

Turfgrass Seeding Recommendations for the Pacific Northwest

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Introduction

Scientists at Washington State University, Oregon State University, and the University of Idaho have conducted turfgrass variety evaluation trials in the Pacific Northwest for over 50 years, and continue to cooperate in local, regional, and national testing programs to provide current information on the performance of most turfgrass species marketed today. Data from these trials are used as the basis for recommendations to establish turfgrass under common and complex field situations. The National Turfgrass Evaluation Program (NTEP) lists all the data collected from around the country at www.ntep.org. For best results, use data from the research site closest to your turfgrass management location.

The blends, mixtures, and rates in this publication are current recommendations for homeowners, seed companies, salespersons, and turfgrass managers based in Washington, Oregon, and Idaho. No variety names are included because of the variability of adaptation for specific regions of the Pacific Northwest and the constant changes as to which cultivars may be available to turfgrass managers. If you have questions about particular varieties, contact your local Extension personnel or go to the website of the nearest turfgrass program.

Turfgrass Seed Characteristics

Seeds per pound. Turfgrass seeds are different sizes. The number of seeds per pound varies widely among grass genera, species, and even varieties. Seed

size influences the seeding rate required to produce comparable stands; for example, bentgrass is seeded at a lower seeding rate than tall fescue. Table 1 compares the seed size of most common Pacific Northwest turfgrasses.

Germination and purity. Germination of a seed lot refers to the amount of pure seed that is viable, or the percentage of seed that will germinate under ideal laboratory conditions. Purity is the freedom from matter other than the seed itself. Germination and purity are expressed as a percentage of the total seed in a particular lot. The germination and purity percentage can vary and still meet state certification standards and federal seed laws.

Pure live seed (PLS) is the percentage of seed from a particular variety that will germinate and produce viable seedlings. PLS is calculated by multiplying the percent germination by the percent purity. For example, if 80% of Lot No. 1 germinates and is 85% pure, while 82% of Lot No. 2 germinates and is 98% pure, the PLS of Lot No. 1 is 68%, while the PLS of Lot No. 2 is 80%. The seeding rate of Lot No. 1 would need to be increased by more than 12% to obtain the same number of PLS as in Lot No. 2. Turfgrass seeding rates (Tables 2–11) are expressed on a PLS basis. Therefore, to determine how much seed to purchase for the best stand of grass, adjust the seeding rate according to the percent PLS of each seed lot.

Seed tag. In addition to germination, purity, and turfgrass species, the seed tag must show percentages of weeds, other crop seed, inert matter, and the date of the last germination test. If you buy Washington,

Table 1. Average number of seeds per pound for common Pacific Northwest turfgrasses.

Grass	Seeds
Streambank wheatgrass (<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>)	156,000
Tall fescue (<i>Festuca arundinacea</i> and <i>Lolium arundinaceum</i>)	178,000–234,000
Perennial ryegrass (<i>Lolium perenne</i>)	210,000–270,000
Crested wheatgrass (<i>Agropyron cristatum</i>)	311,000
Red fescue (creeping) (<i>Festuca rubra</i> var. <i>rubra</i>)	365,000
Chewings fescue (<i>Festuca rubra</i> var. <i>commutata</i>)	449,000
Sheep or Idaho fescue (<i>Festuca ovina</i> or <i>Festuca idahoensis</i>)	530,000
Hard fescue (<i>Festuca ovina</i> var. <i>duriuscula</i>)	592,000
Kentucky bluegrass (<i>Poa pratensis</i>)	1,022,000–1,758,000
Colonial bentgrass (<i>Agrostis tenuis</i>)	6,130,000
Creeping bentgrass (<i>Agrostis palustris</i> and <i>stolonifera</i>)	6,130,000
Velvet bentgrass (<i>Agrostis canina</i>)	8,247,000

Table 2. Seeding recommendations for new golf course putting greens.

Grass	Seeding rate (lb/1,000 ft ²)
Creeping bentgrass varieties*	1–2
Velvet bentgrass	1–2

*See the websites listed at the end of this bulletin for the most recent bentgrass variety rankings from WSU, OSU, UI, and NTEP.

Table 3. Seeding recommendations for new golf course teeing grounds.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Perennial ryegrass	5–8	R ^a	R
Kentucky bluegrass	3	NR ^b	R
Creeping bentgrass	2	R	R
Perennial ryegrass	4	NR	R
plus Kentucky bluegrass	1.5	NR	R
Perennial ryegrass	5	R	R
plus bentgrass	1	R	R

^aRecommended.
^bNot recommended unless as part of a mixture.

