

GETTING THE MOST FROM YOUR CUTTING EQUIPMENT



Prof. Kevin Shinnors

Professor of Agricultural Engineering



Getting the Most from Your Cutting Equipment

Today's Message

- ✓ **To get faster drying:**
 - **Use rolls with a lot of crushing area**
 - **Set and maintain roll clearance**
 - **Spread swath as wide as possible**



**Getting the
Most from
Your Cutting
Equipment**

Today's Message

- ✓ **New intensive conditioners:**
 - **Incremental drying improvement**
 - **No “magic bullets”**



**Getting the
Most from
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Equipment**

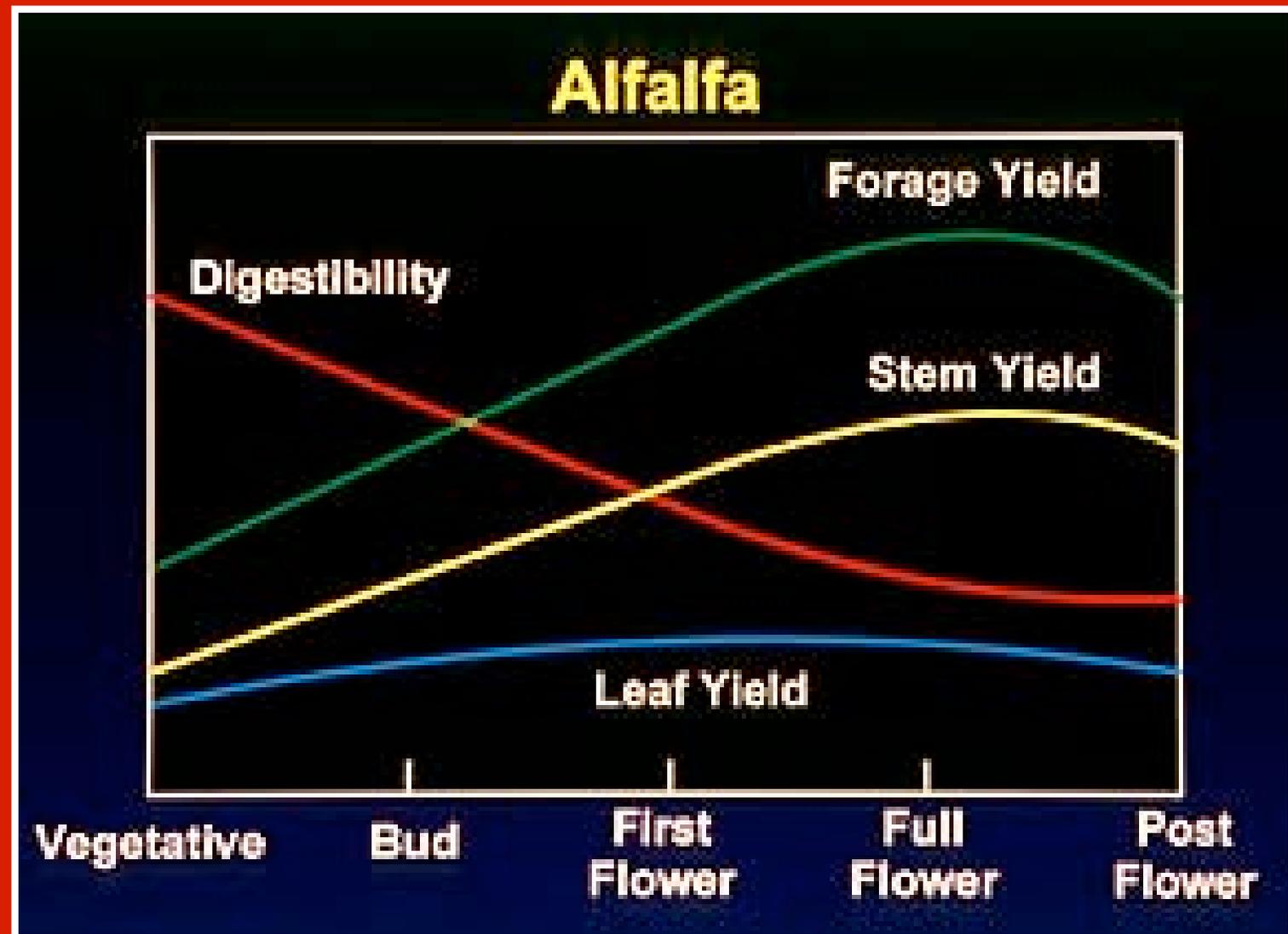
Today's Message

- ✓ **Along with faster drying:**
 - **Get it done fast when weather cooperates**
 - **Cut faster and wider**



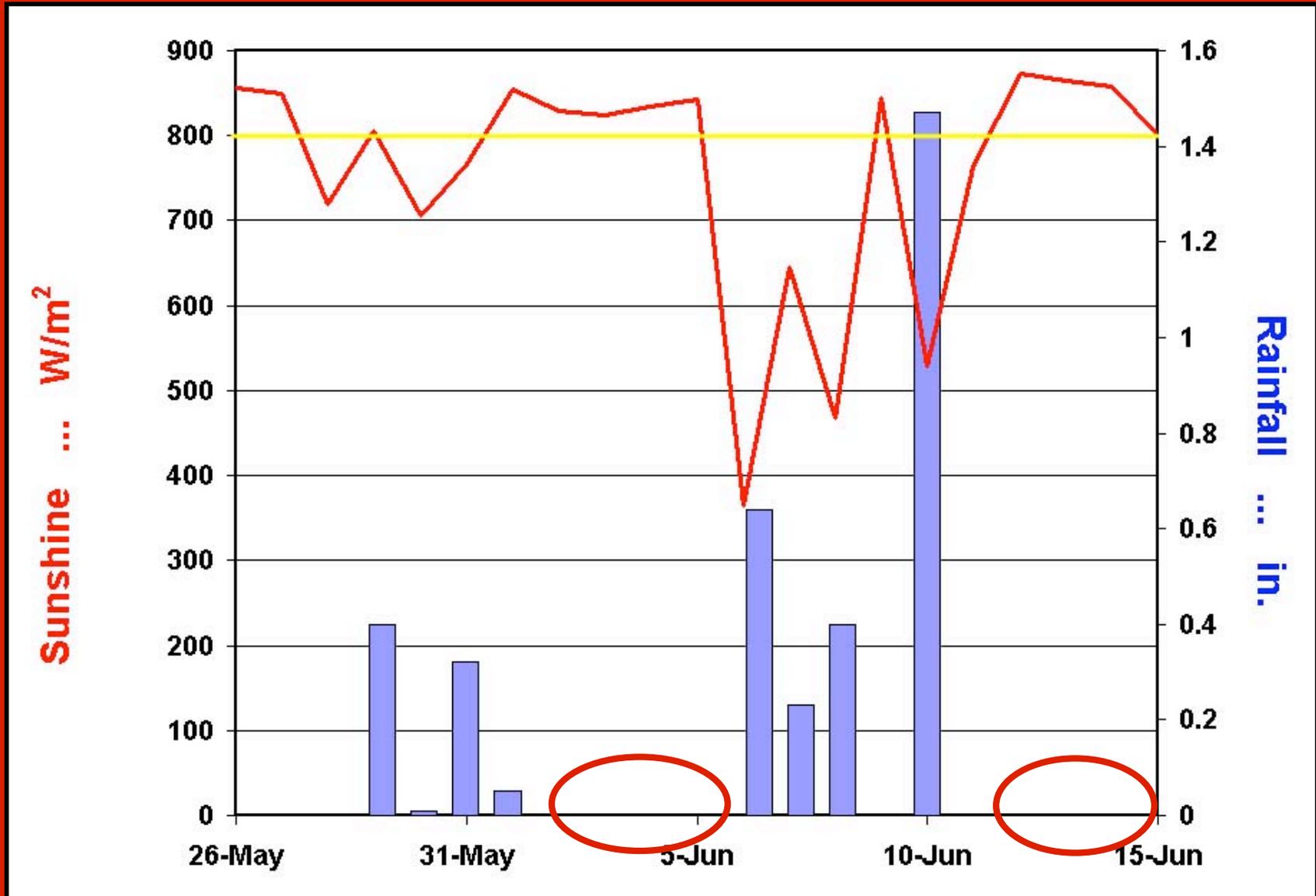
Getting the
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Equipment

