



Pre-Conference Education Sessions

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DLF



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SEEDS & SCIENCE

JAN, 2024 SFMA

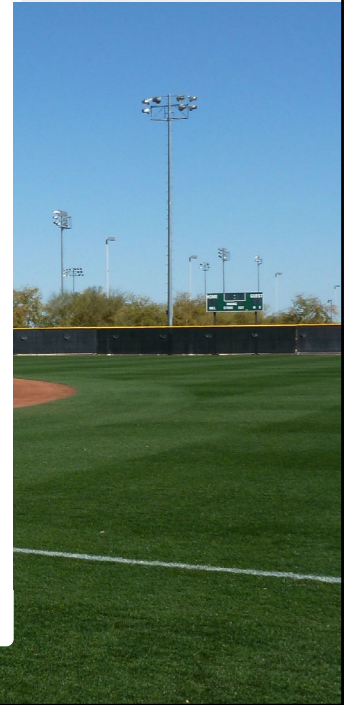
RECORDS AND PHOTOS FOR PROBLEM SOLVING

DR. LEAH BRILMAN
DIRECTOR OF PRODUCT MANAGEMENT AND TECHNICAL SERVICES

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Help Us Help You

- 1 Problem in Turf
- 2 Weeds, Disease, thinning, etc.
- 3 Photos sent via email or text – often 3rd party
- 4 What is this weed, disease, issue?
- 5 Info we need to help solve problem
- 6 Why did my seed not come up?
- 7 Why save seed tags?
- 8 What is wrong?



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Lets Start

First Questions for ID of Problem


- Species of Turfgrass planted and/or there previously
- Where are you located
- When planting occurred
- Soil Type – Soil Test if possible
- Weather at time of planting or recent weather (disease ID)
- Rainfall or irrigation (water quality)
- Management – fertilizer, mowing frequency and height, was previous turf sprayed out multiple times (soil disturbed?)
- Photo of tag (allows tracking lots, species, cultivars, weeds)
- High resolution photos of turf and weeds. Broadleaf, grass or sedge. When appeared?

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What not to do

Weed ID – Broadleaf, Grass or Sedge


1. Broadleaf Weeds
 - Two leaf seedling (Dicot)
 - Leaves have central vein and branch off
 - Central tap root or fibrous (can have stolons, etc.)
 - Annual or perennial – easier to control
2. Grass Weeds
 - One leaf seedling (monocot)
 - Straight veins in leaves
 - Hollow stems with nodes – flat or rolled
 - Fibrous roots (can have stolons/rhizomes)
 - Annual or perennial – Grass out of grass harder to control
3. Sedges
 - One leaf seedling
 - Solid triangular stems (sedges have edges)
 - Can look like grass



Narrowleaf plantain



Green Kyllinga



Annual ryegrass



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We want to help

Send us Good Photos

- High dpi and preferred jpeg format (new heic can be problem)
- Low dpi cannot zoom in to look at details
- If you seeded, when, what, [Photo of Seed tag with lot number](#)
- Grades of seed – more expensive seed = usually less problems
- Seed Testing – looks at 2.5 grams to 50 grams of seed in 55,000 lbs (or more) of seed
- Always chance testing will miss some Weed or Other Crop Seed
- Perennial Weed or Other Crop Seed more problem than annual (usually)
- Examples – Other Crop Species you may not want in Turf

• Creeping bentgrass	Annual ryegrass	Orchardgrass
• Poa trivialis	Tall Fescue	Timothy
• Bermudagrass		



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Buying seed?

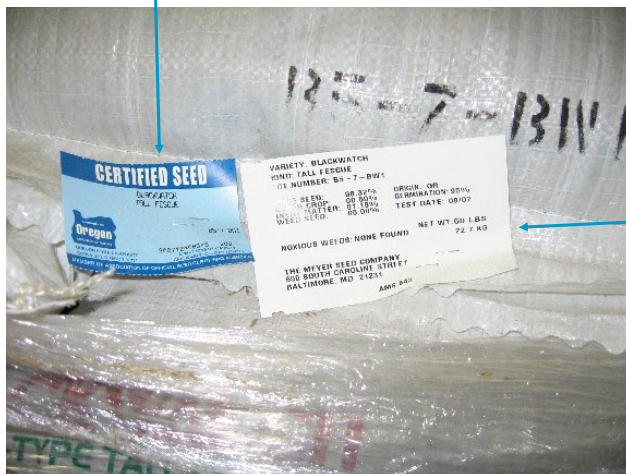
There are 2+ tags to look for...