Table 4. Seeding recommendations for new golf course fairways.

Grass ^a	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Kentucky bluegrass (blended varieties)	3	NR ^b	R ^c
Kentucky bluegrass (blended varieties)	2	NR	R
plus creeping red, Chewings, or hard fescue	1	NR	R
Kentucky bluegrass	2	NR	R
plus perennial ryegrass	2	NR	R
Perennial ryegrass (blended varieties)	5–8	R	R
Perennial ryegrass	2	R	R
plus creeping red, Chewings, or hard fescue	2	R	R
plus colonial bentgrass ^d	0.5	R	R
Perennial ryegrass	1	R	R
plus creeping red, Chewings, or hard fescue	1	R	R
plus Kentucky bluegrass	1	R	R
plus colonial bentgrass ^d	0.5	R	R
Creeping red, hard, or Chewings fescue	3	R	R
plus colonial bentgrass	0.75	R	R
Perennial ryegrass	3	R	R
plus colonial bentgrass ^d	0.5	R	R

^aNever plant bentgrasses on fairways in eastern Washington, eastern Oregon, or Idaho unless mowing heights are maintained at less than 5/8 inch and fungicides are used to control snow mold.

^bNot recommended.

^cRecommended.

^dColonial bentgrass will most likely dominate when added to these mixtures. Take care to match the grass colors and growth habits to avoid a mottled and bouncy appearance.

Table 5. Seeding recommendations for new athletic fields.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Kentucky bluegrass (blended varieties)	3	NR ^a	R ^b
Kentucky bluegrass (blended varieties) plus perennial ryegrass	2	R	R
Perennial ryegrass (blended varieties)	5–8	R	NR

^aNot recommended for lower maintenance fields.
^bRecommended.

Table 6. Seeding recommendations for new home lawns, parks, and cemeteries^a.

Grass ^b	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Kentucky bluegrass (blended varieties)	3	NR ^c	R ^d
Kentucky bluegrass (blended varieties) plus creeping red, Chewings, or hard fescue	1.5	NR	R
Kentucky bluegrass (blended varieties) plus creeping red, Chewings, or hard fescue	1.5	NR	R
Kentucky bluegrass (blended varieties) plus creeping red, Chewings, or hard fescue plus perennial ryegrass	2	R	R
Perennial ryegrass	1	R	R
Perennial ryegrass plus creeping red, Chewings, or hard fescue	1–2	R	R
Creeping red, Chewings, or hard fescue plus colonial bentgrass	4	R	R
Turf-type ryegrass	2	R	R
Colonial bentgrass	3	R	NR
Creeping red, Chewings, or hard fescue	1	R	NR
Tall fescue	5–8	R	NR
	0.75–1.5	R	NR
	3	R	R
	8	limited use; must be overseeded to maintain stand density	R

^aIn cemeteries with large numbers of existing or planned trees, plant seed mixtures containing 35–50% creeping red, Chewings, or hard fescues by weight.
^bMaintain lawns seeded with fine fescue and bentgrass in western Washington and western Oregon at 1/2–3/4 inch mowing height for maximum beauty and thatch control. Seeding eastern Washington, eastern Oregon, or Idaho lawns to bentgrass is not recommended.
^cNot recommended.
^dRecommended.

Table 7. Overseeding recommendations for putting greens and teeing grounds.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Putting greens Creeping or velvet bentgrass	1–2	R ^a	R
Tees Kentucky bluegrass	3	NR ^b	R
Perennial ryegrass	6	R	R
Perennial ryegrass plus any bentgrass	6	R	R
Any bentgrass	1	R	R
	1–2	R	R

^aRecommended.
^bNot recommended.

Idaho, or Oregon certified seed, you can be confident that particular lot meets good seed standards. Some noncertified seed may be better than average quality certified seed, but you cannot always be certain of its genetic origin.

Blend. Seed blends contain two or more varieties of a single species.

Mixture. Seed mixtures contain two or more turfgrass species. An example of a simple mixture is one variety of Kentucky bluegrass combined with one variety of perennial ryegrass, while a complex mixture would be blends of several Kentucky bluegrass varieties and several perennial ryegrass varieties. In Tables 3–8, the recommended mixtures are identified with “plus” between species.

