



SEEDS & SCIENCE

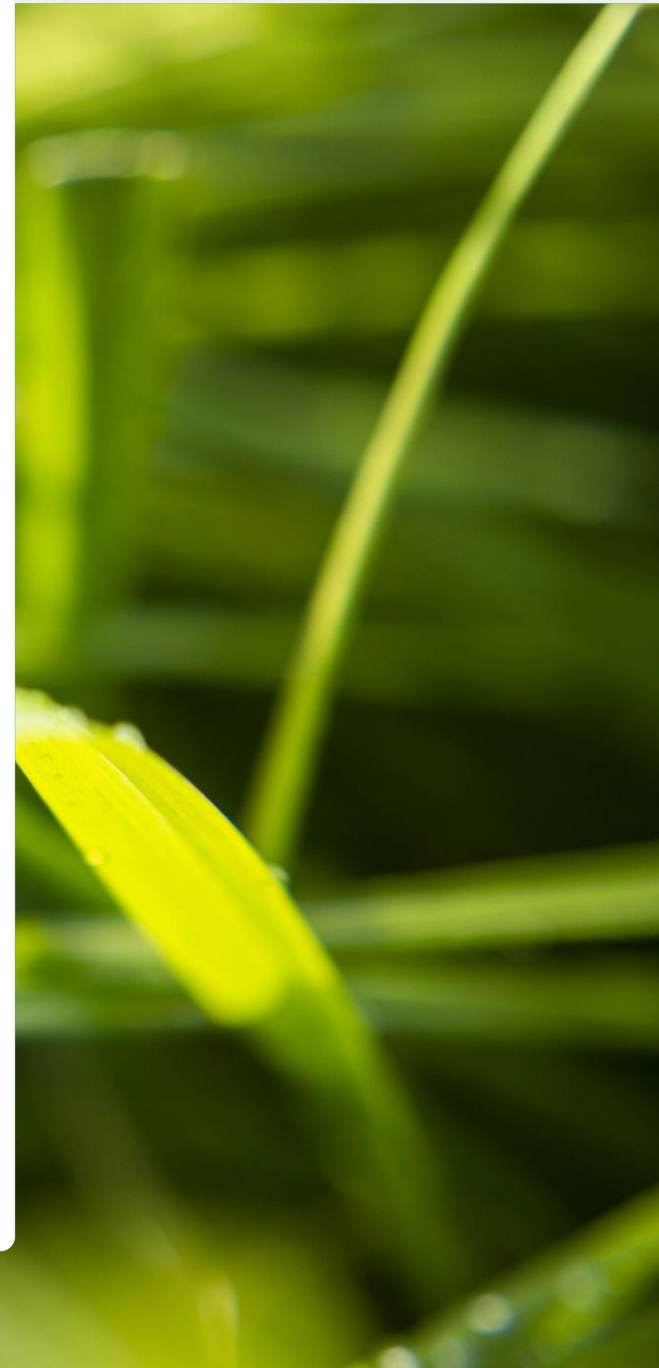
JAN, 2023 SFMA

HELP US HELP YOU- WHAT WE NEED

DR. LEAH BRILMAN
TECHNICAL SERVICES

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?
- 5 Assumption- This weed came in your seed
- 6 Why did my seed not come up?
- 7 What is this disease?
- 8 What is wrong?



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?

