Retail Lawn Seed Mixtures for Western Oregon and Western Washington

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A number of new lawn seed products have become available to retail consumers in recent years. Historically, grass seed alone was packaged for use in planting home lawns, but now seeds can be treated with various coatings and are often packaged with fertilizer, mulch, or both to promote germination and establishment. A variety of seed mixtures are also available to the consumer. This publication describes the benefits of choosing the right cultivar, species, blend, or mixture. It will also explore the advantages of seed coating and other preplant packaging options, such as fertilizer and mulch. Finally, this publication will highlight seed mixture and coating research conducted at Oregon State University.

Genus and Species

All turfgrasses are within the grass, or Poaceae, family. Turfgrass genera typically found in western Oregon and western Washington include *Lolium, Poa*, *Festuca,* and *Agrostis*, which are known as ryegrass, bluegrass, fescue, and bentgrass, respectively. Several species within these cultivars are also available. For instance, species within the genus *Festuca* include, but are not limited to, *arundinacea*, *rubra*, and *ovina*.

Blends and Mixtures

A **seed mixture** is a combination of two or more genera or species. For instance, a combination of perennial ryegrass and Kentucky bluegrass would be a seed mixture including two different genera. A combination of perennial ryegrass and annual ryegrass would be a mixture of two different species. A **seed blend** is a combination of different cultivars within the same genus and species. For instance, a combination of 'Integra' perennial ryegrass and 'Brightstar' perennial ryegrass would be a blend. Grass seed is often sold in mixtures or blends to provide genetic diversity or resistance to various environmental conditions and abiotic factors.

Figure 1. Fine fescue (left) has a fine leaf thickness, or texture, while perennial ryegrass (middle) has a medium leaf texture.Tall fescue (right) has a coarse leaf texture and therefore is not sold in mixtures.

Photo by Alec Kowalewski, © Oregon State University.

Common Lawn Seed Mixture Components

Common lawn seed mixture components include perennial ryegrass, Kentucky bluegrass, fine fescue, tall fescue, annual ryegrass, and intermediate ryegrass. Of these various components, three-way mixtures of perennial ryegrass, Kentucky bluegrass, and fine fescue are the most common. These three grasses have similar leaf thickness (texture), are visually appealing together, and provide different benefits (Figure 1).

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Perennial Ryegrass (*Lolium Perenne*, PRG)

Perennial ryegrass is a wear-tolerant bunchgrass that is a dominant component in lawn seed mixtures. It establishes quickly thanks to a seed-germination rate of 5 to 7 days under ideal conditions. Perennial ryegrass requires full sun conditions and moderate to high nitrogen fertility. It thins out under shady and low-fertility conditions. This turfgrass species is moderately drought tolerant and requires supplemental irrigation during the summer months to avoid dormancy. However, perennial ryegrass is inherently tolerant to the cool-season diseases that decimate species during the rainy winters associated with the Oregon and Washington coast. Newer perennial ryegrasses are dark green and do not blend well with naturalized grasses, such as bentgrass and roughstalk bluegrass, which ultimately invade and dominate most lawns. Perennial ryegrass does not produce much thatch, so cultivation is often not required.

Annual Ryegrass (*Lolium multiflorum*, ARG)

This annual is common in many retail mixtures because it is cheap, germinates rapidly (as little as 3 days), and quickly fills in newly seeded lawns. However, because this turfgrass is an annual, it dies out generally within a year of planting. Despite a rapid germination rate, its weak persistence makes annual ryegrass a poor choice for perennial lawns.

Intermediate Ryegrass (*Lolium intermediate*, IRG)

Intermediate ryegrass has characteristics of both annual and perennial ryegrasses, and has recently been used to replace annual ryegrass in less expensive seed mixtures. Intermediate ryegrass is light green, provides quick cover, and may survive up to 3 years. Similar to annual ryegrass, this plant's lack of long-term persistence makes it a poor choice for perennial lawns in western Oregon and western Washington.