Quality & Productivity



Getting the Most from Your Cutting Equipment

Quality & Productivity



Getting the Most from Your Cutting Equipment

Productivity

✓ How to be more productive:

- Cut faster
- Cut wider



Getting the
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Productivity

- ✓ **Disk cutting technology:**
 - Cut through any crop or condition
 - Faster field speed: 2x to 3x
 - More costly per foot: 25 to 30%
 - Take more power: 1.5x to 2x

**Getting the
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Productivity

- ✓ **Concerns about disk moco's:**
 - **Slower green up**
 - **Hard on stand, yield loss**
 - **Puts more dirt in swath**

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Productivity

Sickle

Dull Disk



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Productivity

	<u>Yield .. ton DM / acre</u>	
Sickle	1.49	1.51
Disk – Sharp	1.47	1.47
Disk – Dull		1.45

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Productivity

Wisconsin

Ash .. % of DM	
Sickle	8.7
Disk	8.9

Utah

Ash .. % of DM	
Sickle	12.8 _a
Disk	14.6 _b



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Productivity

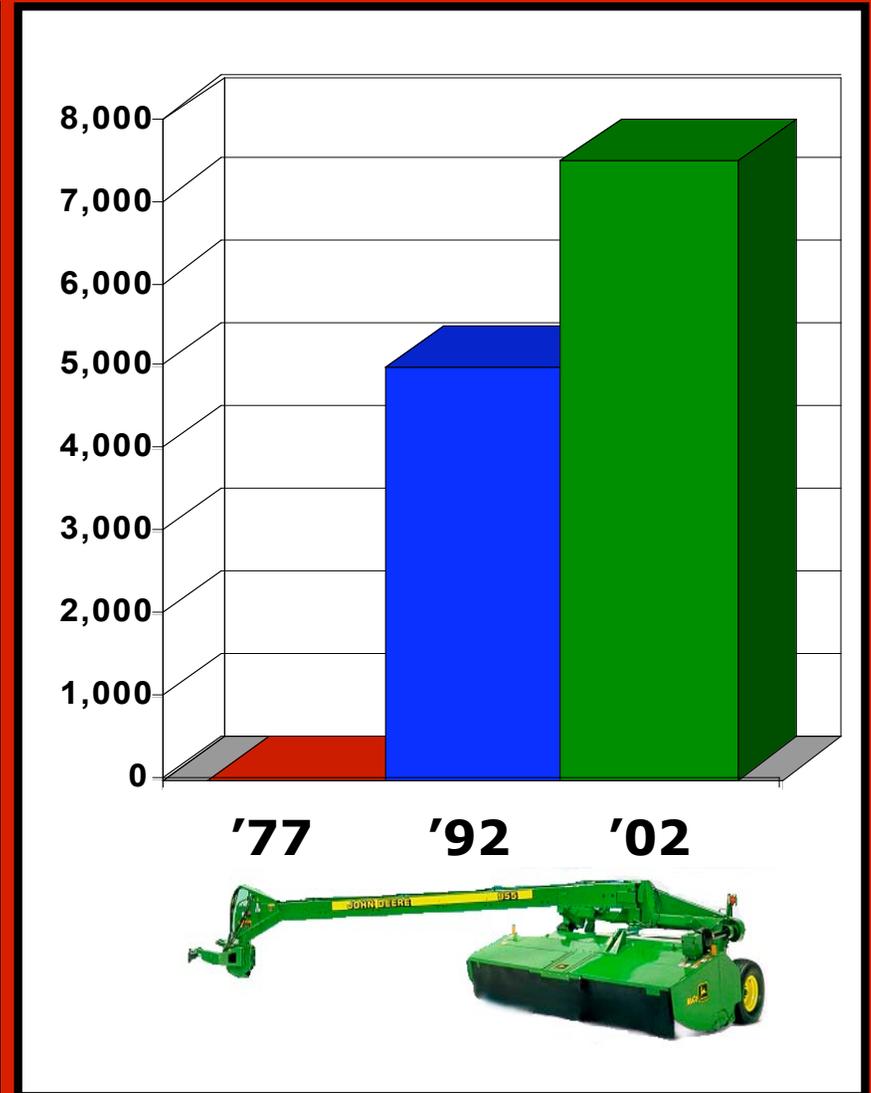
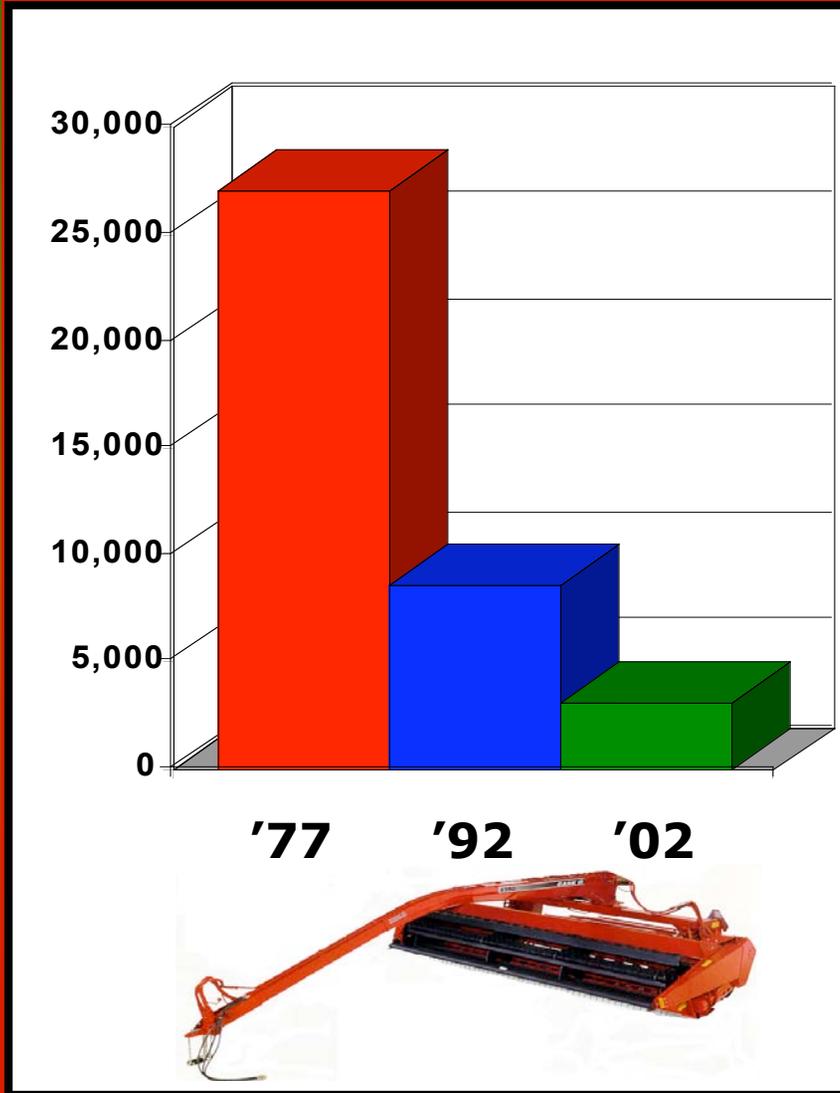
Wisconsin