- Oregon or Other State Blue tag = Certified tag
 - Statement of genetic purity
 - Ex: regulated by State of Oregon and administered by the Oregon State University
- White tag = Analysis tag
 - Statement of content including % of pure seed, varieties, germination, inert, crop, weeds
 - Regulated by the Federal Seed Act & State Regulations
 - Lot Number allows tracking



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Blue certification tag



White analysis tag



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High Quality Tall Fescue/ KBG Mixture

Things to look for

- Cultivars specified
- Data available in recent NTEP or other trials
- High Germination
- Low Crop and Weed
- No Noxious weeds

TROPHY XRE

TURFGRASS MIXTURE

Purity	Variety/Kind	Germination	Origin
37.39%	CROSSFIRE 4 TALL FESCUE	94%	OR
33.41%	FOXHOUND TALL FESCUE	93%	OR
23.65%	GARRISON TALL FESCUE	94%	OR
04.91%	FIELDER KENTUCKY BLUEGRASS	90%	OR

00.05% Other Crop Seed
 00.59% Inert Matter
 00.00% Other Weeds

Test Date: 08/2022

Noxious Weed Seeds: None Found

Net Wt. 50 LB (22.68 KG)

DLF
 PO BOX 229
 HALSEY, OR 97348

AMS 68
Lot No. L20M-22-4265



What does this tag tell me??

1. Mixture/Seed Variety Names/Purity
2. Other Crop Seed
3. Inert Matter
4. Other Weed Seeds
5. Noxious Weeds
6. Lot Number
7. Net Weight of Bag
8. Germination Rate
9. Place of Origin
10. Test Date
11. AMS Number
12. Name and Address of Producer

TROPHY XRE

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What does this tag tell me??

1. Mixture/Seed Variety Names/Purity

- This example is a mixture of KBG/TF- all names listed
- Species is listed next to name (Tall Fescue, Kentucky Bluegrass)
- Purity- % by weight of each grass variety and kind named
- You want the purity to be as close to 100% as possible- things that take away from purity are: Crop, inert, and weed

1. →

TROPHY XRE			
TURFGRASS MIXTURE			
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00.00% Other Weeds		Test Date: 08/2022	
Noxious Weed Seeds: None Found		Net Wt. 50 LB (22.68 KG)	
DLF PO BOX 229 HALSEY, OR 97348		AMS 68 Lot No. L20M-22-4265	



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What does this tag tell me??

2. Other Crop Seed

- Listed by % in weight.
 - Other seeds of plants grown as crops
 - Must be listed by name if over 5%
 - EX. Fescue, Annual Rye, Perennial Rye
- Other Crop Species you may not want in Turf

Creeping bentgrass	Annual ryegrass
Orchardgrass	Poa trivialis
Tall Fescue	Timothy
Bermudagrass	

2. →

TROPHY XRE			
TURFGRASS MIXTURE			
Purity	Variety/Kind	Germination	Origin
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DLF PO BOX 229 HALSEY, OR 97348		AMS 68 Lot No. L20M-22-4265	



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What does this tag tell me??

3. Inert Matter

Anything that has escaped the cleaning process or added to the seed, all matter that is not seed.

i.e. stems, broken seeds, stones, florets

If seed is coated, all of the enhancements will be in the inert matter category. Ask what coating is?

