

Today's Learning Objectives

1. Understand the advantages and disadvantages of the major cool-season grass species.
2. Learn how to evaluate the quality of seed mixtures and blends, including the newer trend of seed coatings.
3. Understand how establishment techniques including fertilization, soil amendments, mulching, and herbicides affect seeding success.

Which Grass is Best?

Selection depends on many factors:

- Expectations and Function/Use
- Environmental conditions – reoccurring problems
- Soil type and condition
- Amount of maintenance desired
 - High maintenance vs. low maintenance



Selecting Turfgrasses

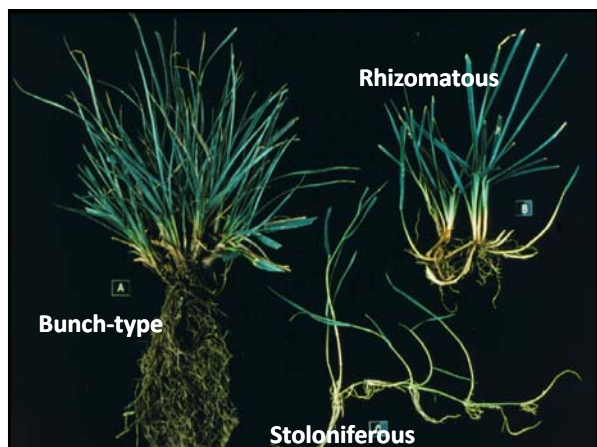
- ▣ Site Conditions
- ▣ Expected care
- ▣ Availability
- ▣ Cost

Ideal

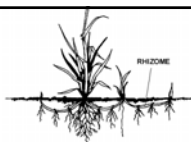
Selecting Turfgrasses

- ▣ Familiarity
- ▣ Availability
- ▣ Cost
- ▣ What client wants
- ▣ Spec's

Reality

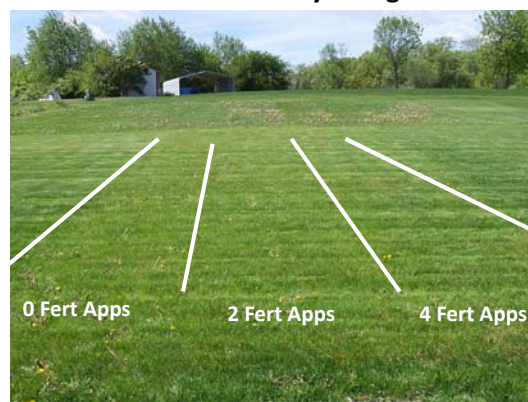


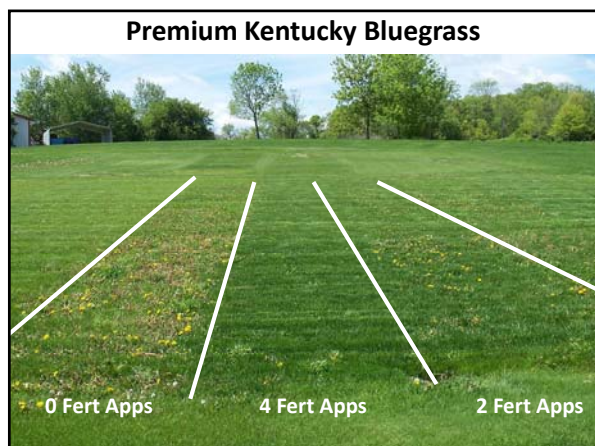
Kentucky Bluegrass



- High maintenance grass – needs 2-3 apps of fertilizer, and irrigation to stay green
- Prefers moist, well drained soils
- Very slow germination (3 weeks!)
- Rhizomatous – recuperates well from wear
- Good cold tolerance
- Poor shade tolerance