Overseeding Turfgrass Areas

Overseeding is the application of seed to depleted

turfgrass areas where optimum seedbed preparation or cultivation cannot be accomplished. Overseeding strengthens or reestablishes turfgrass stands in small bare areas, increases the density of established turf, or infuses new varieties or different types of grasses into established turfgrass stands. The overseeding rates in Tables 7–10 are standard recommendations; individual site characteristics such as soil type, time of year, and cultural practices may affect these numbers slightly.

Roadside and Slope Stabilization

Grasses or grass and legume mixtures are widely used to establish vegetation along roadsides and stabilize erodible slopes; see Table 11 for common types of grasses that work well for this purpose. Wheatgrasses have excellent seedling vigor and compete well against weeds east of the Cascades. If irrigation will not be provided, plant wheatgrasses in early spring or as a late fall dormant seeding.

Table 8. Overseeding recommendations for golf course fairways.

Grass	Seeding rate (percentage by weight) ^a	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Perennial ryegrass	50	NR ^b	R ^c
plus Kentucky bluegrass	50	NR	R
Perennial ryegrass	80	R	R
plus colonial bentgrass	20	R	R

^aOverseeding rates can vary from 75 to over 400 lb/acre. Contact your local Extension specialist for more information.
^bNot recommended.
^cRecommended.

Table 9. Overseeding recommendations for home lawns, parks, and cemeteries.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Perennial ryegrass	6	R ^a	R
Perennial ryegrass	4	R	R
plus creeping red, Chewings, or hard fescue	2	R	R
Creeping red, Chewings, or hard fescue	2	R	NR ^b
plus colonial bentgrass	0.5	R	NR
Kentucky bluegrass (blended varieties)	2	NR	R
Kentucky bluegrass (blended varieties)	1	NR	R
plus creeping red, Chewings, or hard fescue	2	NR	R
Perennial ryegrass	4	NR	R
plus Kentucky bluegrass	1.5	NR	R
Tall fescue	6–8	limited use	R

^aRecommended.
^bNot recommended.

Table 10. Overseeding recommendations for athletic fields.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Perennial ryegrass	6	R ^a	R
Perennial ryegrass	4	R	R
plus Kentucky bluegrass ^b	1.5	R	R
Perennial ryegrass	1	R	R
plus intermediate ryegrass ^c	3	R	R

^aRecommended.
^bKentucky bluegrass seedlings are extremely poor competitors during establishment. If turfgrasses cover as much as 50% of the ground, seed turf-type perennial ryegrasses alone since Kentucky bluegrasses will not compete favorably.
^cUse intermediate ryegrass very early or late during the seasons when soil temperatures are too cool to get quick cover by perennial ryegrass or Kentucky bluegrass. Intermediate ryegrass will act as a biennial in most cases.

Table 11. Seeding recommendations for roadside and slope stabilization^a.

Grass	Seeding rate (lb/1,000 ft ²)	Western Washington and Western Oregon	Idaho, Eastern Washington, and Eastern Oregon
Crested wheatgrass ^b	0.5–1.0	NR ^c	R ^d
Streambank wheatgrass ^b	1.0	NR	R
Hard fescue ^e	1.0	NR	R
Hard fescue	0.35	NR	R
plus crested wheatgrass ^e	0.5	NR	R
Sheep or Idaho fescue ^e	1.0	NR	R
Common or improved perennial ryegrass	1.5	R	R
plus creeping red or Chewings fescue	1.0	R	NR
Common or improved perennial ryegrass	1.5	R	NR
plus creeping red or Chewings fescue	1.0	R	NR
plus white Dutch clover	0.1	R	NR
Colonial bentgrass can be added to the two preceding entries for wet sites	0.25	R	NR

^aThese rates are based upon prepared seedbeds seeded with a billion drill or hydroseeding methods.
^bOn nonirrigated 8–15 inch rainfall areas, crested wheatgrass and streambank wheatgrass perform very well.
^cNot recommended.
^dRecommended.
^eOn nonirrigated 15–25 inch rainfall areas, sheep, hard, or Idaho fescue and crested wheatgrass perform well.

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Websites with the most recent bentgrass variety rankings

Washington State University: <http://turf.wsu.edu/>; <http://www.puyallup.wsu.edu/turf>

Oregon State University: <http://www.BeaverTurf.com>

University of Idaho: <http://www.extension.uidaho.edu/idahogardens/>

National Turfgrass Evaluation Program: <http://www.ntep.org>

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