LANDSCAPER 40

GRASS SEED MIXTURE PRODUCT NO. 22-1400

Purity	Variety/Kind	Germination	Origin
13.68%	KENTUCKY BLUEGRASS+	80%	OR
12.33%	RED FESCUE, CREEPING TYPE+	85%	DK
09.57%	MCKINLEY ANNUAL RYEGRASS	90%	OR
07.73%	ZOOM PERENNIAL RYEGRASS	90%	MN
03.06%	SELWAY KENTUCKY BLUEGRASS	85%	WA
03.04%	KENBLUE KENTUCKY BLUEGRASS	85%	WA

00.00% Other Crop Seed
 50.56% Inert Matter*
 00.00% Other Weeds

WARNING: COATED SEED NOT FOR ANIMAL OR HUMAN CONSUMPTION

*Inert contains 50% ProNitro® Plus Coating Material

Total Other Ingredients
 0.2% Anionic Polycrylamide Copolymer (Emulsion) + VARIETY NOT STATED
 (MS Classifies this as a Low-Analysis Fertilizer)

Information regarding the contents and levels of metals in this product is available on the internet at: <http://www.aapfo.org/metals.html>

Test Date: 06/2022
 In MN, Sell by: 09/2023

Noxious Weed Seeds: None Found



Net Wt. 25 LB (11.34 KG)
 AMS 68
 Lot No. L68-22-4073

3. →

TROPHY XRE

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00.05% Other Crop Seed
 00.59% Inert Matter
 00.00% Other Weeds

Test Date: 08/2022

Noxious Weed Seeds: None Found Net Wt. 50 LB (22.68 KG)

DLF AMS 68
 PO BOX 229
 HALSEY, OR 97348 Lot No. L20M-22-4265

What does this tag tell me??

4. Weed Seed

% of weed seed contained in the bag

Seeds defined as weeds by state

i.e. Rattail Fescue, etc. Usually easier to control than crop seed

4. →

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Test Date: 08/2022

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DLF AMS 68
 PO BOX 229
 HALSEY, OR 97348 Lot No. L20M-22-4265



What does this tag tell me??

5. Noxious Weeds

- Unwanted grasses and weeds
i.e. Ground ivy, Canada Bluegrass
- Refer to state list of Noxious weeds
- Varies by state
- Noxious weeds are often species of more concern in production ag than in turf

5. →

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DLF

PO BOX 229

HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265



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What does this tag tell me??

6. LOT NUMBER

- Most important information to trace seed lot
- If you do not keep tags write this down
- Lot identification number. Given when packaging
- Can be traced back to specific tests.

TROPHY XRE

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AMS 68

Lot No. L20M-22-4265

6. →



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What does this tag tell me??

7. Net Weight

Net weight of the bag will be listed.

TROPHY XRE

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DLF
 PO BOX 229
 HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265



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What does this tag tell me??

8. Germination Rate

Will be listed for each variety on label

This % reflects number that germinated in a lab under ideal conditions during testing

Can be used to determine PLS

PLS is % of a quantity of seed that will germ

Purity % X Germination (Average)

$$99.36 \times 93 = 9,240$$

$$9,240 / 100 = 92\%$$

TROPHY XRE

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 HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265



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What does this tag tell me??

9. Place of Origin

Tells you what state the seeds were produced in.

TROPHY XRE

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HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265



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What does this tag tell me??

10. Test Date

- The date that the seed purity and germ rate were tested.
- Different states have varying months this test is good for.
- Seed lots can be retested for germination
- Properly stored seed maintains germination for minimum of 3 to 6 years depending on species

TROPHY XRE

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HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265



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What does this tag tell me??

11. AMS Number

- Agricultural Marketing Service (AMS)
- A code issued to interstate shipper for ID purposes

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DLF

PO BOX 229

HALSEY, OR 97348

AMS 68

Lot No. L20M-22-4265

11.



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What does this tag tell me??

12. Name and Address of producer

- Provides name and address of producer of the lot

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DLF

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AMS 68

Lot No. L20M-22-4265

12.



