



Today's Learning Objectives

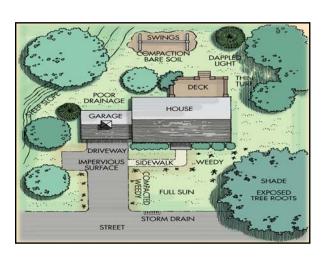
- 1. Understand the advantages and disadvantages of the major cool-season grass species.
- Learn how to evaluate the quality of seed mixtures and blends, including the newer trend of seed coatings.
- Understand how establishment techniques including fertilization, soil amendments, mulching, and herbicides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

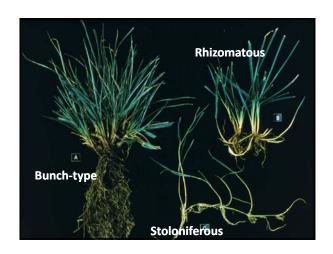
- **Site Conditions**
- Expected care
- Availability
- ■Cost



Selecting Turfgrasses

- Familiarity
- Availability
- **■Cost**
- What client wants
- ⑤Spec's



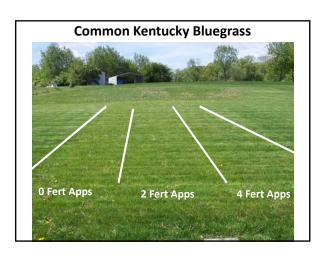


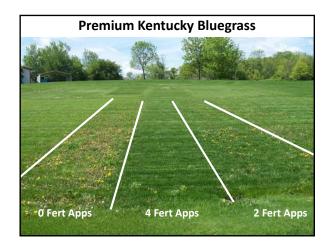


Kentucky Bluegrass



- 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

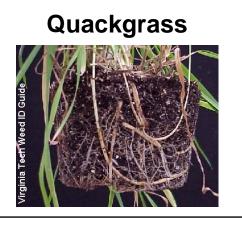


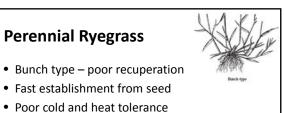




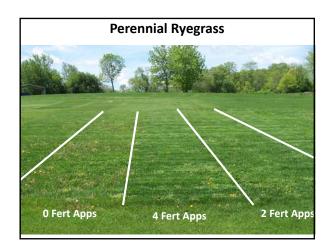








- Fair shade tolerance
- Some varieties resistant to above ground feeding insects (chinch bugs)
- Medium to high maintenance requirements





Annual or Italian Ryegrass



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



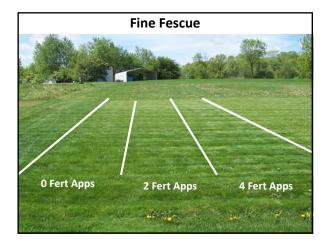


Fine Fescue

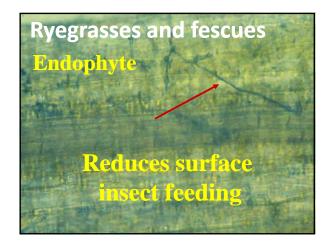




- Five closely related species: creeping red fescue, chewings fescue, hard fescue, sheeps fescue,
- Low maintenance grass
- Quick germination, all bunch type except creeping red (rhizomes)
- Good in full sun or shade
- Will not persist in wet or compacted soils
- Poor traffic tolerance