Ash .. % of DM	
Chopper	8.5_a
Merger	8.5_a
Rotary Rake	8.6_b
Wheel Rake	9.7_b



Getting the Most from Your Cutting Equipment

Productivity



**Getting the
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Dry Down Rate

✓ **Major factors affecting dry down:**

- **Type of rolls**
- **Clearance of rolls**
- **Width of swath**



**Getting the
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Dry Down Rate

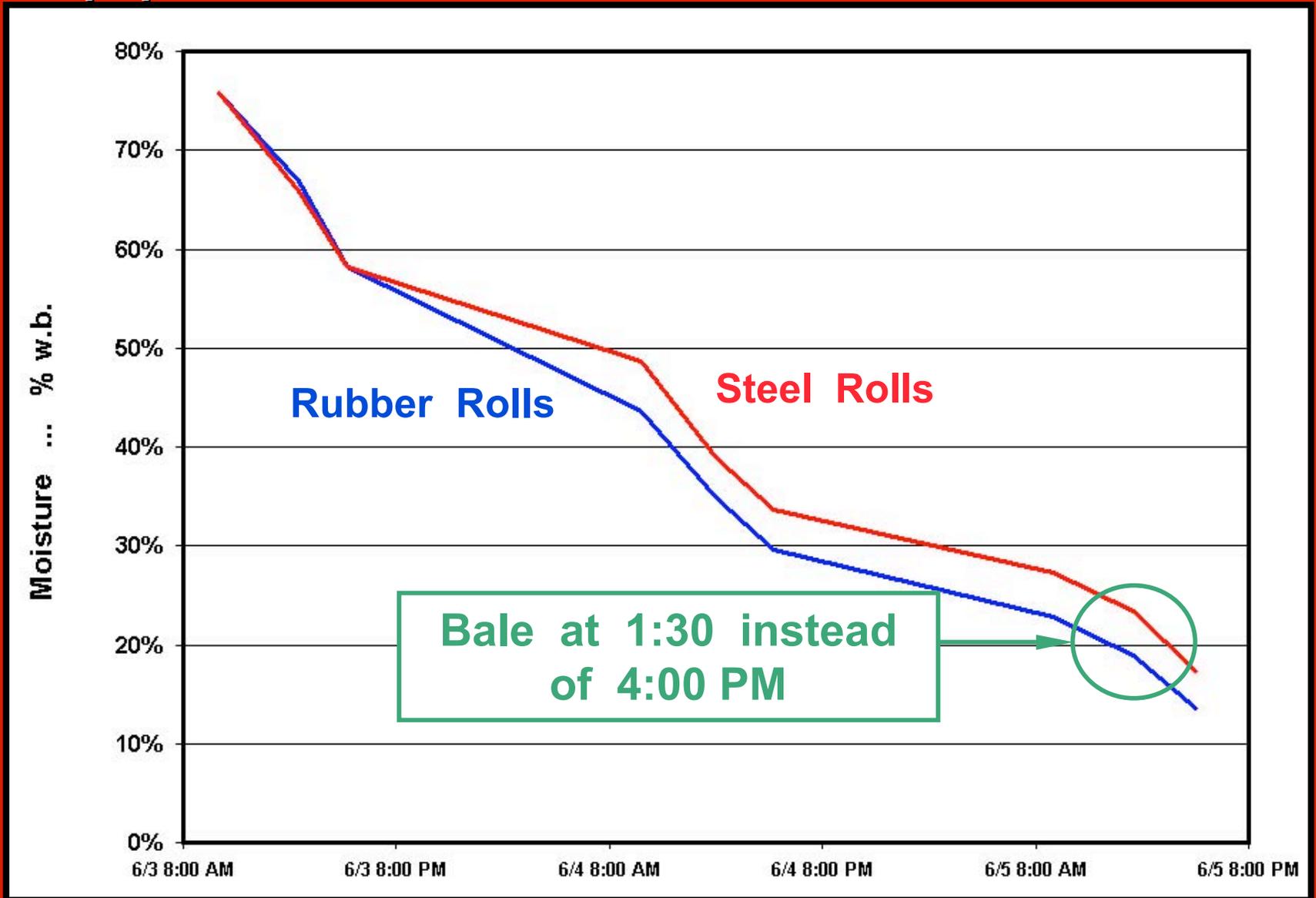
✓ Type of conditioning rolls:

- Rubber and ti-core rolls have more crushing area and promote faster drying**



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Dry Down Rate



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Dry Down Rate

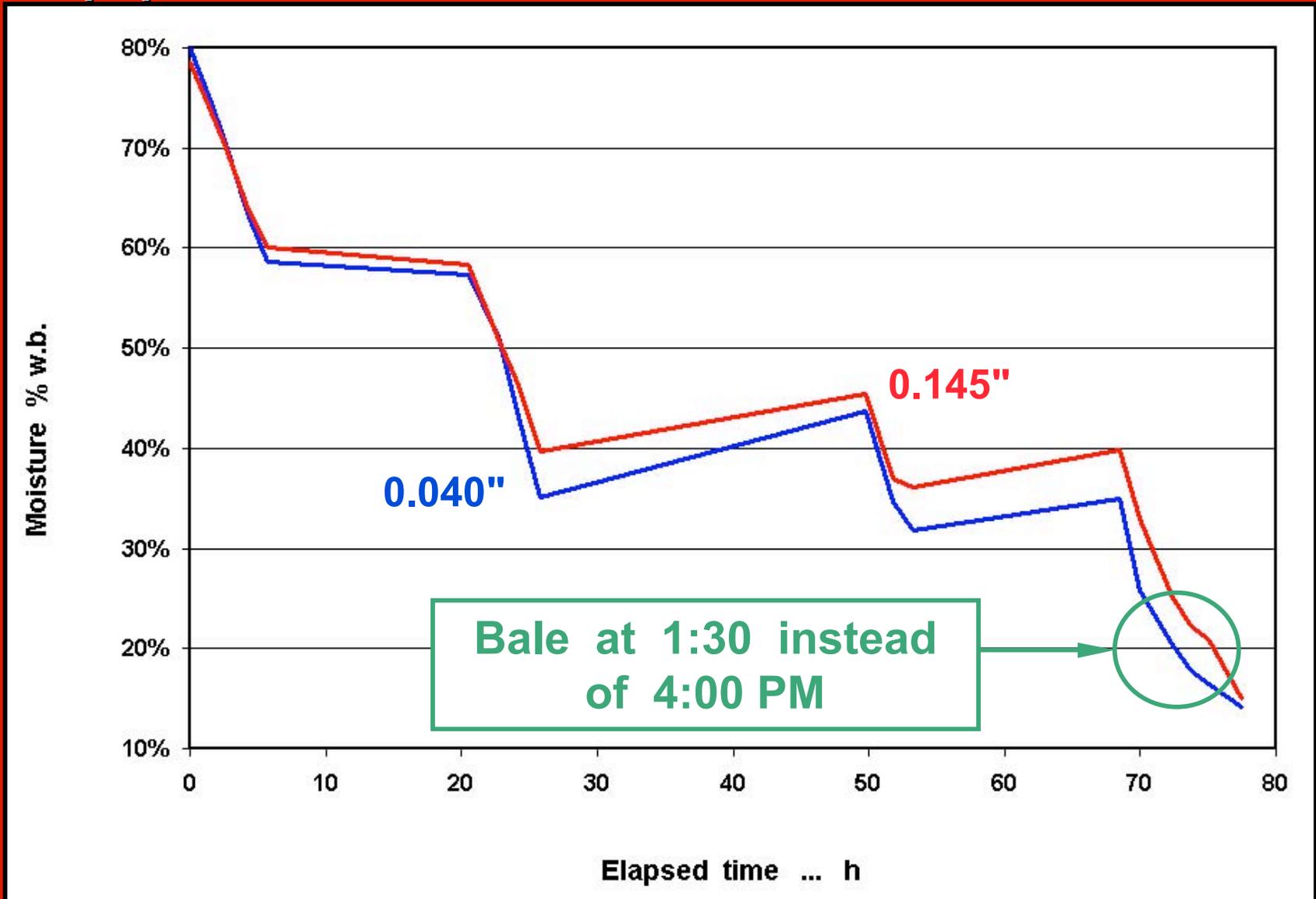
✓ **Clearance between rolls:**

- **Must be slightly smaller than stem**



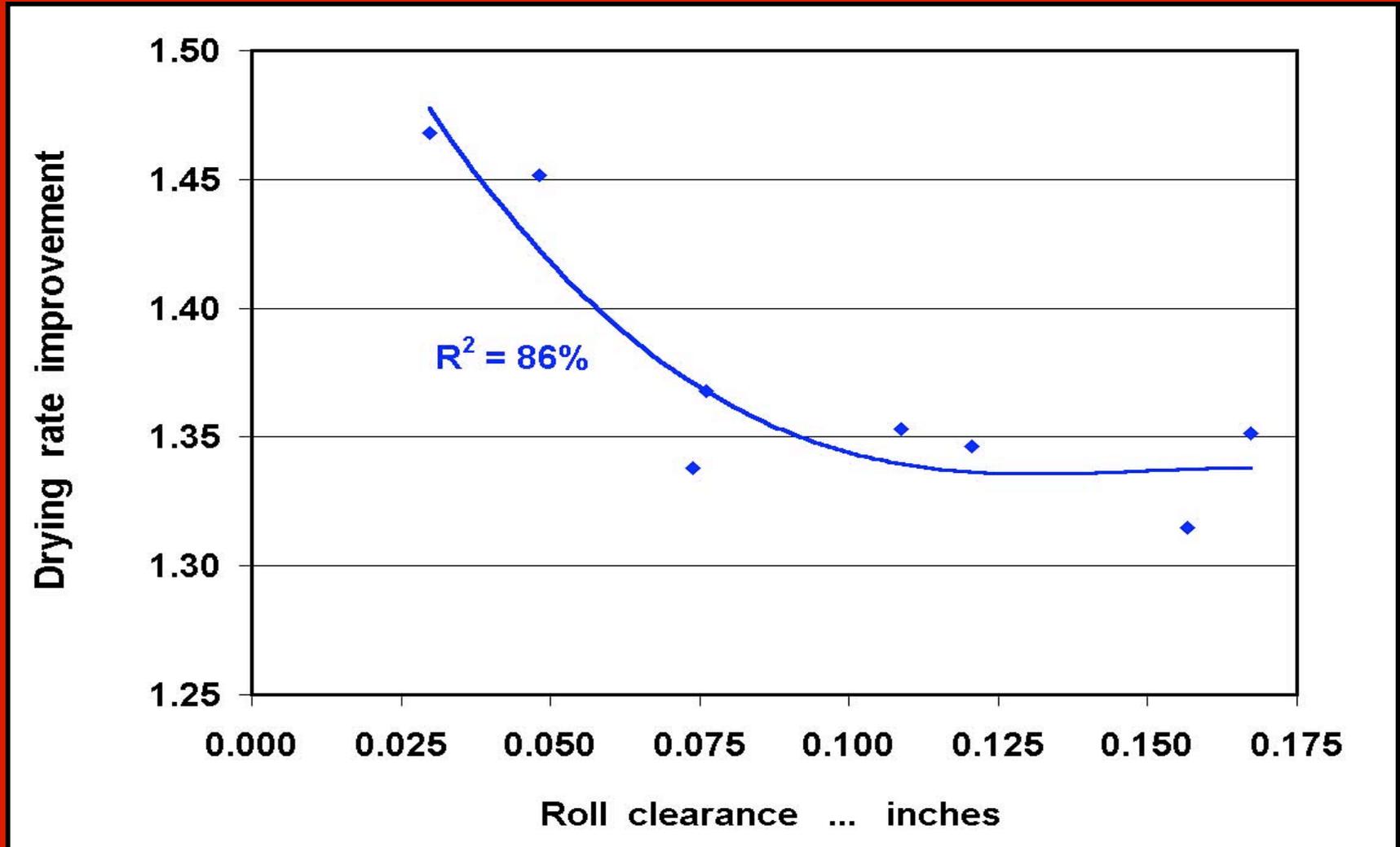
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Dry Down Rate



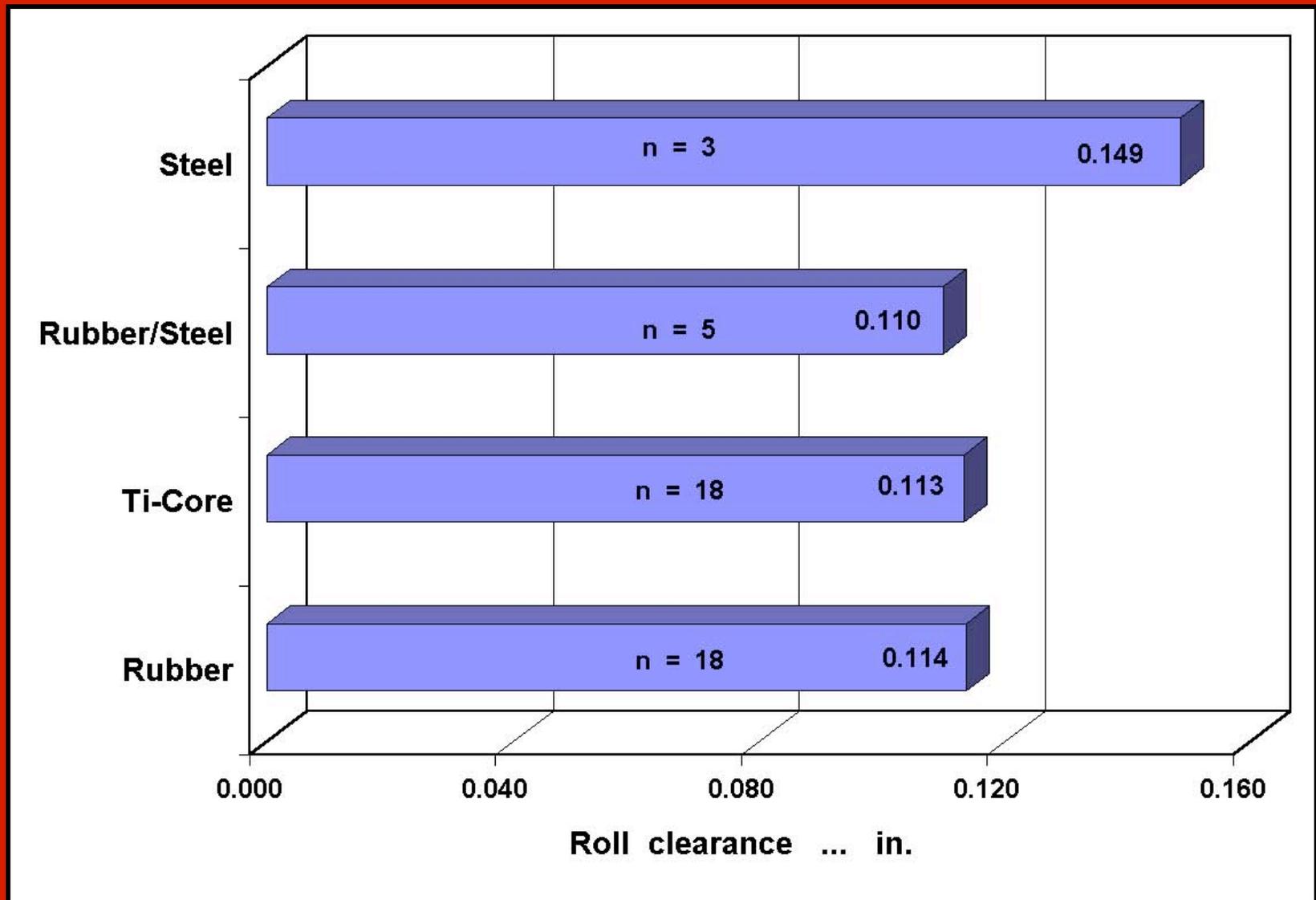
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Dry Down Rate