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



Annual ryegrass



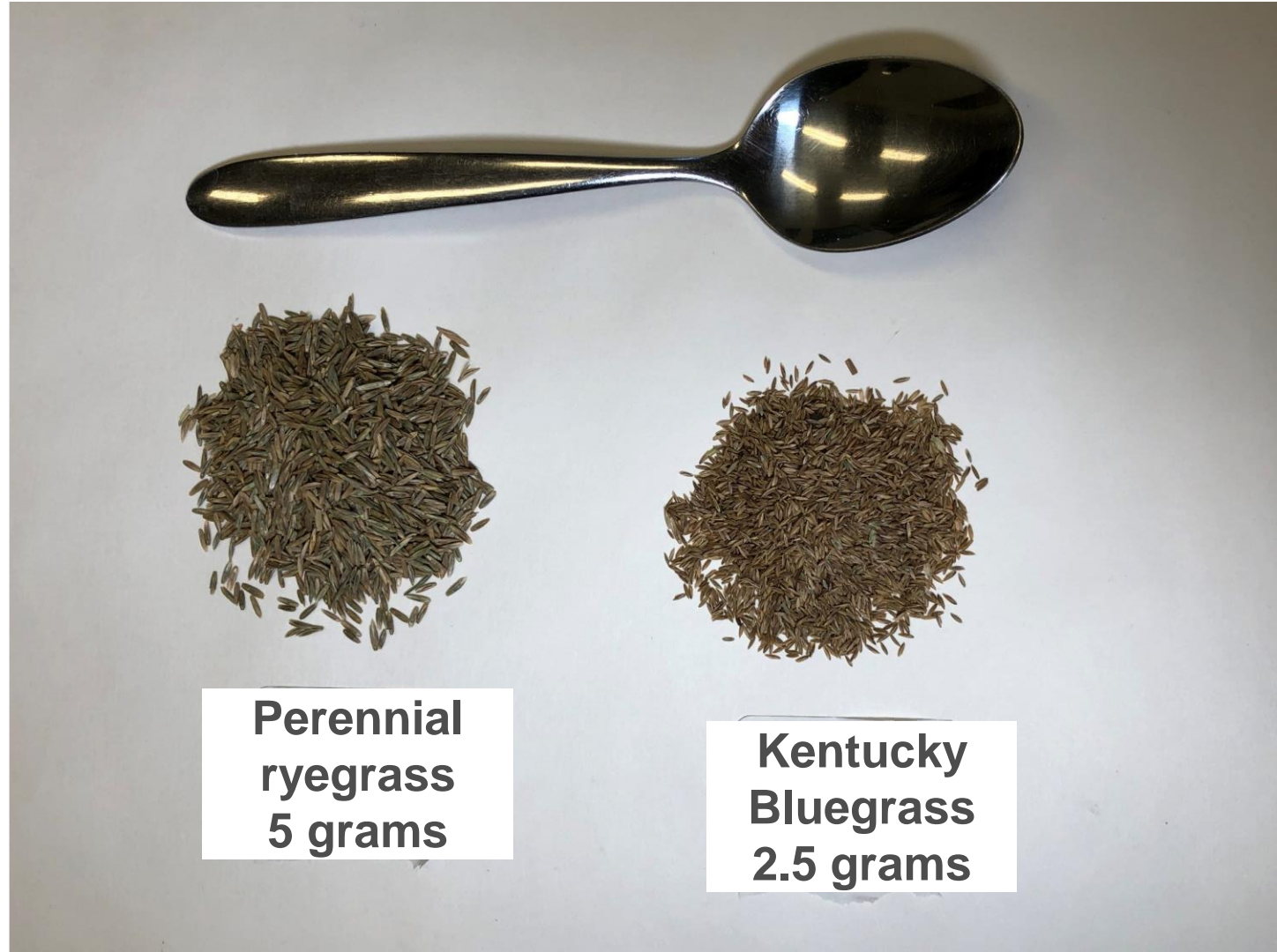
Green Kyllinga

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, 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

Seed Quantities Purity –
2.5 grams Kentucky Bluegrass, 5 grams Perennial ryegrass