Intolerant of extreme heat and drought



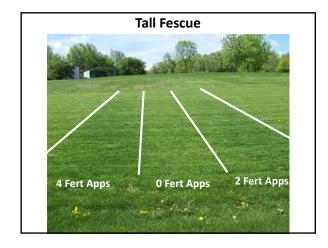




Tall Fescue



- 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



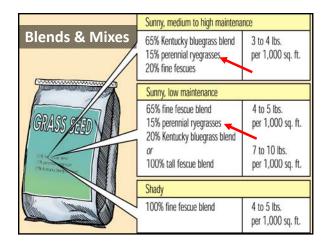






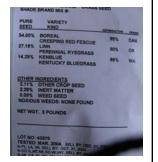
Mixes & Blends

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



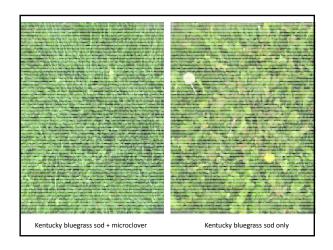
Seed Labels

- 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%



Mixes & Blends

- VNS = <u>v</u>ariety <u>n</u>ot <u>s</u>tated = 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)(1.5mil)=750K KBG

(0.5)(250K) =125K PR

■Total per lb.=875K seeds

So....

Seed Count

A 50-50 KBG/PR mix by seed ct

9750K/875K=85% KBG

125K/875K=15% PR

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

Seed Count

80/20 KBG/PR

(0.8)(1.5mil)=1.2 mil KBG

(0.2)(250K) =50K PR

■Total per lb.=1.25 mil seeds

So.....

Seed Count

An 80/20 KBG/PR by seed ct.

1.2 mil/1.25mil=96% KBG

50K/1.25mil =4% PR

■Total per lb.=1.25 mil seeds

So 80/20 is 96/4

Seed Label

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

Pure Live Seed

- (Purity) x (Germination)
- **MHow much will become...**

95% pure KBG blend with 85% germ.

- (.95) (.85) = 81% PLS

Seed Co. A

- 190% pure KBG blend with 80% germ.
- **■Costs \$1.35/ lb.**

Best

Seed Co. B

- **■95% pure KBG blend with 92% germ.**

Seed Co. A

- (.90) (.80) = 72% PLS
- (\$1.35/lb.)/(.72) = \$1.88/lb.

Seed Co. B

(.95) (.92) = 87% PLS



(\$1.50/ lb.) / (.87) = \$1.72 / lb.

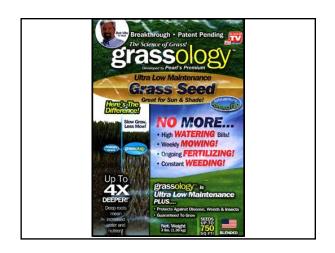
Aggressive overseeding?

August





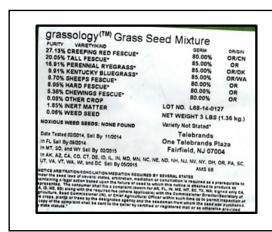














- Scotts and Pennington coated seeds were obtained from a retail outlet.
- Pennington seed coating contained fungicide and biostimulant.
- Scotts seed contained water-absorbant starch.
- Non-coated seed samples were developed by removing the coating from the seed just before planting.

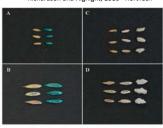


Fig. 1. Images of the various seed treatments tested in the study, including (A) Smart Seed kentucky bluegass of Pennington Seed, Madison, GA, (B) Smart Seed Lull Fescoe, (C) Turtbuilder kentucky bluegass (Scotts, Maryvelle, OH), and (D) Turtbuilder all Becue For all seed samples, the non-coarde seed is on the left. For the Turtbuilder at samples (C and D), the partial coated seed is in the middle and the heavily oxarde seed is on the right.

Are coated seeds worth the money?

- Neither coating technology had an effect on tall fescue speed of germination or total germination percentage in any of the soil types.
- Seed coating did have a positive effect on the speed of germination
 of Kentucky bluegrass in a sandy loam soil, but did not improve the
 speed of germination or percentage emergence in the other soil
 types (loam and sit loam).
- These results support earlier findings that seed coating has minimal effects on establishment of turfgrass species. However, these coatings may provide benefits when attempting to establish turfgrasses in less than ideal conditions.

