

## ADAPTATION OF COOL SEASON SPECIES BY REGION

<b>Cool humid PNW</b> <ul style="list-style-type: none"> <li>Perennial ryegrass</li> <li>Kentucky bluegrass</li> <li>Fine fescue</li> <li>Tall Fescue</li> <li>Bentgrass</li> </ul>	<b>Cool Semi-arid</b> <ul style="list-style-type: none"> <li>Tall Fescue</li> <li>Kentucky bluegrass</li> <li>Perennial ryegrass</li> <li>Fine fescue</li> <li>Bentgrass</li> </ul>	<b>Cool humid northeast</b> <ul style="list-style-type: none"> <li>Kentucky bluegrass</li> <li>Perennial ryegrass</li> <li>Tall Fescue</li> <li>Fine fescue</li> <li>Creeping bentgrass</li> <li>Annual Ryegrass</li> </ul>
<b>Warm humid</b> <ul style="list-style-type: none"> <li>Tall Fescue</li> <li>Perennial ryegrass</li> <li>Creeping bentgrass</li> </ul>	<b>Warm arid &amp; Semi-arid</b> <ul style="list-style-type: none"> <li>Perennial ryegrass</li> <li>Tall Fescue</li> </ul>	

## GERMINATION STANDARDS

Seedling vigor, germination and endophyte levels are all affected by the conditions in which seed is stored. Germination may decline after the first year if good storage conditions are not maintained. To maintain the highest seed quality, do not store seed in high heat and humidity.

	Storage Life * Years	Preferred Minimum % Germination	Preferred Minimum % Purity	Days to Germinate
Tall Fescue	3+	85+	97+	14-21
Kentucky Bluegrass	3	75+	98+	21-30
Perennial Ryegrass	3	90+	95+	7-10
Fine Fescue	1.5	80+	97+	14-21
Creeping Bentgrass	4+	85+	98+	14-21

\* Storage life can be longer under ideal situations.

## HOW TO READ AN ANALYSIS TAG

Each lot of seed is uniquely numbered. This number appears on all documents so that it can be traced back to its origin.

**PURE SEED — PURITY**  
The % by weight of seed that is the named species.

**CROP**  
The % of seeds by weight that is other than the pure species labeled, but not considered weeds in your state. Crop seeds must be listed by name if over 5% of content.

**INERT**  
The % by weight of material that will not grow.

**WEED**  
The % of weeds in this lot. A list of problem weeds in your state is available upon request.

**NAME OF VARIETY.**  
**SPECIES NAME.**

**GERMINATION**  
The % of pure seed that will germinate in a controlled lab environment. In rush situations, a chemical test (TZ test) can be performed in 24 hours. The TZ test is over 95% accurate on turfgrass seed.

**ORIGIN**  
State in which seed was grown.

**TEST DATE**  
Actual month/year this lot was tested for germination.

**Identifies Net Weight of container.**

**ADDRESS**  
The address of the company providing seed.

**AMS #**  
Each seed company has an Agricultural Marketing Seed # (AMS). Lebanon Turf Product's # is 366.

**NOXIOUS WEEDS**  
Those weeds defined by your state to be a problem or prohibited. Poa annua (Annual Bluegrass), which is undesirable in turf, is considered a noxious weed in only a few states.

**AFFIRMED PERENNIAL RYEGRASS**  
LOT # OR/46238  
97.39% PURE SEED  
00.00% OTHER CROP SEED  
02.61% INERT MATTER  
00.00% WEED SEED  
AMS-366  
NOXIOUS WEEDS: NONE FOUND  
NET WEIGHT: 50 LBS. (22.68 KGS)  
Lebanon Seaboard Corp., 1600 East Cumberland Street, Lebanon, PA 17042

**Pure seed, other crop seed, inert matter and weed seed % should equal 100%. To determine PURE LIVE SEED, multiply the pure seed % by the germination %.**

## TURF GRASS CHARACTERISTICS

Species	Growth Habit	Establishment Rate	Mowing Height	Shade Tolerance	Drought Tolerance	Cold Tolerance	Traffic Tolerance
Perennial Ryegrass	bunch type	very fast	1.5-2.5"	good	good	good	excellent
Annual Ryegrass	bunch type	very fast	2.0"	fair to good	fair	good	very good
Tall Fescue	bunch type, Slight Rhizomes	medium	1.5-3.0"	very good	very good	good	very good
Kentucky Bluegrass	spread by Rhizomes	slow	1.5-2.5"	fair to good	good	excellent	good
Fine Fescues	bunch type or Spread by tillers	medium	1.0-2.5"	very good	good	very good	poor to fair
Bentgrass	spread by stolons, rhizomes	medium	0.125-1.0"	fair	fair to poor	very good	good

