

# Pasture Establishment and Extending the Grazing Season

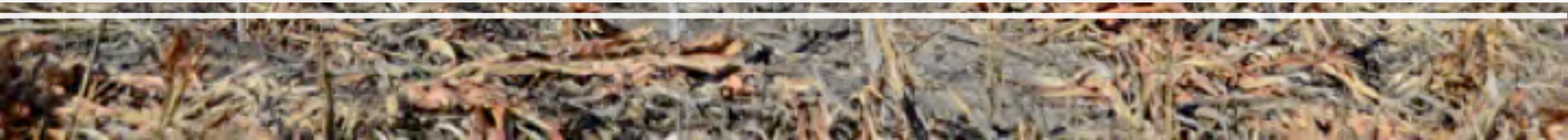


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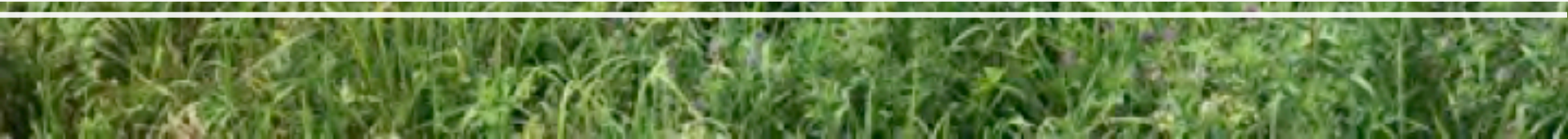
How do we go from here...







To here...





# Use regionally adapted species

- Adapted to Soil type:  
pH, texture, fertility, drainage
- Tolerant to grazing
- Winter hardy



# Forage Calendar – Wisconsin

J	F	M	A	M	J	J	A	S	O	N	D
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**Corn stocks**