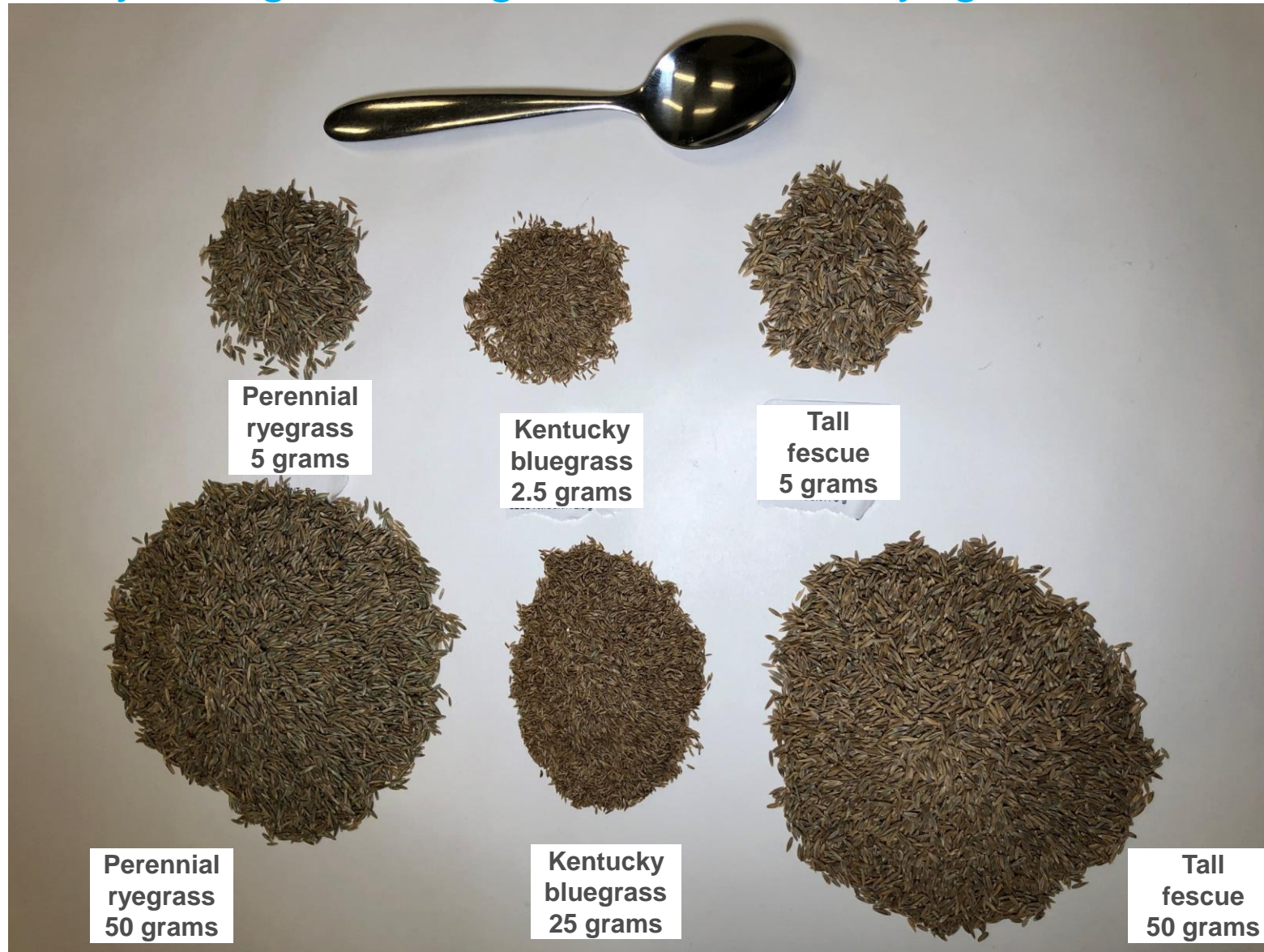


**Perennial
ryegrass
5 grams**

**Kentucky
Bluegrass
2.5 grams**

Seed Quantities Purity – Crop and Weed or UGS

25 grams Kentucky Bluegrass, 50 grams Perennial ryegrass or Tall Fescue





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

NAMES AND ADDRESSES: Wilco Farmers - Donald PO BOX 37 DONALD OR 97020 Haener Farms 12433 ARNDT RD NE AURORA OR 97002 CC: Seed Research of Oregon	DATE RECEIVED 07-31-2012	DATE COMPLETED 09-06-2012	TEST NO 180760
	SENDERS INFORMATION* KIND: Tall fescue VARIETY: CCR1 (Grande 3) GENUS/SPECIES: Festuca arundinacea LOT NUMBER: M2-12-329 SIZE OF LOT: 1,100 Sacks; 55,000 Pounds FIELD NUMBER: 11-1 SAMPLE TYPE: Official Certification C-24 OTHER INFORMATION: g added Req 08-16-2012		