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Seed Quantities Purity – Purity, Crop and Weed or UGS
 25 grams Kentucky Bluegrass, 50 grams Perennial ryegrass or Tall Fescue



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Seed Test

- Certified seed
- 5.187 grams analyzed
- 99.88 Pure
- 50.22 grams - All States Noxious weeds
- No Crop or weed
- In Oregon Certified Seed must be examined by Oregon State University Seed Laboratory
- Oregon tests can represent 55,000 lbs, no limit in other states
- Information used for tagging

OSU Oregon State University Seed Laboratory
 Corvallis, Oregon 97331
 (Member Association of Official Seed Analysts)

Phone: (541) 737-4464
 Fax: (541) 737-2126
 http://www.oscs.orst.edu

Report of Seed Analysis

NAMES AND ADDRESSES: Wilco Farmers - Donald PO BOX 37 DONALD OR 97020		DATE RECEIVED 07-31-2012	DATE COMPLETED 09-06-2012	TEST NO 180760
Haerner Farms 12485 ARNDT RD NE AURORA OR 97002		SENDER'S INFORMATION		
OSU Seed Research of Oregon		KIND: Tall fescue VARIETY: CCR1 (Grande J) GENUS/SPECIES: Festuca arundinacea LOT NUMBER: M2-12-329 SIZE OF LOT: 1,100 Sacks; 55,000 Pounds FIELD NUMBER: 111 SAMPLE TYPE: Official Certification C-24 OTHER INFORMATION: g added Req 09-16-2012		

Exp-C Generation *The information provided here is that of the sender and not of the laboratory.

PURE SEED COMPONENT(S):	PURITY ANALYSIS				VIABILITY ANALYSIS (Date completed: 09-06-2012)				TEST	
	Germ-ination %	Dormant %	Hard Seed %	Total Viable %	Total Seeds (Germ)	No. Seeds Tested	Days Tested	FLUOR %	TZ %	
Tall fescue Festuca arundinacea	99	X	X	99	400	14	X		X	
OTHER CROP SEED:	0.00 %									
INERT MATTER:	0.12 %									
WEED SEED:	0.00 %									

COMMENTS: Meets OSCS viability standard
 7 day Pre-kill

OTHER CROP SEED: All States (Except Hawaii) NOX. WEED SEEDS 50.22 GMS. ANALYZED: None Found

INERT: Sterile florets, stems, chaff: None Found

WEED SEED: None Found

OTHER DETERMINATIONS: Meets OSCS purity standard
 EXCLUDING UGS. Certified standards applied by OSCS to seed quality results and sample eligibility determine final certification approval.

TEST CODES AND FEES: \$141.00 4 E

RULES FOLLOWED OTHER THAN AOSA: SIGNATURE *[Signature]*



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Seed Test

- Not Certified Test
- Sample submitted by company or grower
- Certified Test the seed is sampled by the State
- 97.77 Pure
- 2.03 Crop – Ryegrass (Could be annual or perennial) and Bentgrass (many species)
- 0.04 Weed - *Alopecurus* (Water foxtail, perennial can look like annual ryegrass)
- Less expensive seed - Less testing, no certification fees, high crop
- You get what you pay for

P. O. Box 258 Halsey, OR 97348 Phone: (541) 359-2855 FAX: (541) 359-2856

REPORT OF SEED ANALYSIS

NAMES AND ADDRESSES:		DATE RECEIVED 1/15/2011	DATE COMPLETED 1/20/2011	TEST NO. 20044
SENDER'S INFORMATION*		KIND:	Tall Fescue	
		VARIETY:	Hesperomere	
		GENUS/SPECIES:	Festuca arundinacea	
		LOT NUMBER:	L10-11-13F	
		SIZE OF LOT:	54,000 lb.	
		FIELD NUMBER:	N/A	
SAMPLE TYPE:		Submitted Sample		
OTHER INFORMATION:		GROWER/LAL: KRC/PP		

*The information provided here is that of the sender and not of the laboratory.

PURE SEED COMPONENT(S): (±.1000 GRAMS ANALYZED)	Grams In/100 g	Dormant %	Hard Seed %	VIABILITY ANALYSIS				
				Total Viable %	No. Seeds (Count)	Days Treated	TFL %	TZ %
FESTUCA ARUNDINACEA	97.50	x	x	99.50	400	14 +Spc	x	x
OTHER CROP SEED	2.03 %							
INERT MATTER	0.16 %							
WEED SEED	0.04 %							

OTHER CROP SEED: in 5.1890 grams
Lotum spp. (Ryegrass) 1,061 per lb.
Agrostis spp. (Bentgrass) 87 per lb.