**Winter Rye/Oats**



**Annual Summer grass/  
legumes**



**Orchardgrass**



**Timothy  
KY bluegrass**



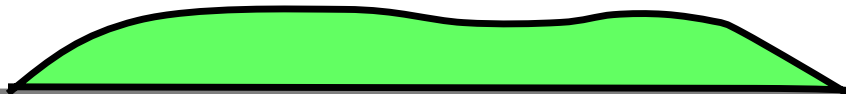
**Smooth Brome**



**Quackgrass /  
Reedcanary**



**Alfalfa**



**Red/white clover**

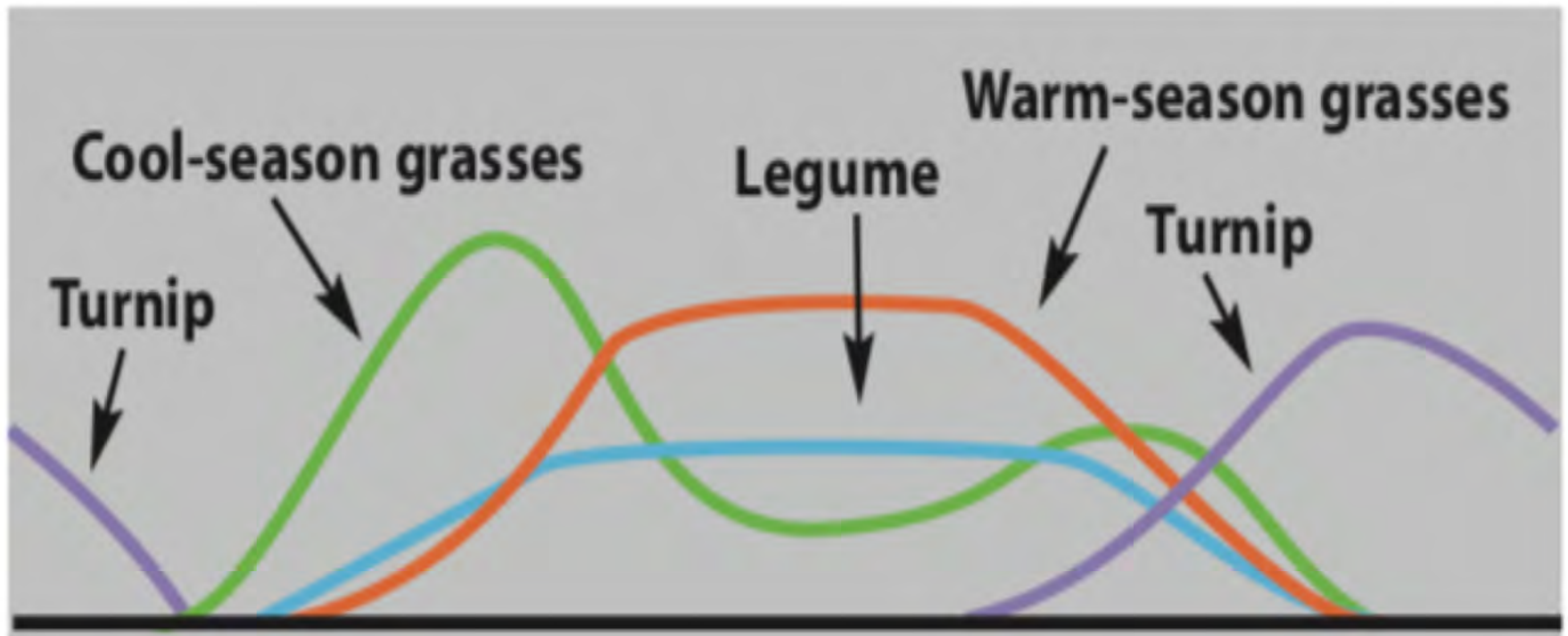


**Sweet clover**





# Growth Pattern of Forages



# Key legumes for the Upper Midwest

- Red clover
- White clover
- Alsike clover
- Kura clover (cold adapted)
- Birdsfoot trefoil (not for horses)
- Alfalfa



# Kura clover

- Adaptation: Poorly drained soil
- Soil pH: 5.1 to 7.3
- Slow to establish:
- Grazing tolerant







# Time of Planting

- Most fields are planted in Spring. Plant when adequate rainfall and optimum temperatures for germination
- Spring vs. Fall (late summer) planting
- Spring advantages
  - ✓ More dependable moisture
  - ✓ Optimum temperatures for germination
  - ✓ Less risk of frost (legumes)
- Late summer advantages:
  - ✓ Fewer weed problems
  - ✓ Drier soils
  - ✓ Less seedling 'damping-off'





# Soil test, then lime and fertilize as needed

- Fertilizing and liming provide good yields
- Most clover's require  $\text{pH} > 6.8$
- Improves forage quality
- Reduces weed problems
- Minimum investment (\$12)





# Planting Scenarios for Pastures

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- A. Frost seeding
- B. No-till or minimum tillage seeding
- C. Prepared Seedbed

# A. Frost Seeding



Species	Effectiveness
Red clover	Good
Birdsfoot trefoil	Intermediate
Alfalfa	Poor
Perennial RG, Orchardgrass	Good
Timothy	Intermediate
Smooth bromegrass	Poor



# B. No-till seeding

- ✓ Reduces risk of soil erosion
- ✓ Keeps moisture in the soil
- Into harvested annual crops or cover crops



# B. No-till seeding

- Grass into perennial crops (alfalfa)

Orchardgrass overseeding into 4-yr old alfalfa  
(requires a reduced rate than when seeding monocultures)





# B. No-till seeding

- Overseeding grass into perennial crops (alfalfa)



# B. No-till seeding

- Into established pastures:  
Requires control of pre-existing vegetation:  
Fall: mow/graze short  
Spring: seeding
- It's usually challenging.