Kentucky Bluegrass (*Poa pratensis*, KBG)

Kentucky bluegrass is the most common lawn grass east of the Cascades, but disease susceptibility makes it poorly suited to locations west of the Cascades. This cold-tolerant grass grows well in sunny areas and forms a dense turf when managed properly. Another advantage of this grass is its lateral growth habit, which stabilizes the soil and allows the turf to recover from traffic damage. However, this growth habit creates thatch, which can result in reduced rooting in the soil if core cultivation (aerification) is not used. Excess thatch results in more frequent irrigation requirements throughout the growing season and increased disease activity. Another disadvantage of Kentucky bluegrass is its slow germination rate, which can be 21 days or more.

Fine Fescues (*Festuca spp.*, FF)

Fine fescues (creeping red, chewings, and hard fescue) are fine textured and usually mixed with perennial ryegrass, Kentucky bluegrass, or both. The fine fescues tolerate shade better than the other cool-season grasses in typical lawn mixtures (perennial ryegrass and Kentucky bluegrass) and are adapted to sunny locations if well irrigated. Fine fescue as a group is considered more drought resistant than Kentucky bluegrass; however, chewings fescue quickly turns brown under drought conditions. Like Kentucky bluegrass, chewings fescue has a lateral growth habit. This lateral growth produces more organic matter, leading to drought stress and increased risk of disease. Fine fescues tolerate only light wear and are not suitable for high-traffic play areas or sports fields.

Tall Fescue (*Festuca arundinacea*, TF)

Tall fescue has become more popular for lawns because of its heat and drought resistance. Tall fescues are more tolerant of shade than perennial ryegrass and Kentucky bluegrass, but are slow to recover from high traffic. Tall fescue has an extensive root system, which allows the plant to access moisture from deeper in the soil profile, increasing drought tolerance between irrigation or rain events. This coarse-textured grass does not mix well with the fine-textured turfgrasses and, therefore, performs best in pure stands. Tall fescue is suitable for full sun to shady lawns, but, like Kentucky bluegrass, it is very susceptible to the diseases associated with a cool, wet winter. Tall fescue germination rates are much better than those for Kentucky bluegrass, which can mitigate weed invasion during establishment from seed.

Figure 2. Plots of grass from retail seed mixtures are grown at the Oregon State University Turfgrass Research Farm.

Photo by Stan Baker, © Oregon State University.

Figure 3. This photo shows retail mixtures 6 weeks after seeding. Mixes containing annual ryegrass are in the foreground. Mixes containing perennial ryegrass and fine fescues are at the top center of the photo.

Photo by Stan Baker, © Oregon State University.

Evaluating Establishment of Retail Grass Mixtures in the Field

A study was conducted to evaluate turfgrass establishment for seed mixtures and blends, seed coatings, and fertilizer- and/or mulch-packaged seed. The study was conducted at the Lewis-Brown Horticulture Farm in Corvallis, Oregon. One bag of every lawn grass seed product available at a local retail store was purchased and planted (Figure 2).

Uncoated and coated grass seeds were planted on June 9, 2011, while combination lawn patch products (grass seed combined with fertilizer and mulch) were planted on June 14, 2011. Three 3-foot x 3-foot plots were planted of each lawn grass seed product at label-recommended rates. Prior to planting, all plots received 5 lbs Nitrogen per 1,000 square feet and were irrigated June through September at the rates necessary to replace daily evapotranspiration.

Uncoated Lawn Grass Seeds

The chief advantages of uncoated lawn grass seeds are lower cost and a slightly quicker germination under optimum planting conditions. In general, mixtures containing KBG did not perform as well as mixtures without KBG due to slow germination and excessive disease, resulting in unacceptable weed intrusion. Mixtures containing ARG (Figure 3) and IRG germinated quickly but provided light green, wide-bladed turf. Although these grasses persisted throughout the winter, they generally died the following spring, creating bare spots with increased weed intrusion. This fast-growing, coarse-textured turf also required mowing more than twice as often as mixtures that did not contain annual ryegrass.