ALL STATES NOX. WEED SEEDS: 30.00 GMS ANALYZED:
Eradicating H: None found

INERT MATTER: broken seeds, chaff, empty florets, stems

WEED SEED: in 5.1810 grams
Alopecurus geniculatus (Water Foxtail) 437 per lb.

OTHER DETERMINATIONS: Not conducted

Date Issued: 1/20/2011

SIGNATURE: *Synda B. Howe*

REGISTERED SEED TECHNOLOGIST - SEAL NO. 099

*Variety declared by seller. This seed laboratory does not confirm variety designation. THIS LABORATORY DISCLAIMS ANY RESPONSIBILITY FOR THE ACCURACY OF THE SAMPLING. The purity and germination test results reported on this form have been carried out in accordance with AOSA rules unless otherwise specified.



Undesirable Grass Seed - UGS

- Bentgrasses- *Agrostis* spp.
- Bermudagrasses – *Cynodon* spp.
- Annual bluegrass – *Poa annua*
- Rough bluegrass – *Poa trivialis*
- Meadow Fescue – *Schedonorus pratensis* (*Festuca pratensis*)
- Tall Fescue – *Schedonorus arundinaceus* (*Festuca arundinacea*)
- Orchardgrass – *Dactylis glomerata*
- Redtop – *Agrostis gigantea*
- Timothy – *Phleum pratense*
- Velvetgrass – *Holcus lanatus*



Identification of Grass Weeds

- More difficult than broadleaf weeds
- Standard taxonomic texts depend on seedheads – Vegetative differences much harder
- Key characteristics for ID – need high quality photos at high magnification
 - Ligule – size, shape, hairs, etc.
 - Vernation – Rolled or folded in bud
 - Auricles – Presence and size (clasping?)
 - Collar- Continuous, Divided, twisted
 - Sheath – Split, fused
 - Growth habit – Bunch, rhizomes, stolons (May not see on young plants)
 - Leaf tip – pointed, boat shaped
 - Hairy, rough leaf surface
- Many potential grass weeds not in Vegetative Keys



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Identification of Grass Weeds – Light green grass growing early spring



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Identification of Grass Weeds – Light green grass growing early spring



Downy brome



Annual Ryegrass

Both annual grasses – keep mown for control



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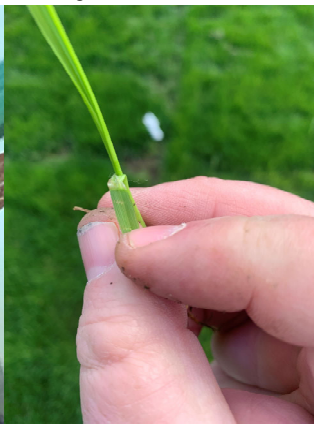
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Identification of Grass Weeds- Annual ryegrass Excellent photos sent by customer Helps distinguish from more serious weeds

Rolled vernation



Short ligule



Clasping auricles, fast growth



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Examples :Perennial Grasses with hard ID

- Quackgrass -clasping auricles. Quackgrass can be distinguished from annual ryegrass (*Lolium multiflorum*) by rhizomes. Quackgrass rolled vernation (like annual ryegrass) and a short, membranous ligule. Lower sheaths are often hairy while upper sheaths are usually smooth. Leaves are an ashy, blue-green color. Are very thick and sometimes have a longitudinal twist. Tall fescue also has auricles.
- Smooth brome - Perennial, two to three feet tall. Hairless, vertical stem. Conspicuous M- or W-shaped constriction on blade (V-neck sweater). Downy brome – annual, hairs on stem.