Common Kentucky Bluegrass





Good Summer Dormancy

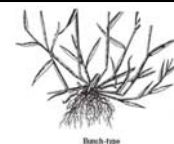


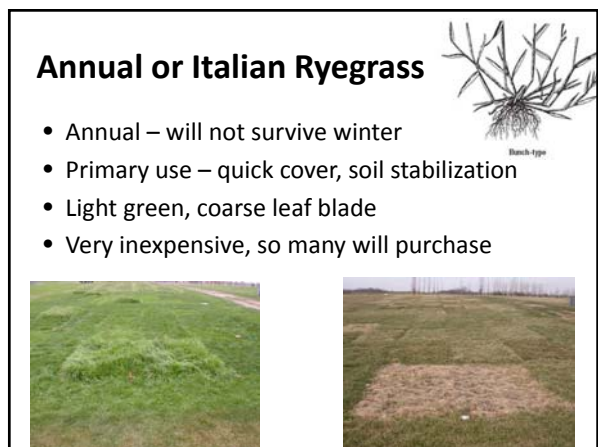
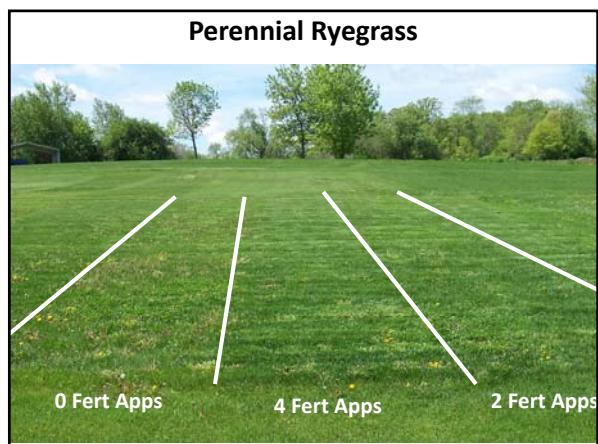
Quackgrass



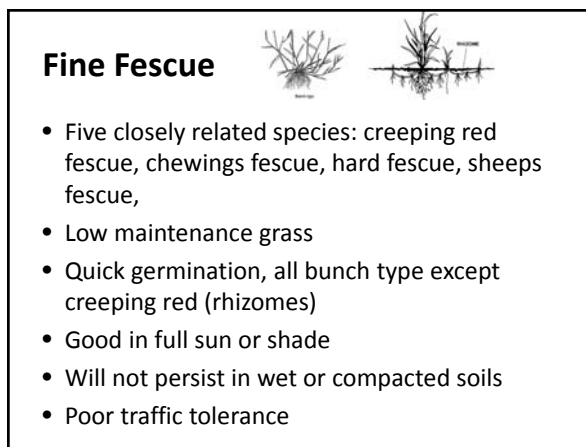
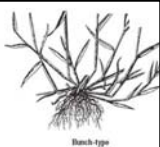
Perennial Ryegrass

- Bunch type – poor recuperation
- Fast establishment from seed
- Poor cold and heat tolerance
- Fair shade tolerance
- Some varieties resistant to above ground feeding insects (chinch bugs)
- Medium to high maintenance requirements

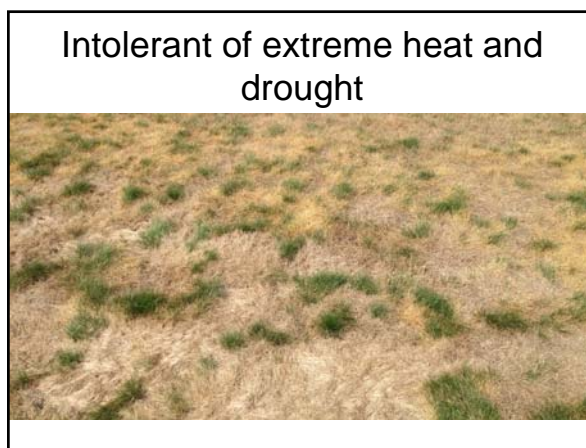
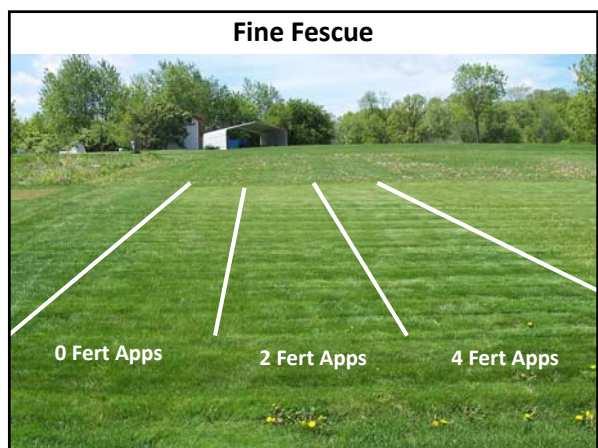