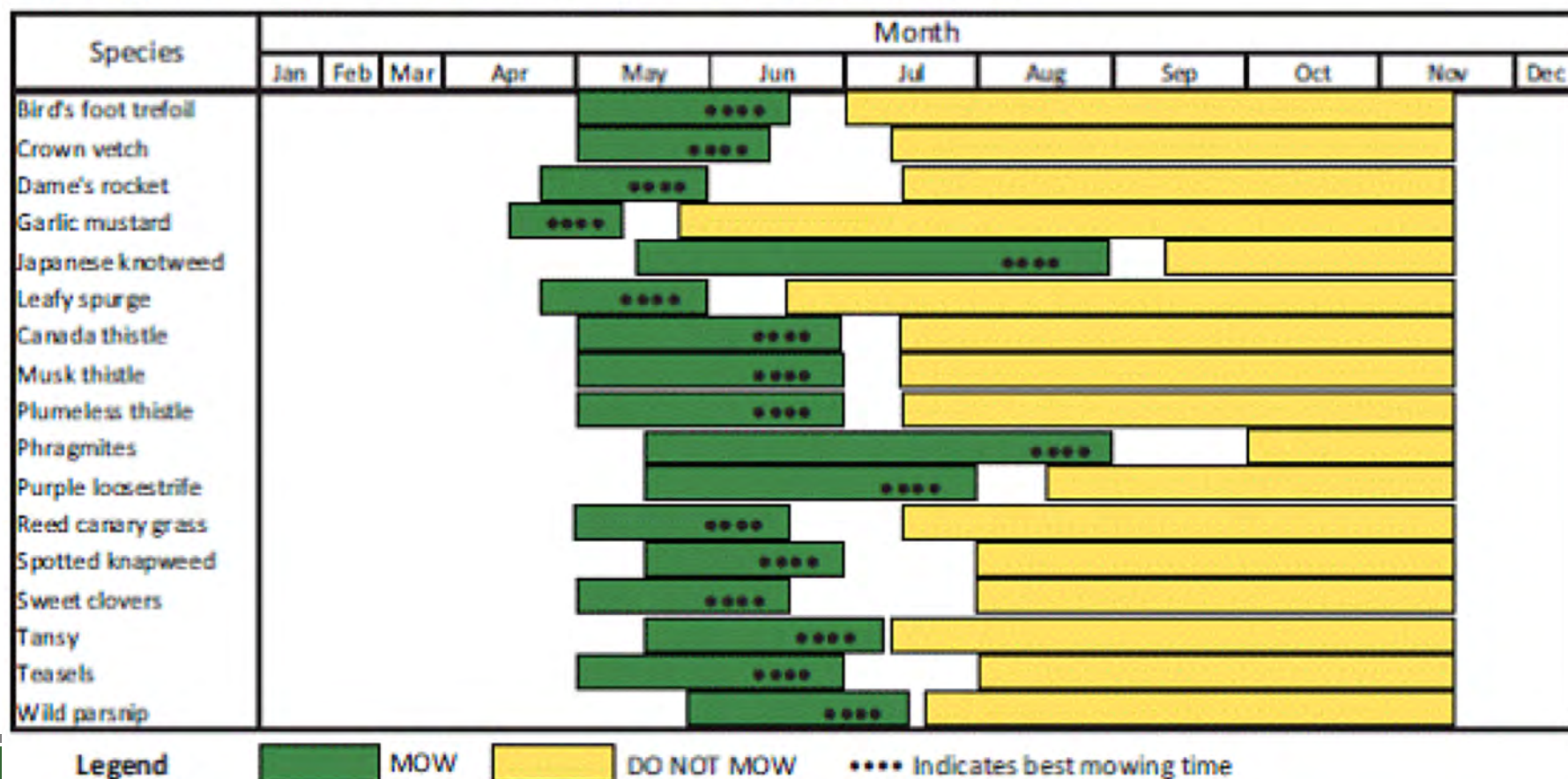


# Mechanical Control

## Mowing times



Mowing times for common invasive species in southern Wisconsin



# C. Prepared Seedbed

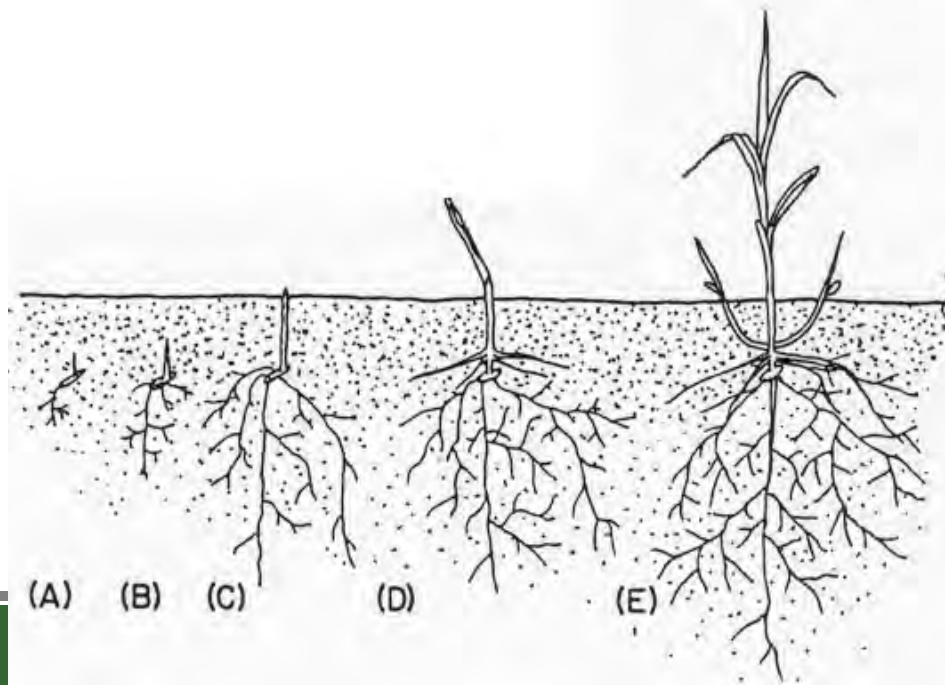
- Usually for very small seed
- Preparation of seedbed is essential
- Ideal seedbed:  
Smooth  
Firm  
free of clods