PURITY ANALYSIS Exp-C Generation

(5.187 GRAMS ANALYZED)

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

PURE SEED COMPONENT(S):

Tall fescue	99.88 %
Festuca arundinacea	
OTHER CROP SEED	0.00 %
INERT MATTER	0.12 %
WEED SEED	0.00 %

VIABILITY ANALYSIS (Date completed: 09-06-2012)

Germ-ination %	Dormant %	Hard Seed %	Total Viable %	No. Seeds (Germ)	Days Tested	TEST FLUOR %	TZ %
89	X	X	89	400	14	X	X

COMMENTS: Meets OSCS viability standard 7 Day Pre-chill.

OTHER CROP SEED:	All States (Except Hawaii) NOX. WEED SEEDS	50.22 GMS. ANALYZED:
None Found	None Found	
INERT Sterile florets, stems, chaff. MATTER:		
WEED SEED:	OTHER DETERMINATIONS: Meets OSCS purity standard EXCLUDING UGS. Certified standards applied by OSCS to seed quality results and sample eligibility determine final certification approval.	
None Found		

TEST CODES AND FEES: g-141.00

RULES FOLLOWED OTHER THAN AOSA: SIGNATURE 4 E



TANGENT SEED LAB INT'L.

Phone: (541) 928-4014

www.tangentseedlab.com

Fax: (541) 928-5178

P.O. Box 331/33485 HWY 99E, Tangent OR 97389

Report of Seed Analysis

NAME AND ADDRESS: Seed Research of Oregon, Inc. 27630 Llewellyn Rd. Corvallis OR 97333 GROWER NAME AND ADDRESS: c/c:	DATE RECEIVED Sep-04-2012	DATE COMPLETED Sep-11-2012	LAB NO. M6812C-1
	SENDERS INFORMATION* KIND: Tall fescue VARIETY: Grande 3 GENUS/SPECIES: Not stated. LOT NUMBER: M2-12-329 SIZE OF LOT: Not stated. FIELD NUMBER: Not stated. SAMPLE TYPE: Submitted Sample OTHER INFORMATION: None.		

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

PURITY ANALYSIS (XXXX GRAMS ANALYZED)

PURE SEED COMPONENT(S):

Tall fescue (Festuca arundinacea) X %

VIABILITY ANALYSIS

*Viability of hard seed not determined. *This percentage indicates potentially viable seed.

Germ-ination %	Dorm-ant %	Hard Seed %*	Total Viable %*	No. Seeds (Germ)	Days Tested	Test Flour. %	TZ %	
X	X	N/A	X	X	X	X	X	X

PURITY NOT CONDUCTED X%
 OTHER CROP SEED X%
 INERT MATTER X%
 WEED SEED X%

COMMENTS:
 Germination Not Conducted.

OTHER CROP SEED:

None found.

All STATES NOXIOUS WEED SEED 50.16 GMS. ANALYZED:
 Except Hawaii And Undesirable Grass Seeds

None found.

INERT MATTER: N/A

% ERGOT N/A

WEED SEED:

None found.

OTHER DETERMINATIONS:

50.16 Gram Crop & Weed Examination.

TEST CODES AND FEES:

CW44

RULES FOLLOWED OTHER THAN AOSA:



Date Issued: Sep-11-2012

Ellen Mary

SIGNATURE

REGISTERED SEED TECHNOLOGIST SEAL #072
 AFFILIATE MEMBER OF COMMERCIAL SEED ANALYSTS OF CANADA

The Purity and germination test results reported on this form have been carried out in accordance with AOSA rules unless otherwise specified. Test results reflect the condition of the submitted sample and may not reflect the condition of the seed lot from which the sample was taken.