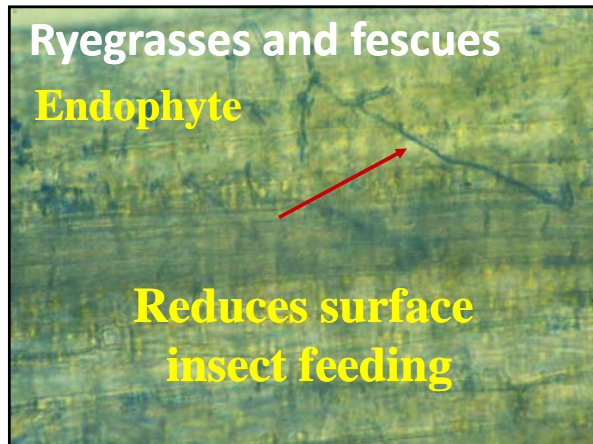


- Annual – will not survive winter
- Primary use – quick cover, soil stabilization
- Light green, coarse leaf blade
- Very inexpensive, so many will purchase

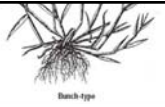


- Five closely related species: creeping red fescue, chewings fescue, hard fescue, sheeps fescue,
- Low maintenance grass
- Quick germination, all bunch type except creeping red (rhizomes)
- Good in full sun or shade
- Will not persist in wet or compacted soils
- Poor traffic tolerance



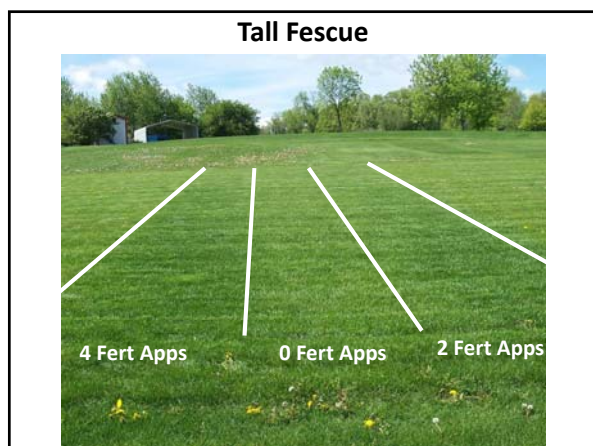


Tall Fescue



Bunch type

- Newer grass to this region, coarse leaf texture, mixes poorly with other grasses
- Very low maintenance
- Poor ice tolerance – best in well drained areas
- Good drought tolerance
- Excellent traffic tolerance
- Fair shade tolerance
- Poor recuperative ability – bunch type





Part 2 – Evaluating Seed Mixes and Blends



Mixes & Blends

- **Mix = 2 or more species**
- **Blend = 2 or more var. 1 spec.**
- **Diversity**
- **Compatibility**

Blends & Mixes	
	Sunny, medium to high maintenance 65% Kentucky bluegrass blend 15% perennial ryegrasses 20% fine fescues 3 to 4 lbs. per 1,000 sq. ft.
	Sunny, low maintenance 65% fine fescue blend 15% perennial ryegrasses 20% Kentucky bluegrass blend or 100% tall fescue blend 4 to 5 lbs. per 1,000 sq. ft. 7 to 10 lbs. per 1,000 sq. ft.
	Shady 100% fine fescue blend 4 to 5 lbs. per 1,000 sq. ft.