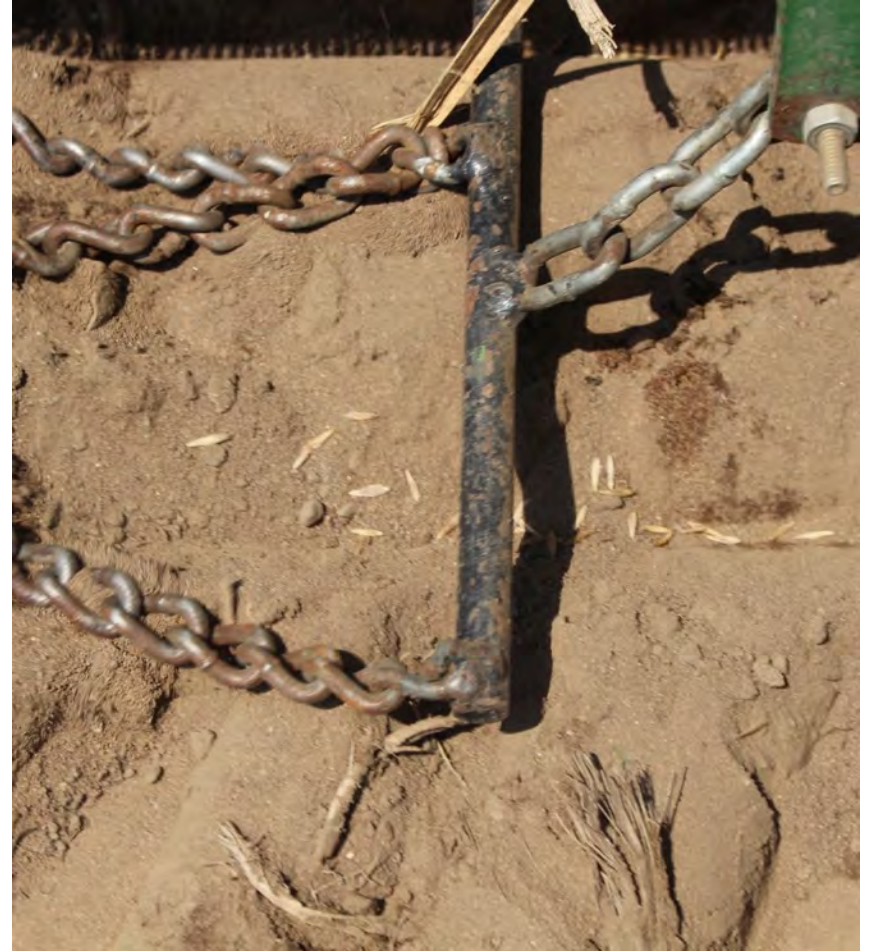


# Seeding Depth

- Most forages (except for small grains) are very small seed with limited reserves (carbohydrates)
- Plant shallower than grain crops
- Usual depth:  $\frac{1}{4}$  to  $\frac{1}{2}$  inch (for clay and loam soils)
- Deeper in sandy soils:  $\frac{1}{2}$  to 1 inch