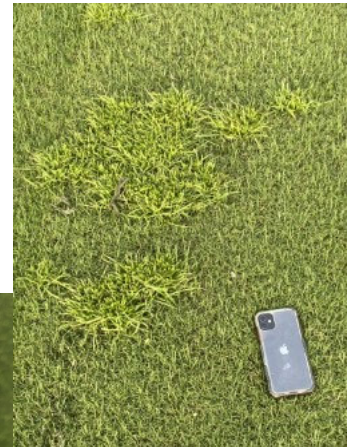
Barnhart, Iowa State Press. 31

Sedges, Rushes and others (can look like grasses)

- Sedges have solid triangular stem
 - Nutsedges
 - Kyllingas
- Rushes have hollow, cylindrical stems, Flowers on sides
- Horsetail – Primitive plant, rhizomes, fern-like leaves

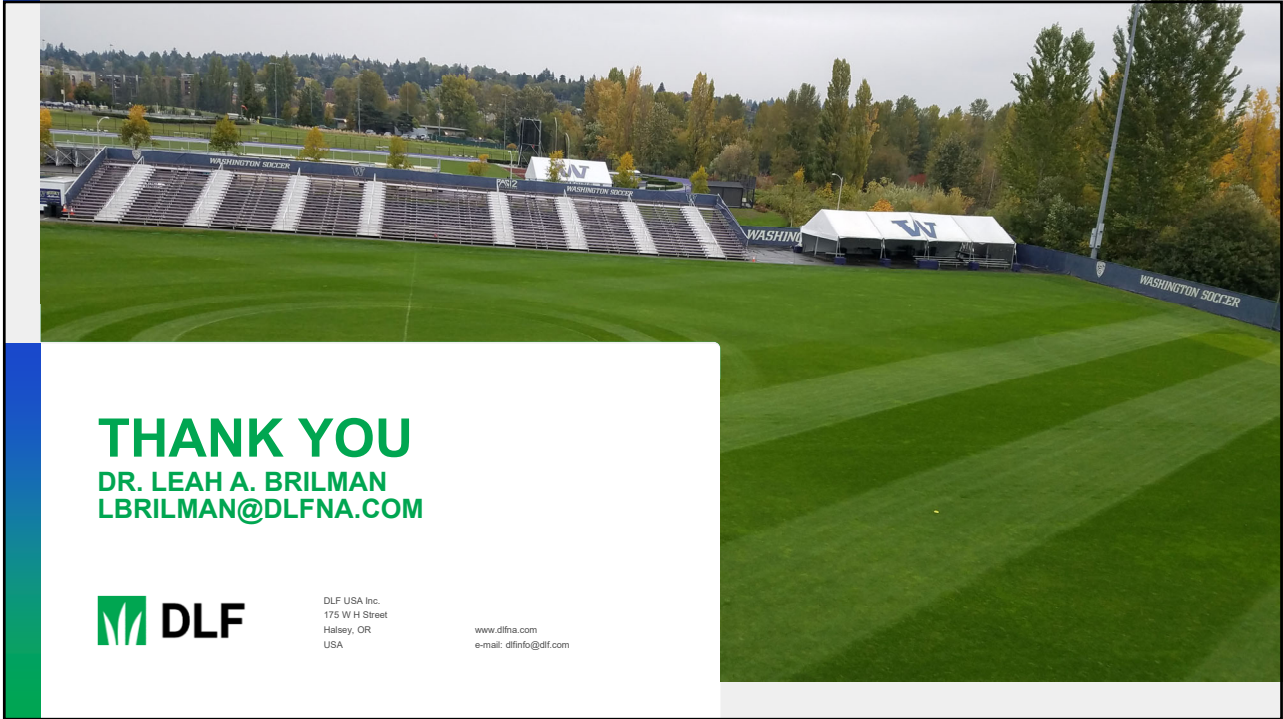
Sedges, Rushes and others (can look like grasses)

- Kyllinga – IDed as annual ryegrass
- Seedling annual ryegrass would not be that big (perennial ryegrass at 2-3 leaf stage)
- Seedheads in the plant pulled up
- Can see the ridges on the plants



Help us Help You

- Broadleaf or grass weed
- Did you remove existing weeds (especially perennials with rhizomes) or turf?
- If soil disturbed did you wait until weeds had germinated and kill again?
- Did you use herbicide like Tenacity as preemergent?
- Did you plant at time of year and with enough seed that turfgrass could rapidly compete?
- Did you keep a copy or photo of the label so the lot can be traced?
- Did you pay for high quality grass seed (no or low crop or weed)?



THANK YOU
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