Seed Test - Same lot

- Additional Crop and Weed Exam
- 50 more grams examined
- All Crop and Weed looked for
- None found

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PURITY ANALYSIS (XXXX GRAMS ANALYZED)

PURE SEED COMPONENT(S):

Tall fescue (Festuca arundinacea) X %

VIABILITY ANALYSIS

*Viability of hard seed not determined. *This percentage indicates potentially viable seed.

Germ-ination %	Dorm-ant %	Hard Seed %*	Total Viable %*	No. Seeds (Germ)	Days Tested	Test Flour. %	TZ %	
X	X	N/A	X	X	X	X	X	X

PURITY NOT CONDUCTED X%
 OTHER CROP SEED X%
 INERT MATTER X%
 WEED SEED X%

COMMENTS:
Germination Not Conducted.

OTHER CROP SEED:

None found.

All STATES NOXIOUS WEED SEED 50.16 GMS. ANALYZED:
 Except Hawaii And Undesirable Grass Seeds

None found.

INERT MATTER: N/A

% ERGOT N/A

WEED SEED:

None found.

OTHER DETERMINATIONS:

50.16 Gram Crop & Weed Examination.



Date Issued: Sep-11-2012

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TEST CODES AND FEES:
 CW44

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Seed Test - Same lot

- Additional Crop and Weed Exam
- 50 more grams examined
- All Crop and Weed looked for
- None found

Seed Test

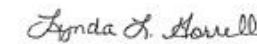
- Not Certified Test
- Sample submitted by company or grower
- Certified Test the seed is sampled by the State
- 97.77 Pure
- 2.03 Crop – Ryegrass (Could be annual or perennial) and Bentgrass (many species)
- 0.04 Weed - *Alopecurus* (Water foxtail, perennial can look like annual ryegrass)
- Less expensive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


 Seed Testing Inc.
 P. O. Box 258 Phone: (541) 369-2855
 Halsey, OR 97348 FAX: (541) 369-2856

REPORT OF SEED ANALYSIS

NAMES AND ADDRESSES:	DATE RECEIVED	DATE COMPLETED	TEST NO.
	11/10/2011	11/30/2011	20244
SENDER'S INFORMATION*			
KIND: Tall Fescue			
VARIETY: Rendell			
GENUS/SPECIES: Festuca arundinacea			
LOT NUMBER: L10-11-130F			
SIZE OF LOT: 54,000 lb.			
FIELD NUMBER: N/A			
SAMPLE TYPE: Submitted Sample			
OTHER INFORMATION: GROWER, L&L KROFF			

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

PURITY ANALYSIS		VIABILITY ANALYSIS							
(5.1890 GRAMS ANALYZED)		Germ-ination %	Dormant %	Hard Seed %	Total Viable %	No. Seeds (Germ)	Days Tested	TFL %	TZ %
PURE SEED COMPONENT(S): FESTUCA ARUNDINACEA		98.50	x	x	98.50	400	14 +5pc	x	x
OTHER CROP SEED		2.03 %							
INERT MATTER		0.16 %							
WEED SEED		0.04 %							
OTHER CROP SEED: in 5.1890 grams		ALL STATES NOX. WEED SEEDS <u>50.00</u> GMS. ANALYZED:							
Lolium spp. (Ryegrass) 1,661 per lb.		Excluding H:							
Agrostis sp. (Bentgrass) 87 per lb.		None found							
INERT MATTER: broken seeds, chaff, empty florets, stems		OTHER DETERMINATIONS: Not conducted							
WEED SEED: in 5.1890 grams		Date issued: 12/06/2011							
Alopecurus geniculatus (Water Foxtail) 437 per lb.		 SIGNATURE REGISTERED SEED TECHNOLOGIST - SEAL NO. 099 <small>REGISTERED MEMBER SOCIETY OF COMMERCIAL SEED TECHNOLOGISTS</small>							