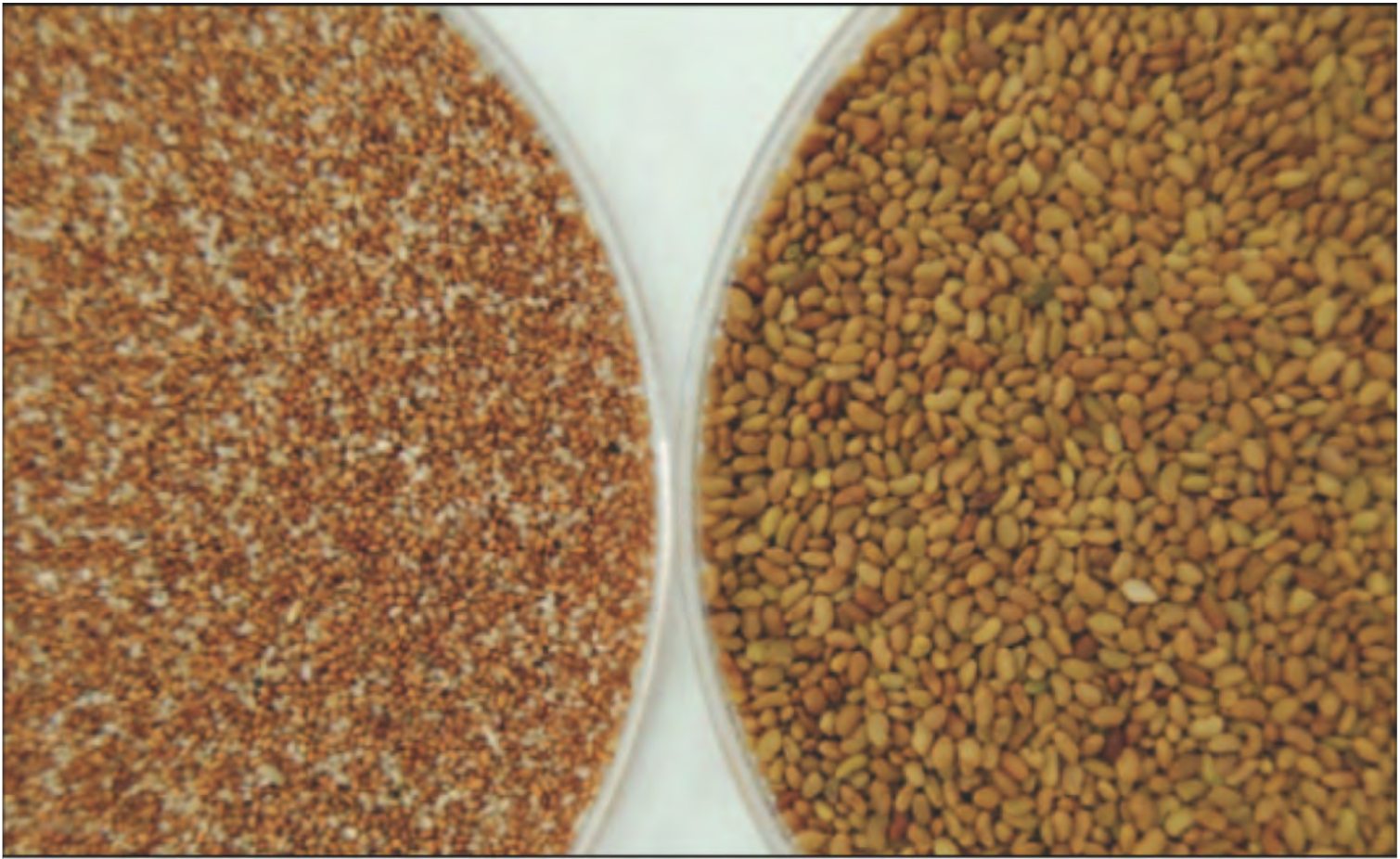


Placement of seed ( $< \frac{1}{4}$  inch)