Table 1. Uncoated Lawn Grass Seed Products

Manufacturer	Brand	Product	Ingredients
JB Instant Lawn	JB	Sun & Shade	59% PRG, 39.66% FF
JB Instant Lawn	JB	Dense Shade	78.44% FF, 19.73% PRG
Pennington	Pennington	Bare Spot Repair	54% PRG, 29% ARG, 14% KBG
Pennington	Smart Seed	Sun & Shade	63.35% PRG, 24.1% FF, 9.55% KBG
Pennington	Smart Seed	Pacific Northwest	68% PRG, 29% FF
Pennington	Smart Seed	Tall Fescue / Kentucky Bluegrass	88.6% TF, 9.6% KBG
Pennington	Smart Seed	Perennial Ryegrass	97.5% PRG
Scotts	Turf Builder	Landscaper	29.42% FF, 24.58% ARG, 19.42% PRG, 14.6% IRG, 9.64% KBG
Scotts	Turf Builder	Quick Fix	88.87% ARG, 8.79% IRG

Table 2. Lawn Grass Seed Products with 50% Super-Absorbent Polymer Coating

Manufacturer	Brand	Product	Ingredients
Scotts	Turf Builder	Pacific Northwest	33.63% PRG, 14.11% FF
Scotts	Turf Builder	Dense Shade	14.11% FF, 9.48% IRG, 4.82% KBG
Scotts	Turf Builder	Perennial Ryegrass	47.74% PRG
Scotts	Turf Builder	High Traffic	38.11% PRG, 9.63% KBG
Scotts	Turf Builder	Kentucky Bluegrass	47.74% KBG
Scotts	Turf Builder	Sun & Shade	17.24% PRG, 15.34% KBG, 15.16%FF

The combination of PRG and FF without KBG found in JB Instant Lawn, JB Sun & Shade Mixture, and Pennington Smart Seed Pacific Northwest Mixture were the top performers. Uncoated seed lawn grass mixtures containing 58%–68% PRG combined with 32%–42% FF produced the most attractive stands during the course of this trial.

Lawn Grass Seed Products with 50% Super-Absorbent Polymer Coating

Under optimum watering conditions, uncoated grass seed germinated faster than polymer-coated seed. In theory, polymer coatings absorb water during irrigation events. The moisture is then released to the seed as the soil dries, providing more consistent germination under erratic water availability. However, in these studies, polymer-coated seed germination was slower and resulted in greater weed intrusion, particularly in mixtures containing KBG. Scotts Pacific Northwest Mixture rated highest under the conditions of the trial. Because of weed encroachment, all other coated seed mixtures, blends, and mono-stands failed to produce acceptable cover during the trial period.

Table 3. Combination Lawn Patch Products

Manufacturer	Brand	Product	Ingredients
Barenbrug	Certain Seed	Lawn Patch	81.1% Mulch, 3.9% Fertilizer, 14.67% TF
Pennington	1-Step Complete	Lawn Patch	77.5% Mulch, 8.5% Fertilizer, 8.97% PRG, 3.45% FF, 1.38% KBG
Scotts	PatchMaster	Lawn Patch	73.69 % Mulch, 15.8% Fertilizer, 4.1% PRG, 3.1% FF, 2.07% KBG
Scotts	EZ Seed	Lawn Patch	88.6% Mulch, 3.9% Fertilizer, 4.14% FF, 2.21% PRG, 2.05% KBG

Combination Lawn Patch Products

Lawn patch products combining seed, fertilizer, and mulch are intended to provide a one-application planting process. These products are designed for patching bare spots in existing lawns. Package-recommended planting rates are typically low in comparison to seed packaging that does not contain mulch and fertilizer. The top-performing combination lawn grass mixture was the Pennington 1-Step Complete Combination Lawn Patch Product, although disease onset in the KBG portion and subsequent weed encroachment due to the thinned turfgrass stand was observed. Only Pennington 1-Step Complete Lawn Patch provided acceptable cover in comparison to the other lawn-patch products.

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