*Variety declared by seller. This seed laboratory does not confirm variety designations.
 THIS LABORATORY DISCLAIMS ANY RESPONSIBILITY FOR THE ACCURACY OF THE SAMPLING.
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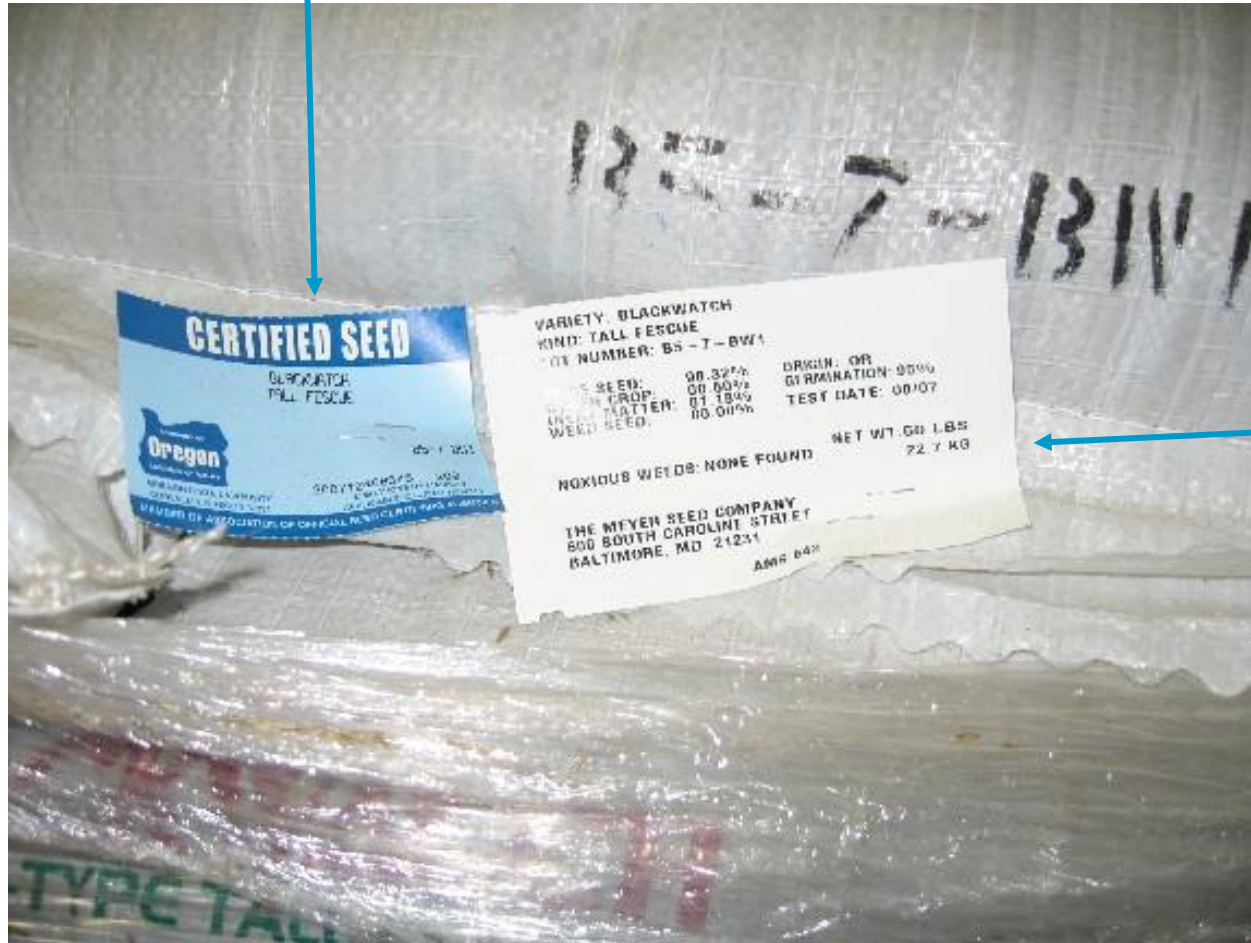


Buying seed?