Teff grass

Alfalfa

Photo: nmsu

Firm seed bed is important



# Seeding rates



Rates vary (wide range) due to size and weight differences

- Small seeds (1.5 mm or smaller): 2-6 lb/acre  
White clover, Alsike  
Kentucky bluegrass, reed canary,
- Medium seeds (1.6 to 2.4 mm): 15-20 lb/acre  
Alfalfa, red clover, Kura clover, Birdsfoot trefoil,  
Sweet clover, Orchard grass, Tall fescue
- Large (2.5 mm or larger): 16 lb/acre  
Crown vetch, Smooth brome, Quackgrass

Small (  $\frac{1}{4}$  inch or smaller, grasses)

Medium (  $\frac{1}{4}$  inch, grasses)

Large (  $\frac{3}{8}$  in or larger, grasses)



# Pasture seeding mixtures

## Species information

Grass species	Growth habit	Weed suppression	Drought	Traffic	Seed alone (lb/a)	Seed mixture (lb/a)
Creeping foxtail	bunch	P	P	G	10	5
Kentucky bluegrass	sod	G	F	VG	15	4
Orchardgrass	bunch	G	F	G	10	2-4
Quackgrass	sod	G	VG	G	—	—
Reed canarygrass	sod	VG	VG	G	6	5
Ryegrass, annual	bunch	VG	P	G	20-25	2
Ryegrass, perennial	bunch	VG	P	G	20-25	2
Smooth bromegrass	sod	G	VG	G	16	3-6
Tall fescue	bunch	G	VG	VG	10	4
Timothy	bunch	P	P	F	8	2-4

Abbreviations: **VG** = very good, **G** = good, **F** = fair, **P** = poor.

# Pasture seeding mixtures

(Select column based on water drainage)

Mixture	Well-drained soils				Less well-drained soils					Poorly drained	
	1	2	3	4	5	6	7	8	9	10	11
<b>Long-lived grass</b>	seeding rate, lb/acre										
Kentucky bluegrass						10					
Orchardgrass	2-4		2-4				2-4				
Reed canarygrass											6
Sm. bromegrass		3-6		3-6	3-6				3-6		
Timothy					2-4			3-4	2-4	2-4	
<b>Legume</b>											
Alfalfa	4-6	4-6									
Alsike clover									3		
Birdsfoot trefoil										6	
Ladino clover									1		
Red clover			4-6	3-6	6		6	6			
White clover						4					
<b>Cover crop</b>											
Annual ryegrass	2	2	2	2	2	2	2	2	2	2	2

Mixture	Appearance	Yield	Traffic
<b>1</b>	excellent	excellent	fair
<b>2</b>	fair	excellent	good
<b>3</b>	excellent	excellent	fair
<b>4</b>	fair	excellent	good
<b>5</b>	fair	excellent	good
<b>6</b>	excellent	fair	excellent
<b>7</b>	excellent	excellent	fair
<b>8</b>	fair	good	fair
<b>9</b>	fair	good	fair
<b>10</b>	fair	good	fair
<b>11</b>	fair	excellent	excellent