# LebanonTurf Proprietary Turfgrass Variety Guide

One of the most important factors in selecting turfgrass seed is to decide which species (or mix of species) best fits your climate, site use, and intended maintenance level. This is important whether you are deciding on the initial selection for new construction on athletic fields, home lawns, golf courses or commercial sites; or for interseeding or renovating your existing turf to add newer improved varieties to the turfgrass population.

Turfgrass breeders make improvements in varieties every year, so do some research and try to find the newest, most cutting edge varieties available. The cost of the seed is a very small portion of the total cost of any seeding job, so choose the best seed varieties available that fit your site requirements. You have to live with the turfgrass variety decision for years, so it makes sense to buy the best varieties available.

Your research is made a little easier by utilizing the National Turfgrass Evaluation Program (NTEP). This program establishes tests at University sites across the US and Canada and publishes unbiased rankings on the web site ntep.org. Whichever species you choose, always try to choose the best varieties available at the time with superior genetics that have improved disease and insect resistance, drought tolerance, and that will fit your long-term management plans.

## KENTUCKY BLUEGRASS

Kentucky Bluegrass is a widely adapted species that is used for many situations. It exhibits dark green color and medium fine texture. Kentucky bluegrass is able to spread and recover because it grows by underground primary lateral stems called rhizomes. These rhizomes grow out from the main plant and form a new plant, allowing it to form a dense cover. Kentucky bluegrass is a good choice for athletic fields, home lawns, and golf courses. For high quality turf, Kentucky bluegrass should receive medium to high maintenance.



- Elite compact America type
- High statistical ranking in "Schedule C" lower maintenance regime
- Very dark green color
- Quick emergence and establishment



- Elite compact America type
- Dark green genetic color
- Medium fine leaf texture
- Superior overall disease resistance
- Excellent seedling vigor & quick to establish



- Elite Shamrock type
- Ranked #1 at WA and MI NTEP sites
- Large seed, excellent establishment characteristics
- Aggressive growth habit
- Very good sod strength



- Heat and drought tolerant - Mid-Atlantic type
- Highly ranked in 2008 NTEP at all maintenance levels
- Tied for #1 under traffic stress
- Excellent winter color and spring greenup
- Excellent seedling vigor



- Highly ranked at NTEP B & C maintenance levels
- Ranked #1 at 2004-2006 Adelphia, NJ trial
- Very good shade tolerance
- Dark green genetic color
- Aggressive establishment

## PERENNIAL RYEGRASS

LebanonTurf is proud to introduce three new *Gray Leaf Spot Resistant perennial ryegrass varieties*. Gray Leaf Spot is a devastating disease caused by *Pyricularia grisea* that quickly attacks golf fairways, roughs, and other fine turf. These new varieties were developed for overall turf quality and resistance to Gray Leaf Spot. All three ranked very high in the 2006 NTEP trials with Exacta II tying for #1.



- Top rated for Gray Leaf Spot resistance in 2005 NTEP data
- Highly rated overall under "Schedule A (High maintenance/fairway)" in 2005 NTEP data.
- Fine leaf texture



- Ranked #1 of 120 for Gray Leaf Spot in 2005 NTEP data
- Ranked #1 of 120 overall under Schedule C (Home lawns) in 2005 NTEP data
- Tied for #1 of 120 overall for turfgrass quality under "Schedule A (High maintenance/fairway)" in 2005 NTEP data.



- Tied for #4 of 120 overall under "Schedule B (medium maintenance/athletic field) in 2005 NTEP data.
- Top rated for Gray Leaf Spot Resistance in 2005 NTEP data
- Excellent Velocity injury rating

Perennial ryegrass has a non-spreading, bunch type growth habit. It germinates and establishes quickly, has a dark green color, medium fine texture, and good mowing characteristics. Perennial ryegrass may be seeded alone or in mixtures with other species. Be sure when selecting perennial ryegrass varieties that endophyte enhancement is on your list of considerations. Endophytes aid against insects and disease and ensure longevity of your investment.