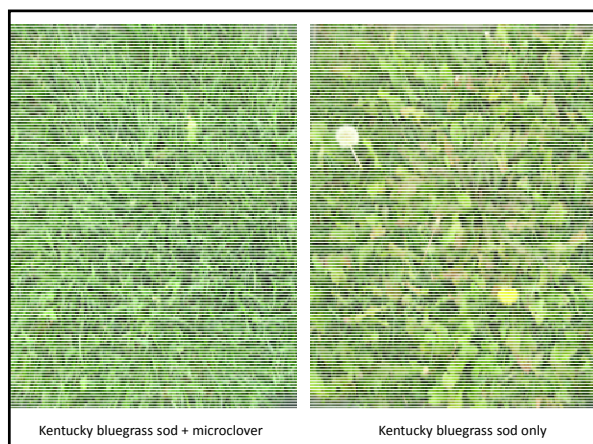
Seed Labels

- Purity: > 90%
- Germination: > 80%
- Other crop: < 0.5%
- Weed: < 0.4%
- Noxious weeds: 0
- Inert: < 8%
- Date tested: 9 mo.
- Perennial ryegrass should not be greater than 25%

PURE SEED	VARIETY	PERCENTAGE	OTHER
94.05%	BOREAL CREEPING RED FESCUE	85%	CAN
27.16%	LINN PERENNIAL RYEGRASS	90%	CR
14.29%	KENBLUE KENTUCKY BLUEGRASS	85%	WA
OTHER INGREDIENTS			
2.11%	OTHER CROP SEED		
2.28%	INERT MATTER		
0.09%	WEED SEED		
NOXIOUS WEEDS: NONE FOUND			
NET WT. 3 POUNDS			
LOT NO: 43379			
TESTED: MAR. 2004. WILL BY DEC. 31, 2004			
WTS. LA. IN. SELL BY: OCT. 31, 2004			
WCO. LA. IN. SELL BY: MAY, 2005			

Mixes & Blends

- **VNS = variety not stated = buyer beware**
- **Annual ryegrass – 0%**
- **Clover and Microclover – big in Europe**
- **Tall fescue (80%+) / KBG (20% or less)**
- **Seed weight - not seed number**



Seed Count

Species	#seeds/ lb.
P.rye	250K
T.fescue	250K
F.fescue	500K
KBG	1.5mil.
C.bentgrass	8 mil.

Seed Count

Buy an 50-50 KBG/PR mix by wt.

$$(0.5)(1.5\text{mil})=750\text{K KBG}$$

$$(0.5)(250\text{K})=125\text{K PR}$$

$$\text{Total per lb.}=875\text{K seeds}$$

So.....

Seed Count

A 50-50 KBG/PR mix by seed ct

$$750\text{K}/875\text{K}=85\% \text{ KBG}$$

$$125\text{K}/875\text{K}=15\% \text{ PR}$$

So.....50/50 is 85/15

Seed Count

80/20 KBG/PR

$$(0.8)(1.5\text{mil})=1.2 \text{ mil KBG}$$

$$(0.2)(250\text{K})=50\text{K PR}$$

$$\text{Total per lb.}=1.25 \text{ mil seeds}$$

So.....

Seed Count

An 80/20 KBG/PR by seed ct.

$$1.2 \text{ mil}/1.25\text{mil}=96\% \text{ KBG}$$

$$50\text{K}/1.25\text{mil} =4\% \text{ PR}$$

$$\text{Total per lb.}=1.25 \text{ mil seeds}$$

So 80/20 is 96/4

Seed Label

- ▣ Purity
 - ▣ Germination
 - ▣ Inert, weed, other crop
 - ▣ Lot #
 - ▣ Date tested
- Pure Live Seed

Pure Live Seed

- ▣ (Purity) x (Germination)
- ▣ How much will become...

95% pure KBG blend with 85% germ.

$$(.95) (.85) = 81\% \text{ PLS}$$

▣ Need to buy ~20% more seed

Seed Co. A

▣ 90% pure KBG blend with 80% germ.

▣ Costs \$1.35/ lb.

Best Buy?

Seed Co. B

▣ 95% pure KBG blend with 92% germ.

▣ Costs \$1.50/ lb.

Seed Co. A

$$(.90) (.80) = 72\% \text{ PLS}$$

$$(\$1.35/ \text{lb.}) / (.72) = \$1.88/ \text{lb.}$$

Seed Co. B

$$(.95) (.92) = 87\% \text{ PLS}$$

$$(\$1.50/ \text{lb.}) / (.87) = \$1.72/ \text{lb.}$$

Best Buy

Aggressive overseeding?