# Summer Forage Options

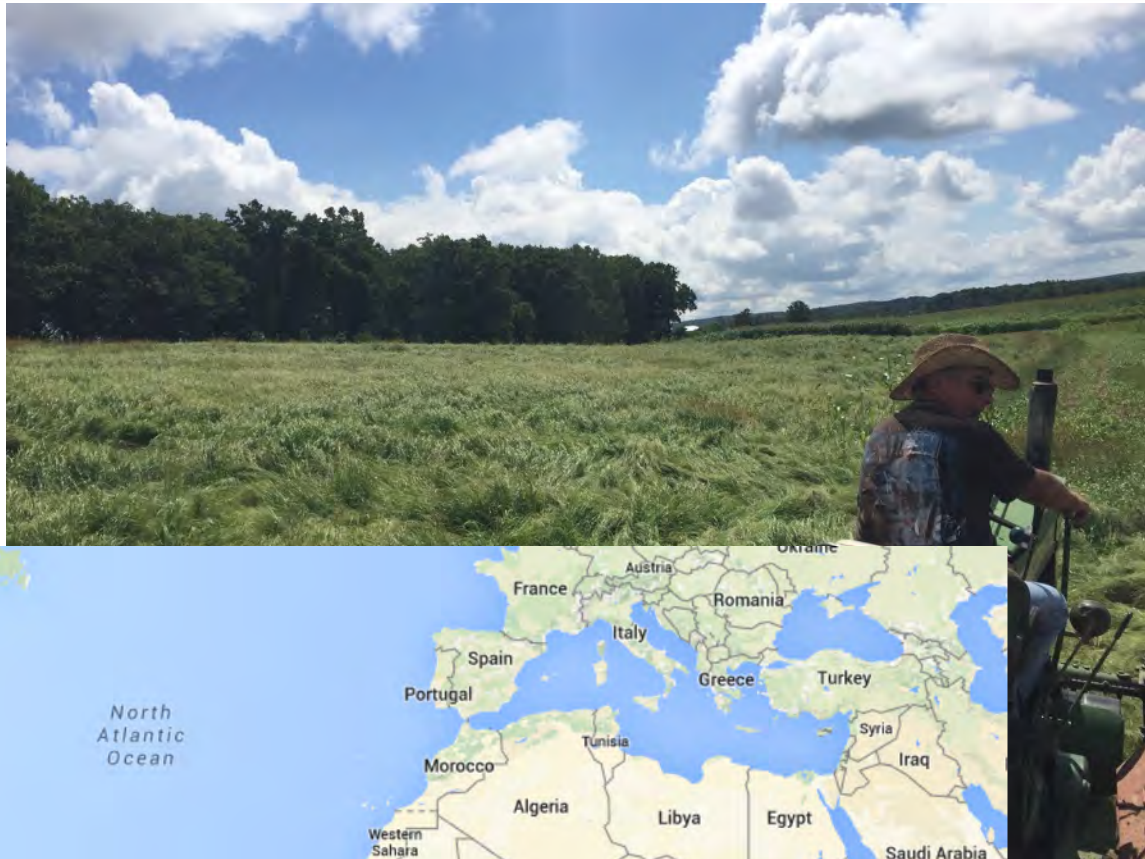
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- Teff
- Crabgrass



# Teff Grass (*Eragrostis tef*)

- C4 Warm-season bunch grass
- Tolerant of high T° and drought



ca,



# Teff Grass (*Eragrostis tef*)

- Excellent erosion control:
  1. Fast germination: 3-5 d
  2. Fibrous root
- **Soil:** Sands to clay; pH: 4.5 – 7.0
- **Temperature:** 50 – 80°F
- **Planting date:** Late spring (after frost )
- **Seeding rate:** 7 to 10 lb/acre (coated)
- **Planting depth:** 1/8 to 1/4 inch - Brillion
- **Utilization:** 45 – 55 DAP; 30 days
- **Production:** 3,000-5,000 lb/A
- **Cutting height:** Leave a 4-5 in stubble



# Teff Grass Quality

- Fine stems
- Very palatable
- Quality similar to timothy
- No prussic acid concerns



Hay	Teff	Timothy
CP (%)	9-14	8-14
TDN (%)	32-38	32-36
NDF (%)	53-65	53-59
ADF (%)	55-64	57-65

Source: Miller, 2009 (UC Extension)

- Excellent aa composition (lysine is higher than wheat or barley)
- High in fiber, calcium, zinc, iron, phosphorus, copper, thiamin
- Sour taste similar to millet



# Teff (drought and heat tolerant)



- **Soil:** Sands to clay; pH: 4.5 – 7.0

- **Temperature:** 50 – 80°F

Lacks cold tolerance

- **Planting date:** Late spring (after frost )

- **Seeding rate:** 7 to 10 lb/acre (coated)