- Excellent quality under all maintenance regimes
- Fine leaf textures
- Superior mowing qualities
- High endophyte enhancement
- Top ranked for salt tolerance



- Ranked #7 of 134 under "Schedule B (medium maintenance/athletic field)"
- Ranked #6 of 134 overall under "Schedule A (high maintenance/fairway)"
- Excellent spring green up



- Ranked #25 of 134 in 2003 NTEP Schedule B
- Excellent dollar spot resistance
- Very good winter color, spring green up
- High endophyte enhancement



- Overall mean rank #19 of 134 in 2003 NTEP
- High endophyte enhancement
- Top ranked for traffic tolerance
- Top ranked for salt tolerance

## FINE FESCUES

Creeping red fescue is the most widely used of the three main fine leafed fescues. It has slow spreading rhizomes. Chewings fescue and Hard fescue have a bunch-type growth habit. All have a fine leaf texture. They are particularly well adapted to dry, shady conditions as well as low maintenance situations. The fine fescues are primarily used in mixes with other species like Kentucky bluegrass and perennial ryegrass.



- Ranked #1 for overall quality grown under shade in 2004-2007 NTEP trial
- Excellent drought tolerance
- Excellent spring green-up and density
- Dark green genetic color
- Very good mowing qualities



- Ranked #1 for dollar spot resistance in 2005 NTEP trial
- Ranked #1 for traffic stress at Madison WI in 2005 NTEP trial
- Excellent disease resistance
- Good cold tolerance
- Excellent wear and traffic tolerance



- Ranked #2 for spring green up in 2004-2007 NTEP trial
- Very fine leaf texture
- Excellent disease resistance
- Excellent spring and summer density
- Very good mowing qualities

## CREEPING AND VELVET BENTGRASS

The latest generation of Bentgrasses are here! With improved turf quality, disease resistance and versatility, these varieties are an excellent choice for new construction or an interseeding program for your golf course.



- Tied for #1 for overall quality grown under shade in 2005 NTEP greens trial
- #1 overall at 1/8 in. or lower mowing height in 2005 NTEP greens trial
- #2 for Dollar Spot in 2005 NTEP greens trial
- Tied for mowing quality in 2005 NTEP fairway trial
- Ranked #1 for summer density in 2005 NTEP fairway trial
- Excellent resistance to Brown Patch



- Improved overall disease resistance, very good brown patch resistance
- Excellent seedling vigor, fast establishment
- Excellent resistance to Poa annua invasion
- Improved mowing qualities
- Medium dark green color
- Upright, aggressive growth habit
- Excellent for fairways, greens and tees



- Tied for #1 for Velvet bentgrass varieties
- Tied for #1 Velvet for fine leaf texture
- Tied for #1 of velvets for summer density ratings
- Ranked #1 for overall winter color
- Ranked #1 Velvet for spring green up
- Top ranked for Brown Patch resistance
- Very good rating for fall color

## TALL FESCUES

Tall fescue is a bunch type grass that persists in the warmer areas of the cool season range of adaptation. It has a deep root system, which helps it be more heat and drought tolerant. Plant breeders have made great improvements in this species over the last decade. The newer varieties are as dark green and almost as fine textured as the improved Kentucky bluegrass varieties. A mowing height of 1.5 –3 inches is recommended.



- Tied for #2 of 160 for overall turf quality in 2005 NTEP test
- Dark green genetic color
- Excellent drought, traffic, and heat tolerance
- Excellent brown patch resistance



- Tied for #5 for overall turf quality at 16 locations in 2005 NTEP test
- Top ranked in 2003 NTEP trials under lower input maintenance regime.
- Dark green genetic color, excellent winter color



- Ranked with top varieties in 2005 NTEP trial
- Dark green genetic color
- Excellent brown patch resistance
- Excellent drought and heat tolerant



- Top ranked in 2005 NTEP trial under lower input.
- Ranked #1 of 129 varieties for overall turf quality in 1996 - 2001 NTEP trials
- Excellent brown patch resistance



- Ranked tied for #3 for overall turf quality in 2008 NTEP test
- Ranked #1 overall in southwest region
- Ranked #2 overall of 113 under traffic stress



- Exhibits Rhizomatous traits
- #1 overall of 113 for sod strength in 2007 and 2008 NTEP trials
- Excellent for brown patch resistance
- Very good traffic tolerance



- Ranked tied for #4 of 113 for overall turf quality in 2008 NTEP test
- Tied for #2 of 113 for drought tolerance
- Tied for #6 of 113 for brown patch resistance