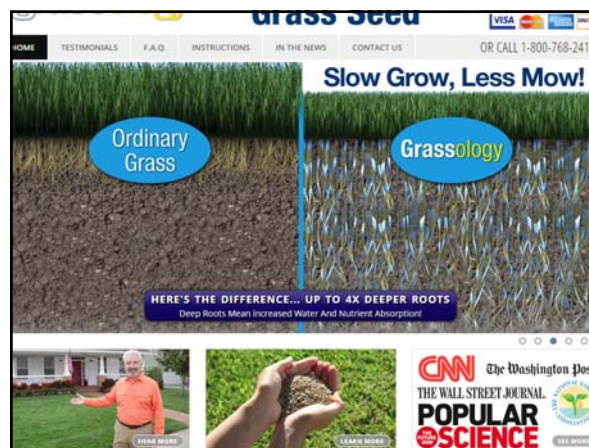
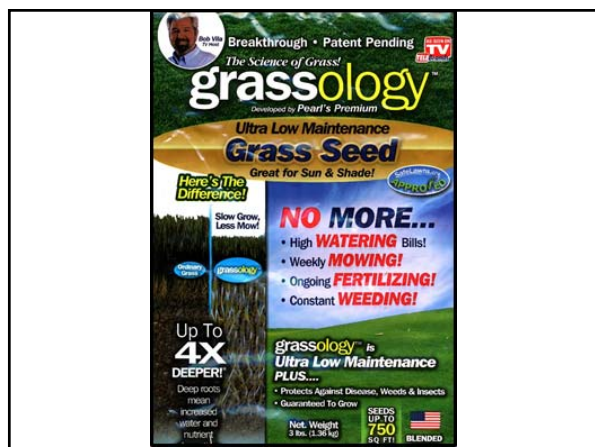
Perennial
Ryegrass
6 lb/1000 ft²
Weekly

August

Control Plot

Ryegrass 6# weekly

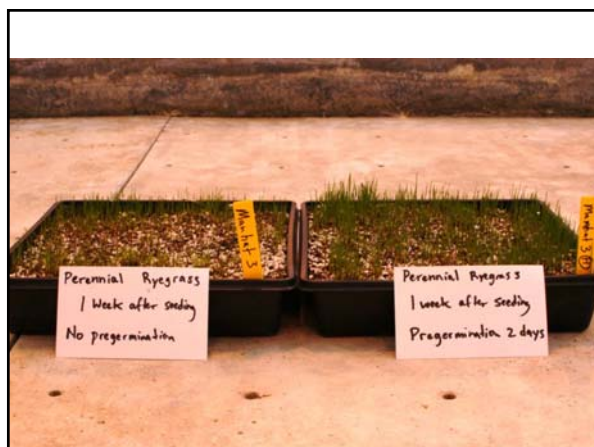
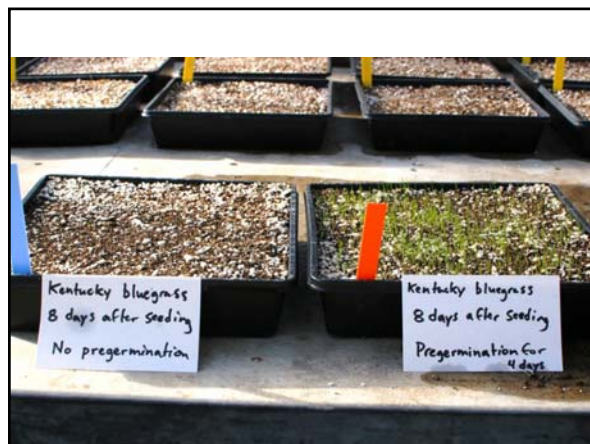
December