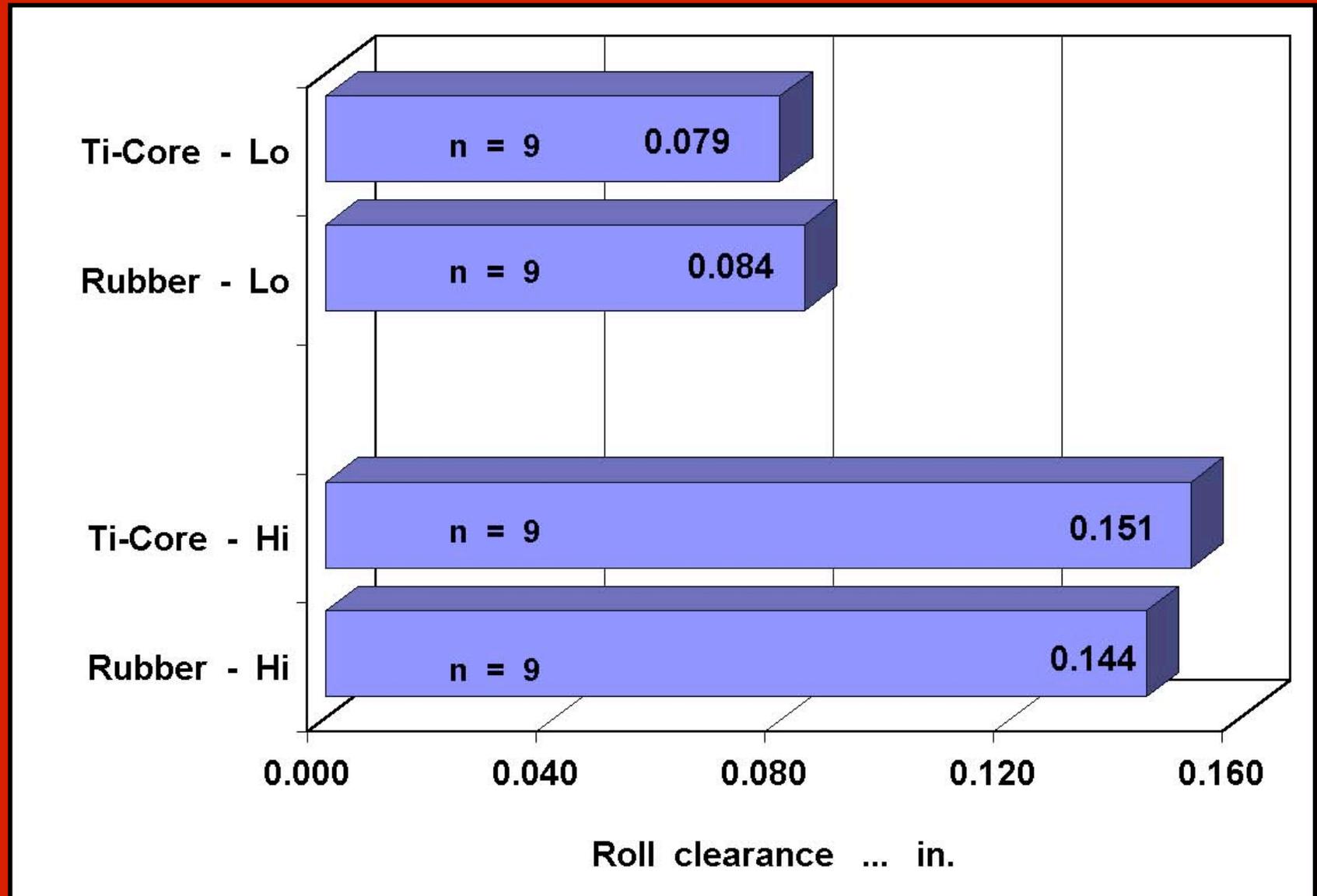
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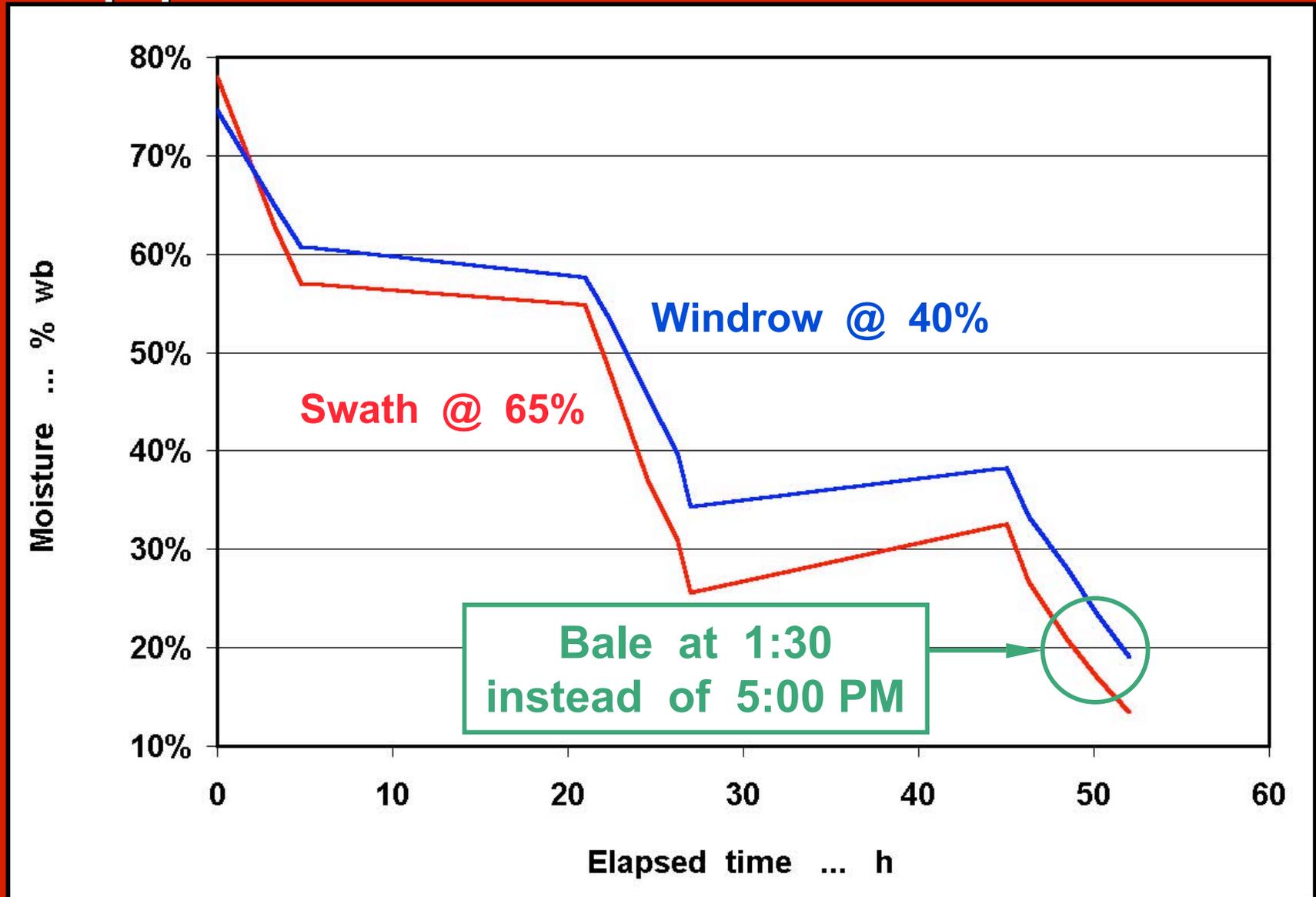
✓ **Width of the swath:**