- **Planting depth:** 1/8 to 1/4 inch

Brillion

- **Utilization:** 45 – 55 DAP; 30 days

- **Production:** 3,000-5,000 lb/A

- **Cutting height:** Leave a 4-5 in stubble

# Crabgrass (*Digitaria sanguinalis*)

- Warm-season grass (C4)
- Sod forming with runners



## Varieties:

- Quick N Go (for Upper midwest)
- Red River
- Common



# Crabgrass (highly palatable)

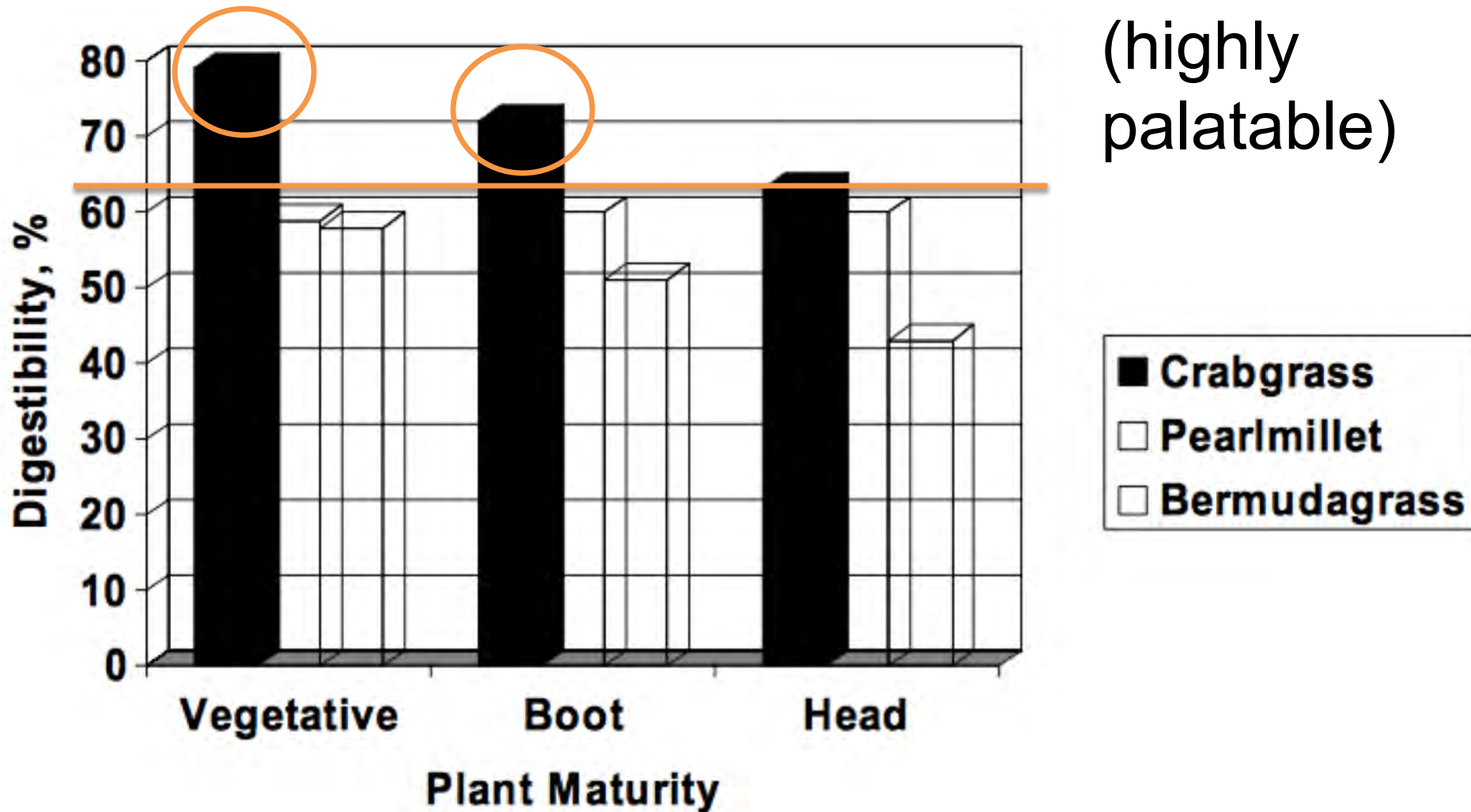


Spooner, WI



- **Soil:** Sandy loam - clay  
pH: 5.5 – 7.0
- **Temperature:** Lacks cold tolerance
- **Planting Date:** early Summer – Jun 1  
**Seeding Rate:** 3 to 5 lb/acre  
**Planting depth:** 1/4 inch
- **Production:** 4,000 to 12,000 lb/A
- **Grazing height:** 6 to 18 in,
- **Haying height:** 18 to 24 in  
Stubble 4-5 inches

# Crabgrass Quality





## CRABGRASS SEED GERMINATION DATES

Approximate Date



-  After May 30
-  After May 10
-  After April 20
-  After March 20
-  Jan. 1 - March 20









- Use regionally adapted species
- Soil test and adjust as needed
- Time of planting
- Seeding depth
- Seeding rate



**60-90 days later do a light grazing**



# Thank You!