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

Blue certification tag



White analysis tag

Undesirable Grass Seed - UGS

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

All weeds easier to ID with flower / seedheads – Do not want to wait that long

Broadleaf weeds

- Identification easier
- Look at shape of leaf, how margins look, how leaves attached to stem
- Stem shape – square, round, etc.
- Mow soon after germination can remove growing point
- Easier to remove with herbicides or pulling when young

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

Identification of Grass Weeds (C. Reynolds, Texas A&M)

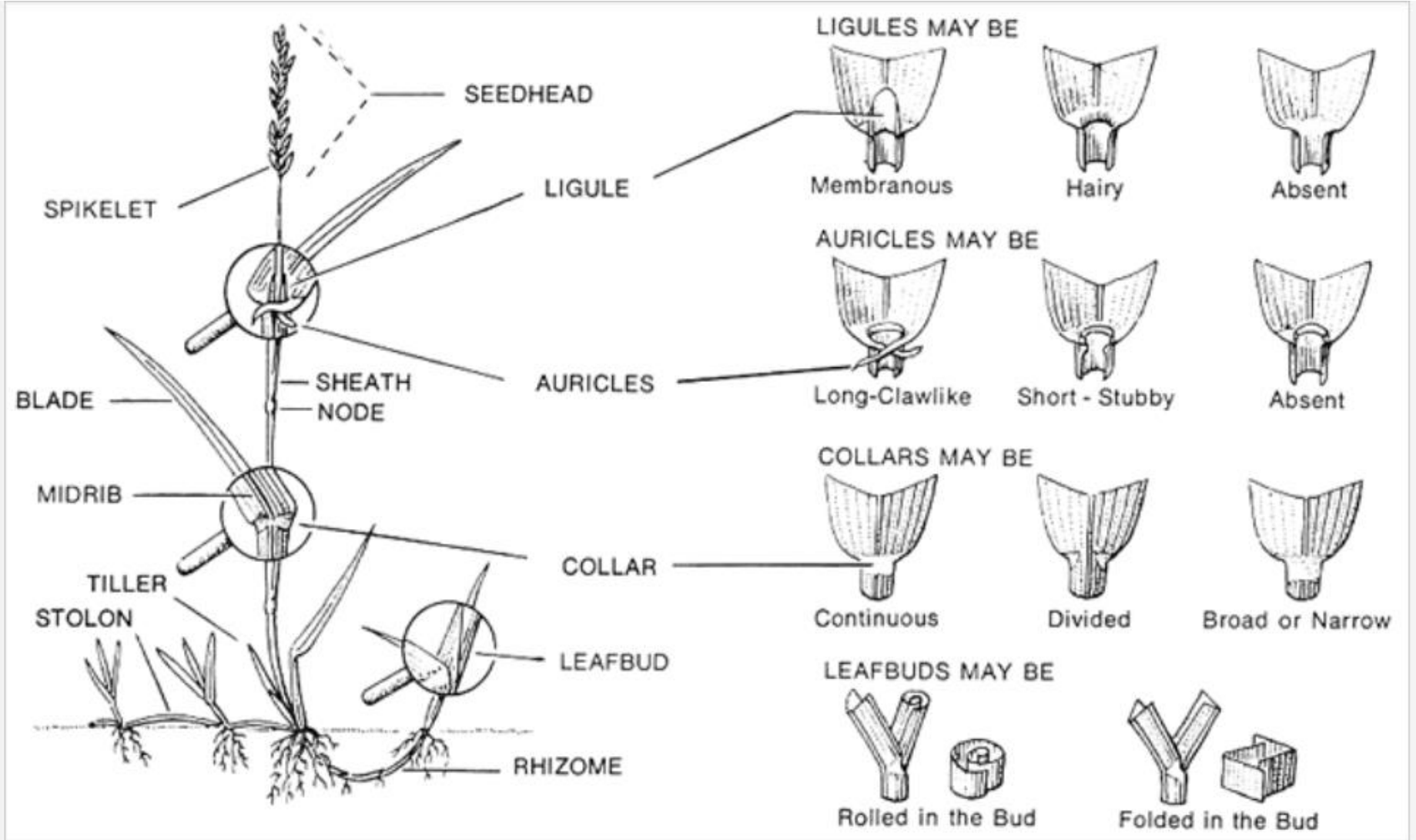


Figure 1. Turfgrass Plant Morphology and Identifying Features

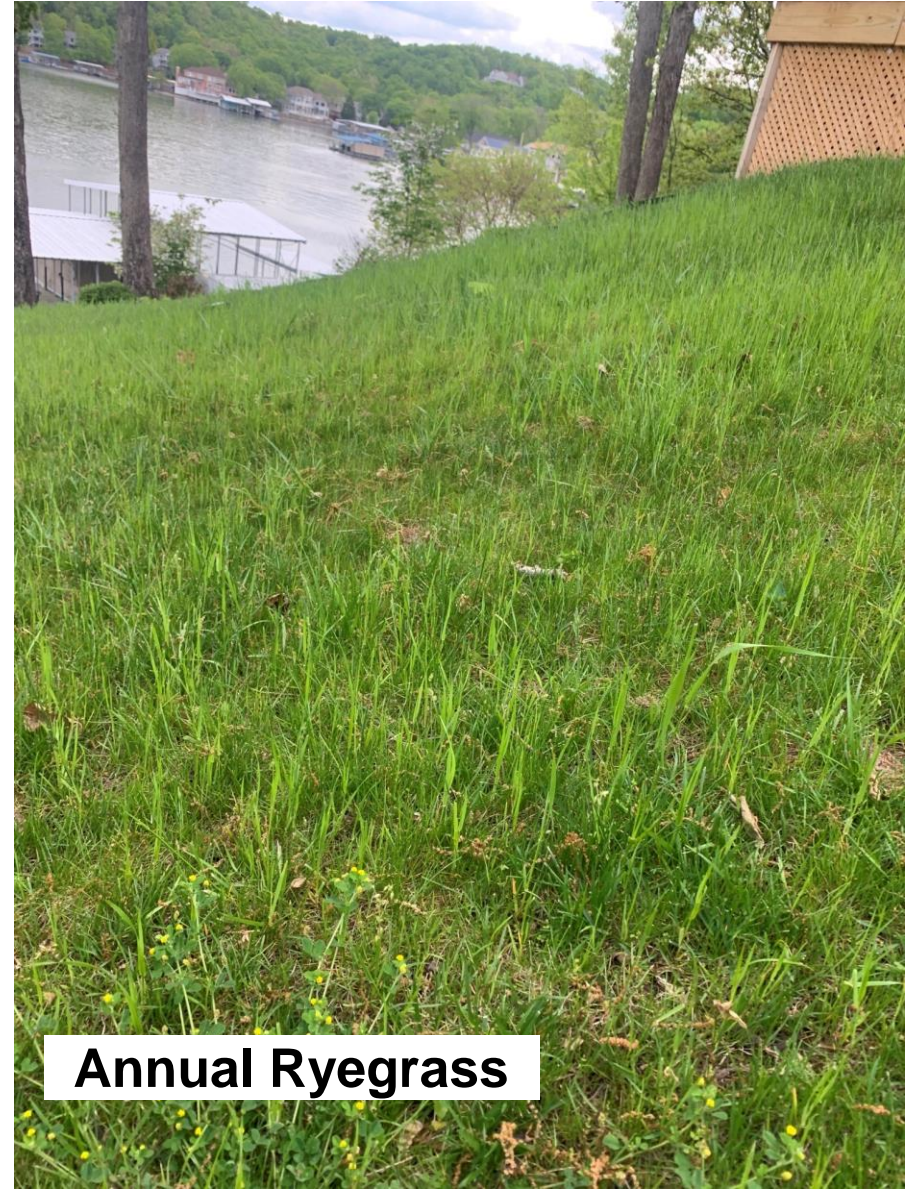
Identification of Grass Weeds – Light green grass growing early spring



Identification of Grass Weeds – Light green grass growing early spring



Downy brome
Both annual grasses – keep mown for control



Annual Ryegrass

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



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.



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 killed 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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