- Lay crop as wide as possible



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Dry Down Rate



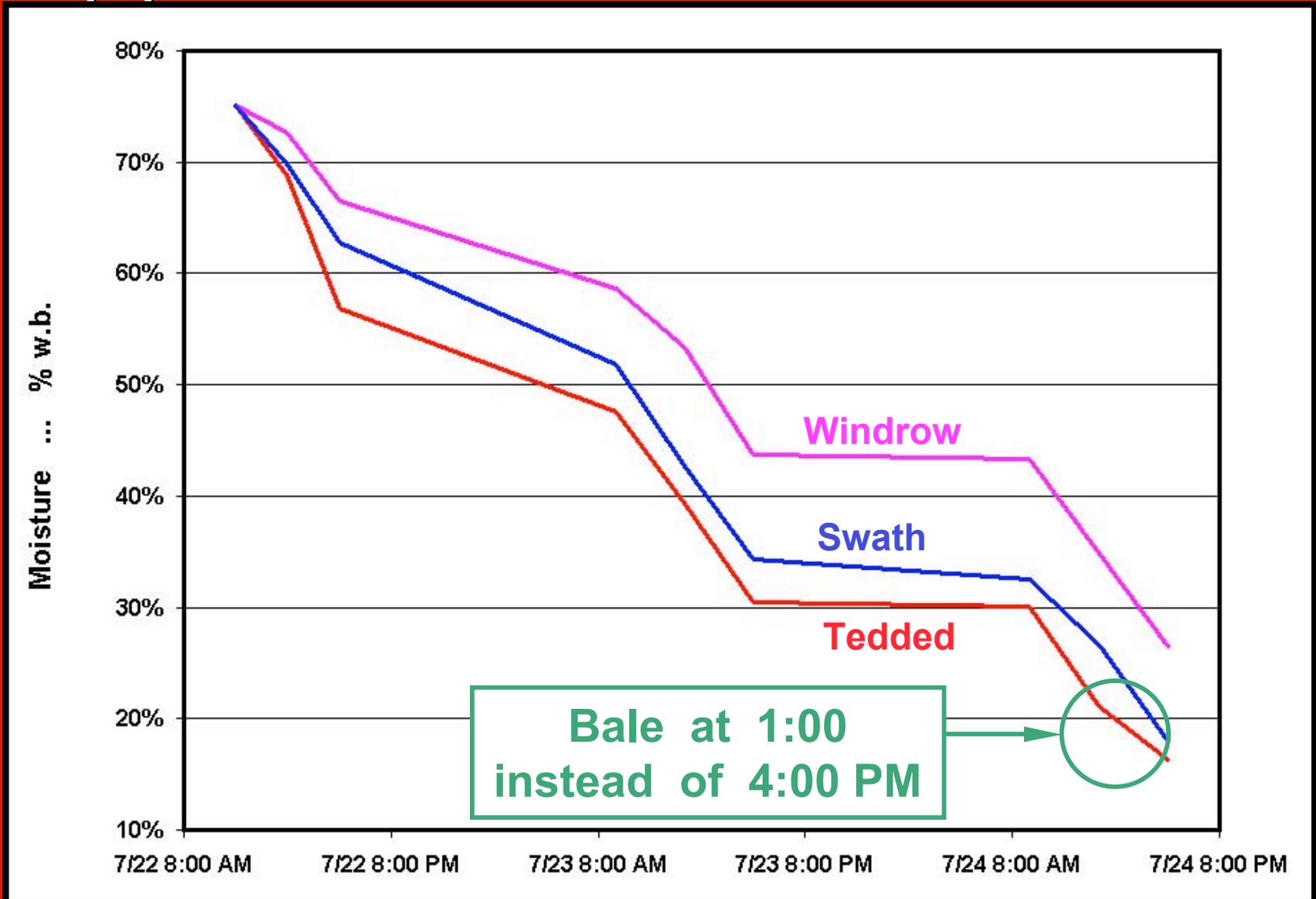
Swath @ 65%

Windrow @ 40%

Bale at 1:30 instead of 5:00 PM

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Dry Down Rate

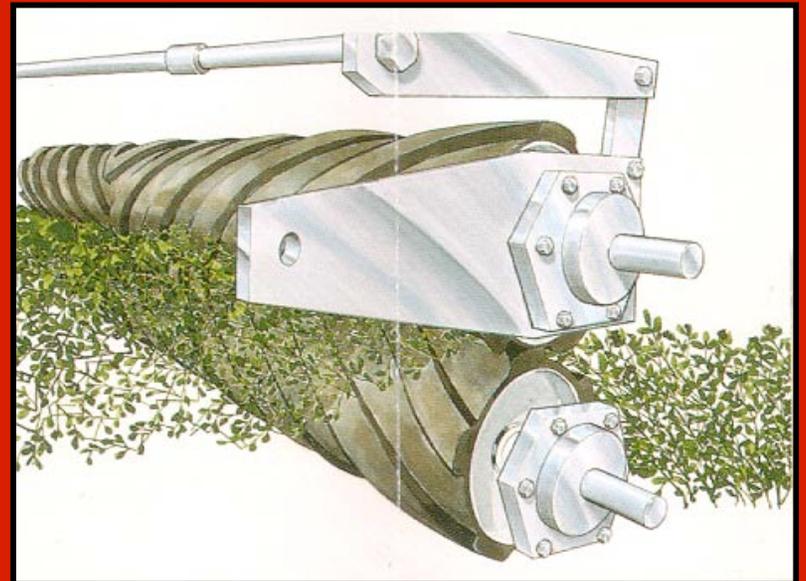
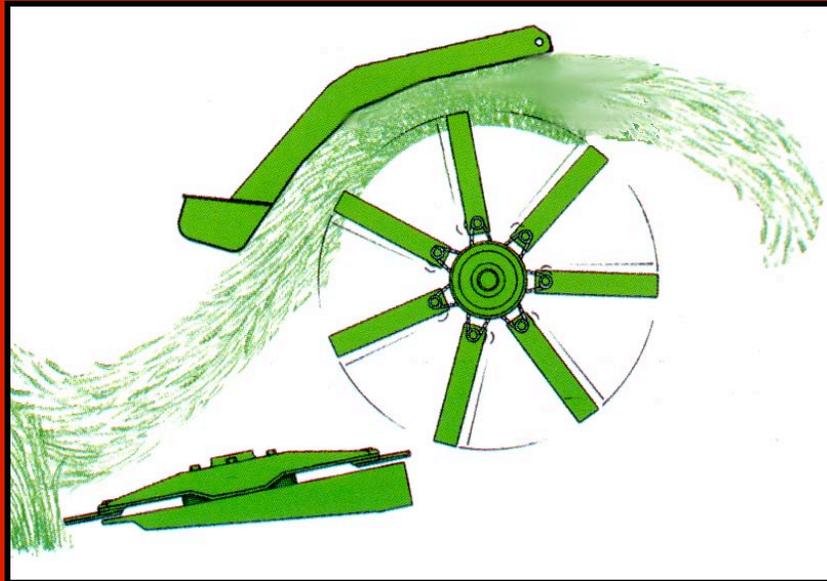


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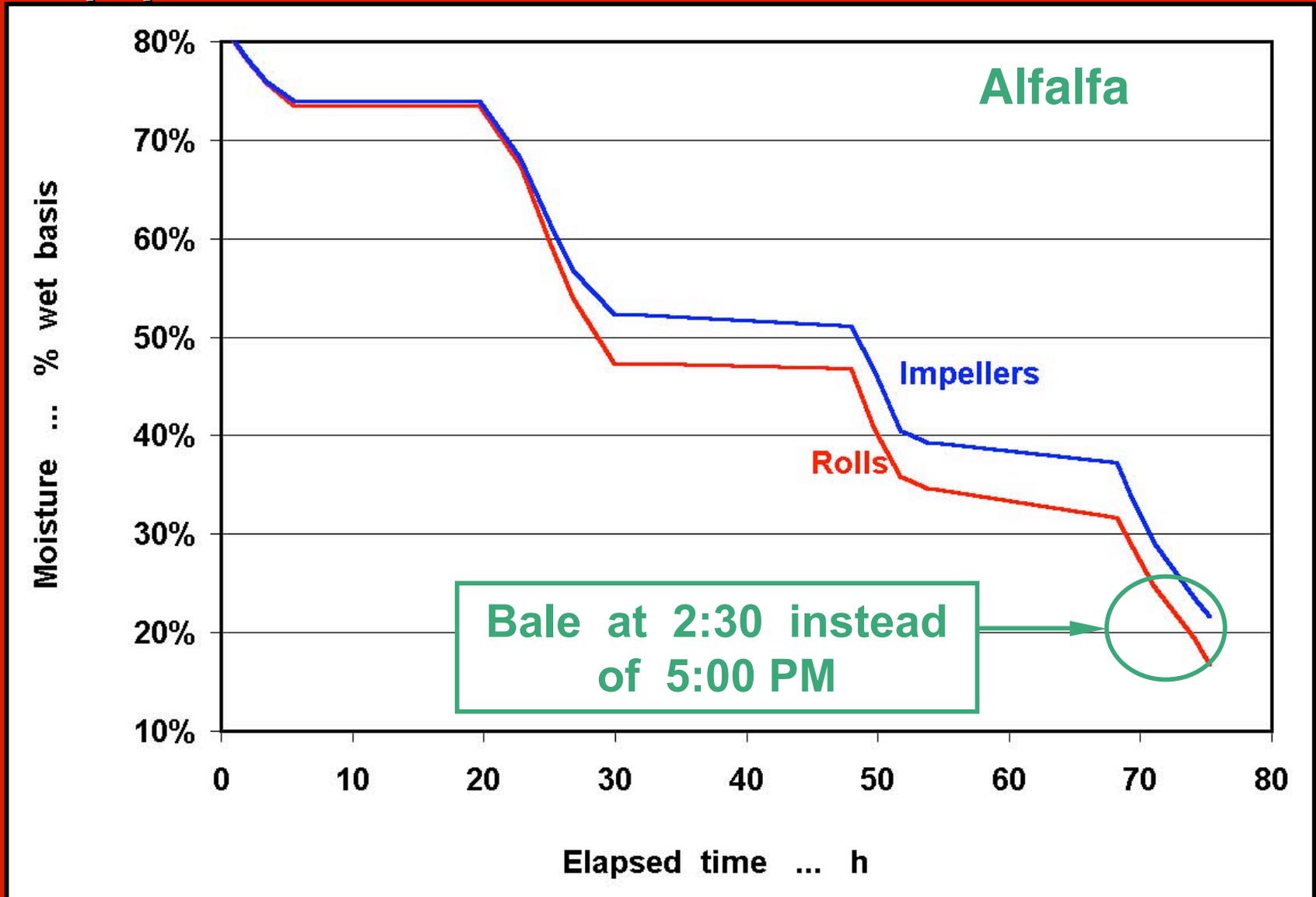
✓ Roll versus impeller/flail:

- Rolls for alfalfa
- Impeller/flail for grasses



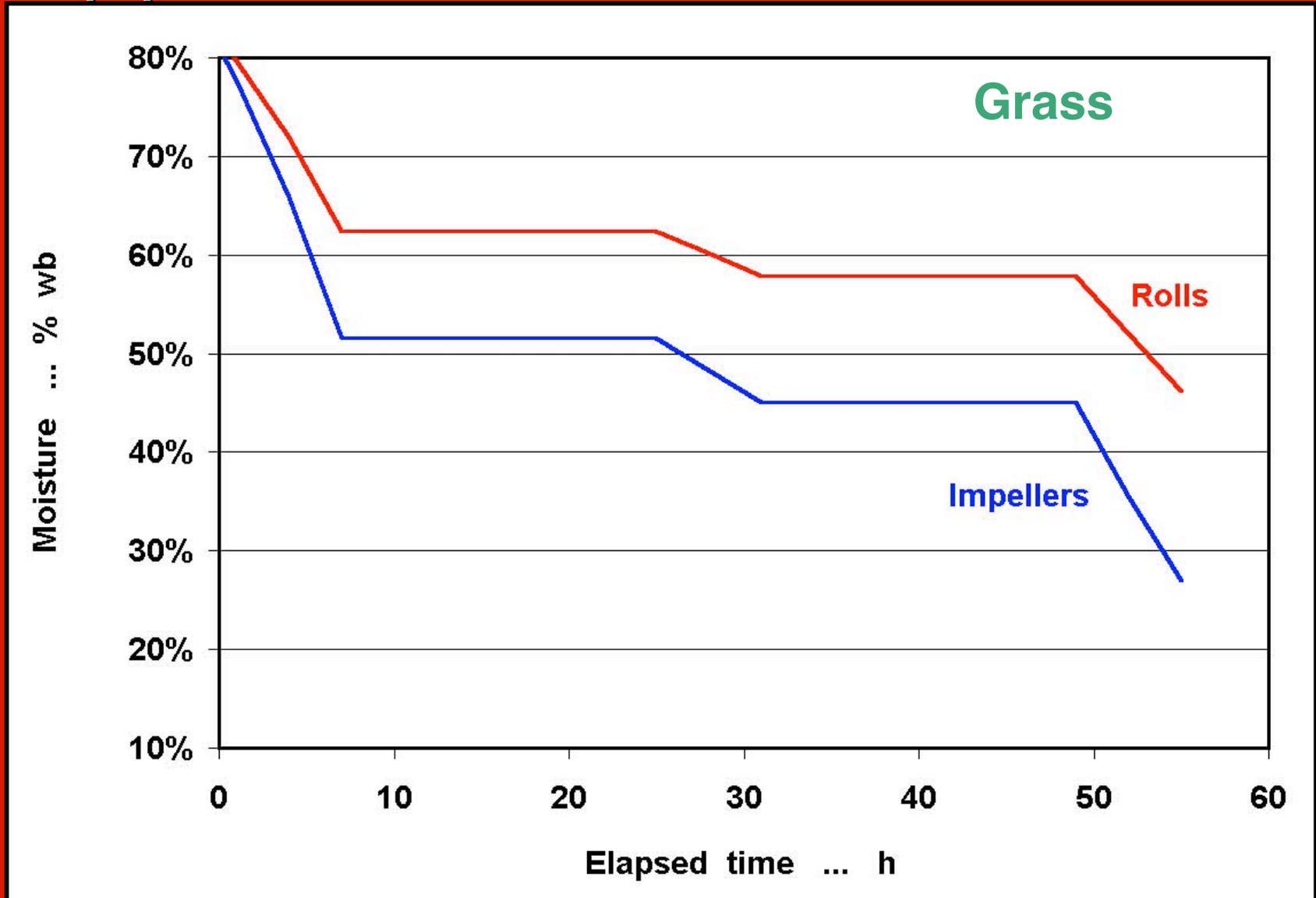
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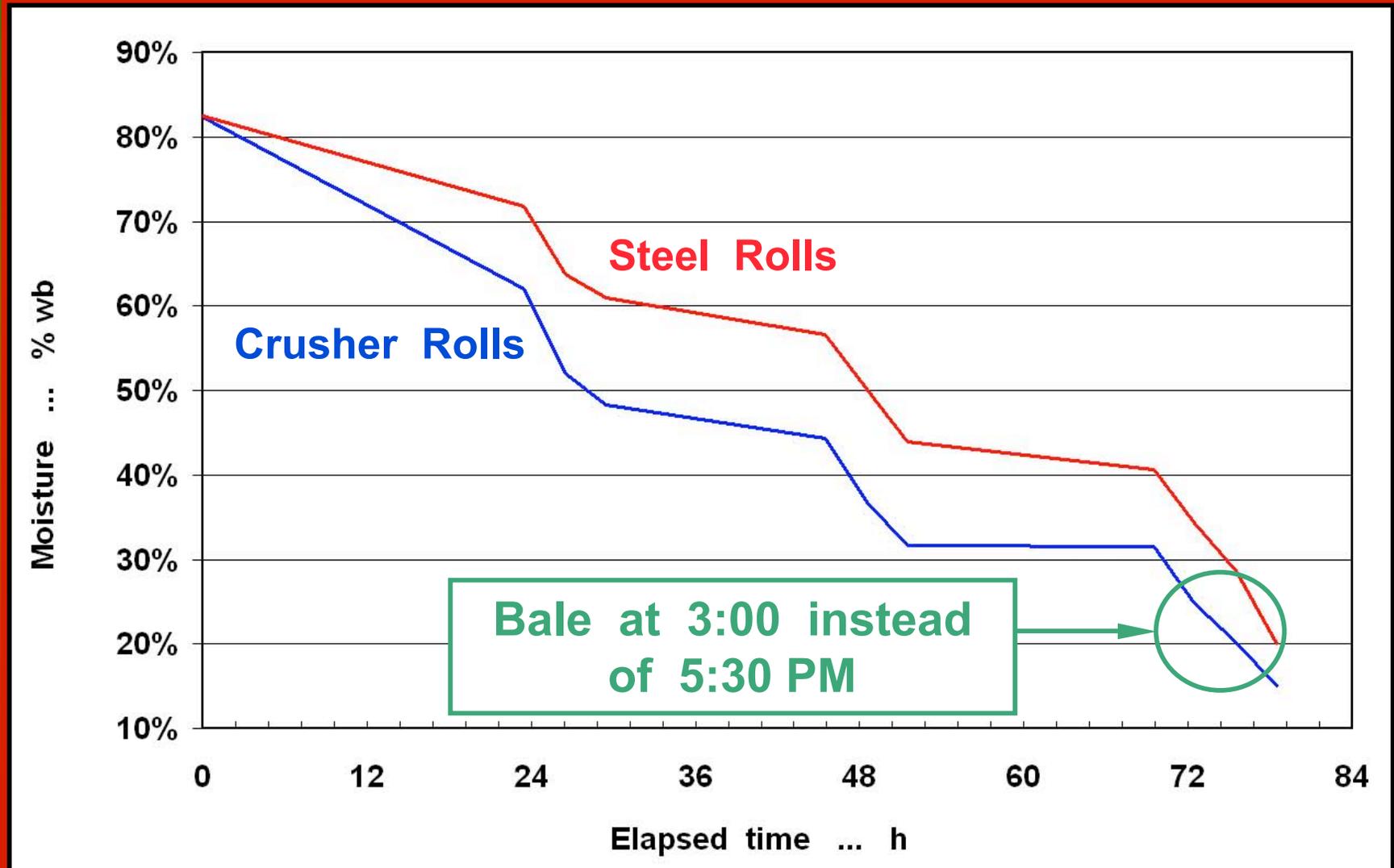
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Intensive Conditioning



