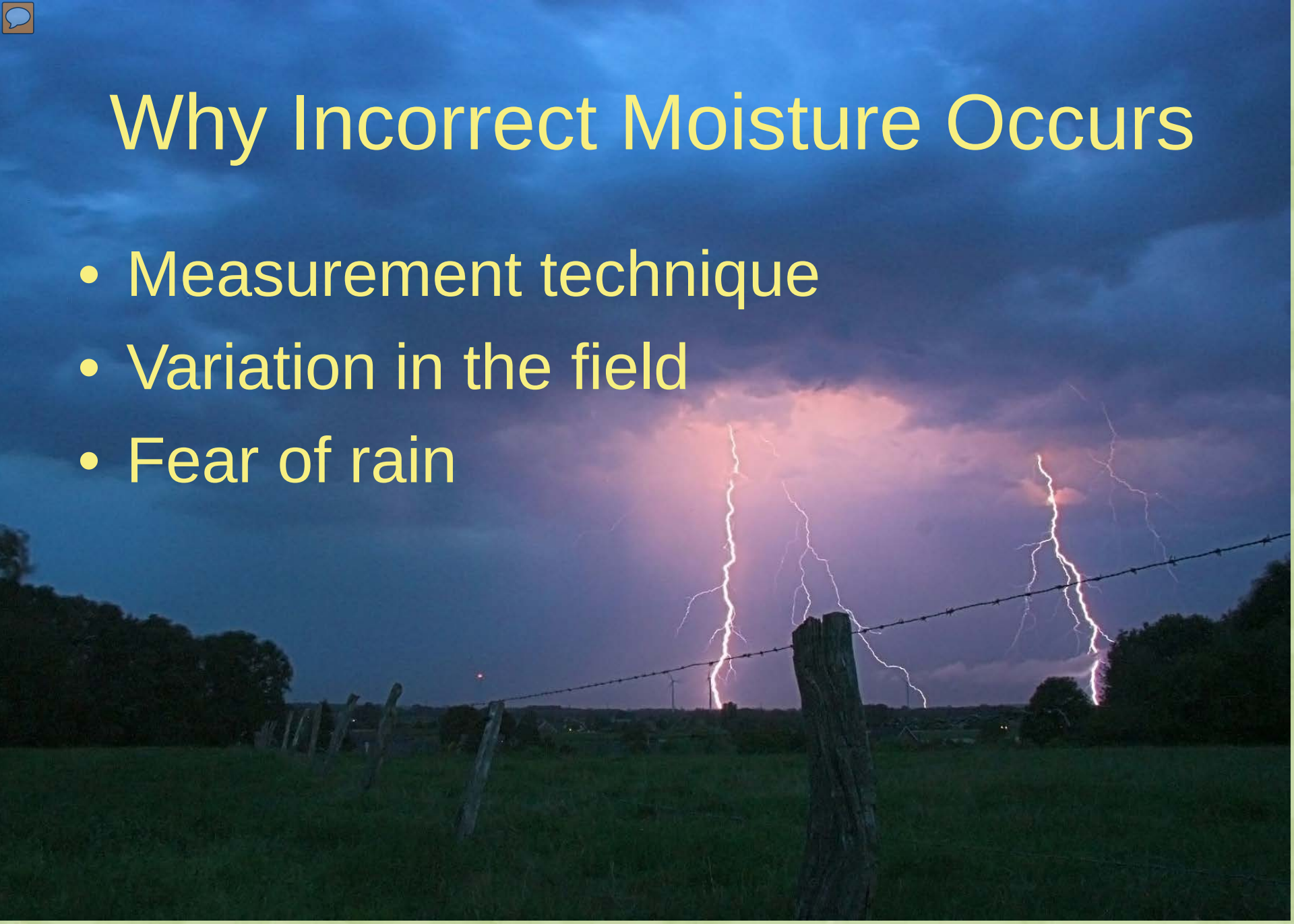
< 15%: excess field loss due to leaf shattering

Moldy alfalfa hay

Heat damaged alfalfa hay

Why Incorrect Moisture Occurs

- Measurement technique
- Variation in the field
- Fear of rain



Hay Moisture

- Determined in the field by farmer
  - Subjective: feel, smell
  - Electronic
  - Drying a subsample

Conclusions

- Haymaking challenges:
  - Minimize field losses
  - Minimize storage losses
- Make hay while the sun shines!

REFERENCES and RESOURCES

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