Mixture	Blend	Variety	High ET, irrigation		Moderate ET, irrigation	
			Coated	Uncoated	Coated	Uncoated
			Tie	me after seeding to	reach 50% covera	ge (d)
			Normal seeding rate			
		Barferia	dor	dnr	dur	dnr
		Bengal	53 W	56 b	55 b	6-4
Dunes Mix*			53 b	61 b	54 b	59
		Panama	dar	dnr	103 a	dnr
	Turf Blue TM		61 b	59 b	69 ab	59
0.00	Turf Saver TM		59 b	66 a	73 ab	57
Turf Sense ^{TM*}			84 a	dnr	dor	dnr
			Reduced seeding rate			
		Barleria	dor	dur	dor	dnr
		Bengal	60	68	71	dnr
Dunes Mix			57	dur	53	dnr
		Panama	dine	dnr	dar	dnr
	Turf Blue TM		76	dnr	dear	dnr
	Turf SaverTM		74	dnr	5.3	109
Turf Sense TM.			day	dnr	dor	dar
bentgras 5 g et ² , Dans 00/R ²). Values in column follor it = 0.05). 'Minture of 'Hardrop' by Easenberg USA, Tange Tarenberg USA, Tange	oding rates (according to rates not Min 25 g mr.*, "Parasons" bers and by the same letter (separate and fescur, "Barron" kortesky bit mt, OR, blend of "Barlots", "Darn, OR, blend of "Barlots", no, OR, Mistaro of "Barcols" kr, no, Ne, Mistaro of "Barcols" kr, no, no, no, no, no, no, no, no, no, no	madagnass 10 g on ", Tu for each sending rate) suggrass, and "Ramis" sho vistor", "Barring son," and "Ba "Barringson", and "Laba	of Blue ¹⁶⁶ 10 g mt ² , T are not significantly diff rep finite. reteipels' kernacky blue rieth' tall finoue.	orf Saver ^{TS} 30 gins ² , and from them one another (Fi gram.	Turf Sense TM 10 g re- isher's protected least s	1 (1 g m 2 = 0.003)3

Part 3: Establishment Techniques

Nine Steps to Establish a Lawn

- 1. Soil test to determine need for lime and phosphorus
- 2. Prepare the site kill existing vegetation
- 3. Rough grade the site if needed
- 4. Amend the soil compost, lime, topsoil, etc.
- 5. Final grade remove rocks, lightly roll

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

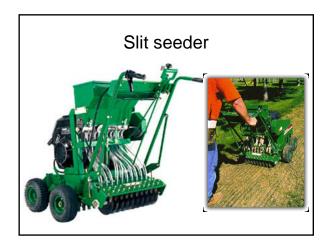




Pre-germination process

- 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

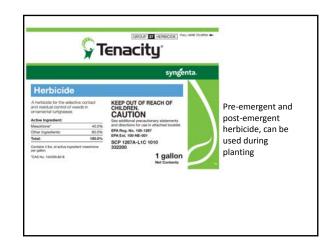






Active ingredient: Siduron

Pre-emergent herbicide, can be used during planting



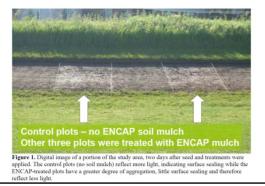
Active Ingredient: Quinclorac



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

What about Mulches? Mulch Type by Season Interaction 28 Days After Seeding (Averaged over Turfgrass Table 3. Species) Mulch type Summer 1995 Summer 1996 Percent cover (%) 11.5 1.0 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 7.3 Native soil 12.7 21.5 0.8 44.3 Straw 52.5 79.7 5.2 33.5 Compost 40.7 10.8 3.0 LSD for different mulches within the same date LSD (0.05) for different dates within the same mulch type 13.0

ENCAP PAM-12 polymer mulch



No mulch - crusting PAM-12 - no crusting

ENCAP PAM-12 polymer mulch