Nine Steps to Establish a Lawn

6. Apply starter fertilizer
7. Spread the seed
8. Spread Mulch
9. Irrigate

More information in UW Learning Store
Publication A3434

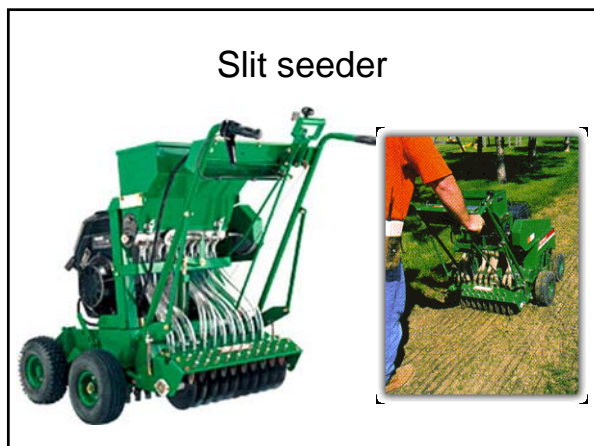


Pre-germination process

1. Begin the process 4-5 days before you plan to seed
2. Submerge seed for 12 hrs, consider adding kelp, fungicide
3. Drain seed for 12 hrs
4. Submerge for another 12 hrs
5. Allow to dry just enough so you can spread or mix with divot sand

<http://apps.hort.iastate.edu/turfgrass/extension/EGathfldpregerm.pdf>

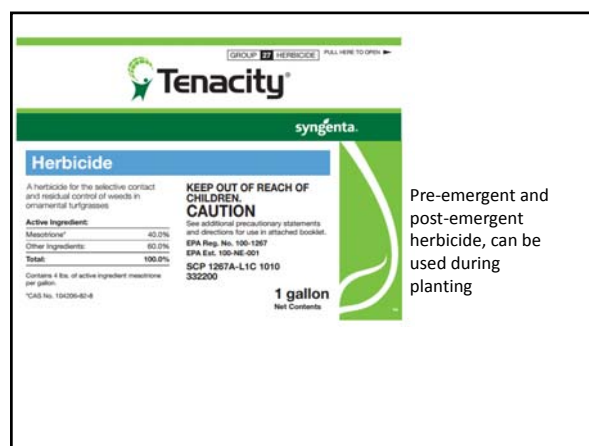
Slit seeder





Active ingredient:
Siduron

Pre-emergent
herbicide, can
be used during
planting



Pre-emergent and
post-emergent
herbicide, can be
used during
planting

Active Ingredient: Quinclorac



- Post-emergent herbicide, safer on young seedlings than most other herbicides
- Grassy weeds (crabgrass) and broadleaf weeds

What about Mulches?

Table 3. Mulch Type by Season Interaction 28 Days After Seeding (Averaged over Turfgrass Species)

Mulch type	Date			
	Summer 1995	Fall 1995	Summer 1996	Fall 1996
	Percent cover (%)			
Control	11.5	14.2	19.8	1.0
Germinator	21.5	19.5	26.7	1.8
PennMulch	45.0	64.2	55.2	9.0
Hydro mulch	44.2	51.5	53.8	5.0
Crumb rubber	9.0	65.2	18.3	7.7
Native soil	7.3	12.7	21.5	0.8
Straw	44.3	52.5	79.7	5.2
Compost	33.5	40.7	10.8	3.0
LSD (0.05) for different mulches within the same date			13.0	
LSD (0.05) for different dates within the same mulch type			16.6	

ENCAP PAM-12 polymer mulch

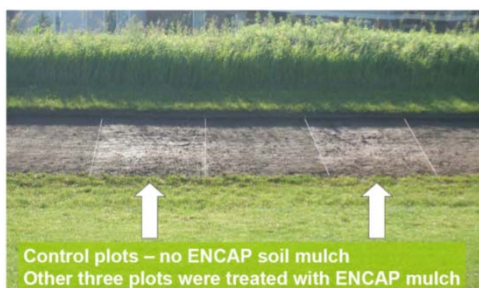


Figure 1. Digital image of a portion of the study area, two days after seed and treatments were applied. The control plots (no soil mulch) reflect more light, indicating surface sealing while the ENCAP-treated plots have a greater degree of aggregation, little surface sealing and therefore reflect less light.

ENCAP PAM-12 polymer mulch



No mulch - crusting



PAM-12 - no crusting