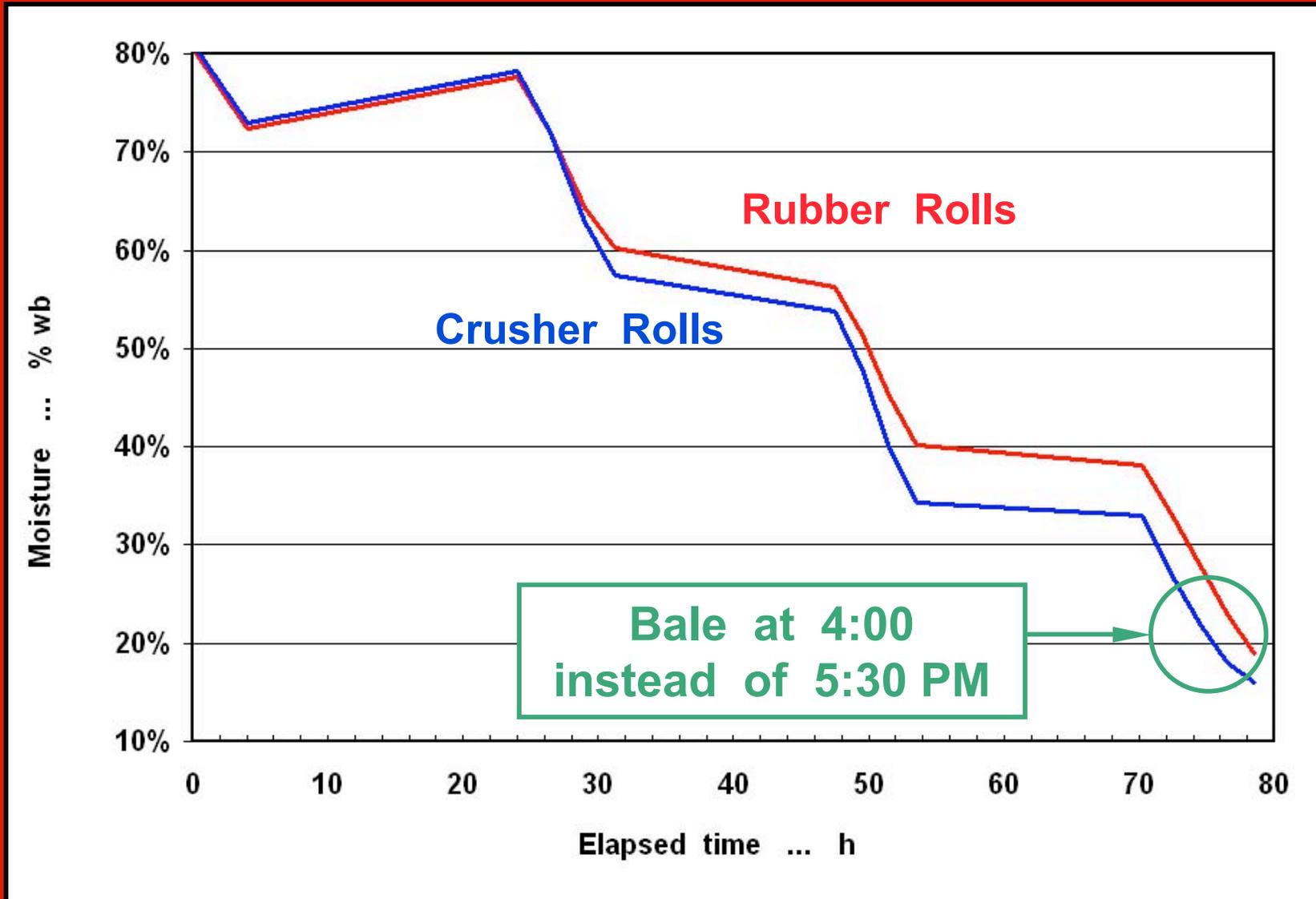
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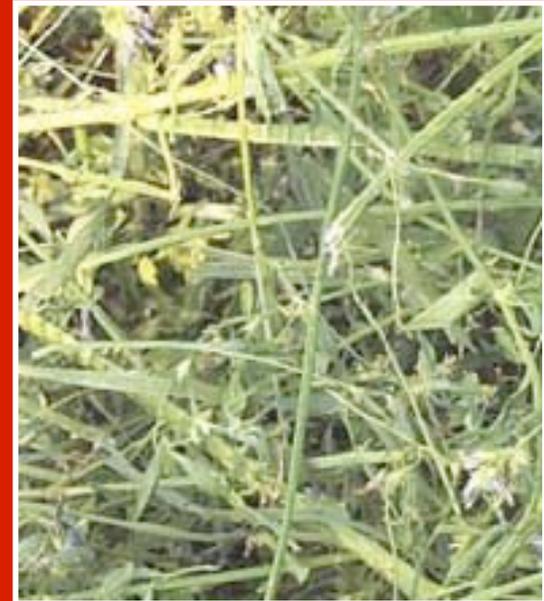
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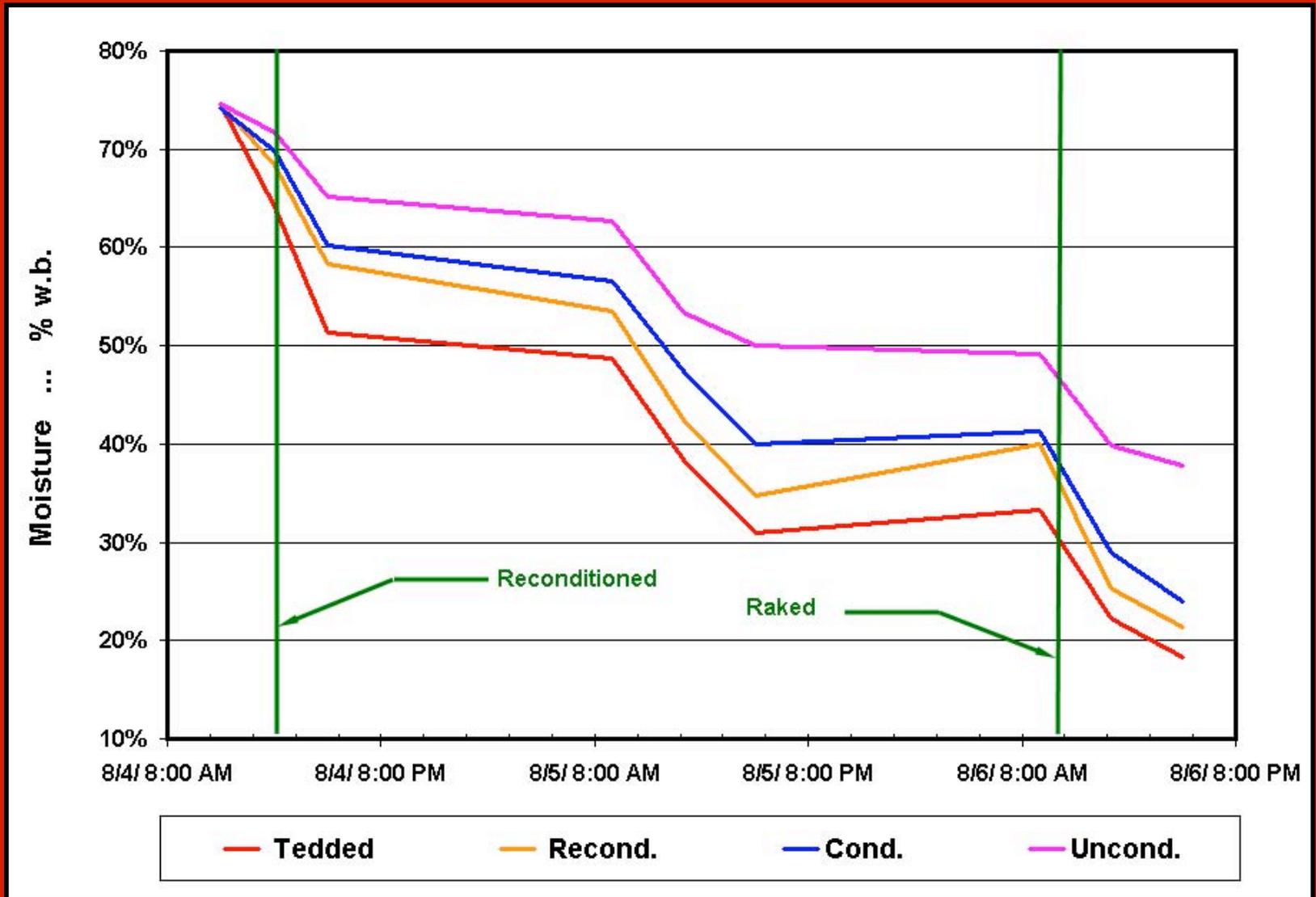
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Today's Message

- ✓ **To get faster drying:**
 - **High crushing area, correct clearance**
 - **Wide swath**
 - **Intensive conditioners & tedders offer help**



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- ✓ **Weather limits make productivity important:**
 - **Cut fast and wide**



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