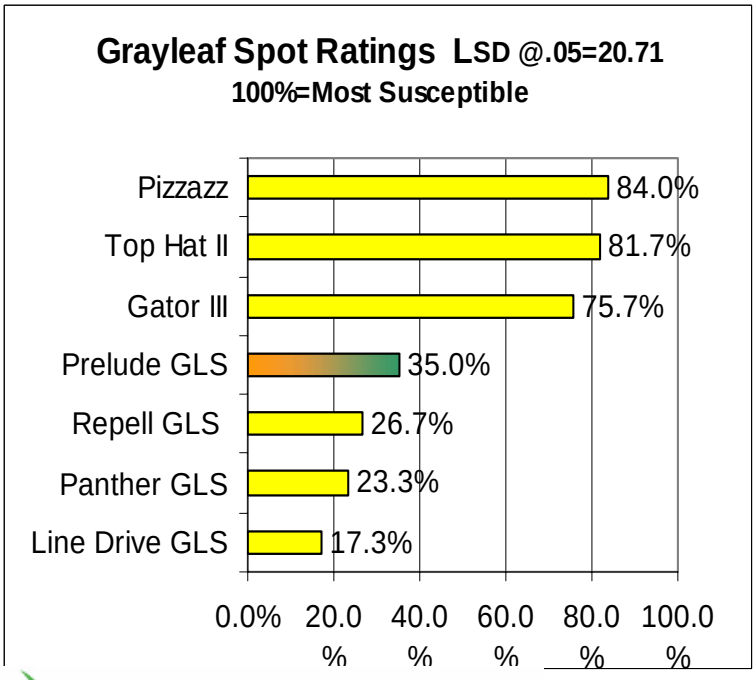
Prelude GLS

Prelude GLS is an elite, new generation, heat and humidity tolerant perennial ryegrass developed with improved gray leaf spot resistance. **Prelude GLS** is also an endophyte enhanced perennial ryegrass with >92% *Neotyphodium lolii* endophyte which provides resistance to a number of leaf and crown feeding pests and improved tolerance to abiotic and biotic stress.

Prelude GLS has been tested in Cooperative Turfgrass Breeders tests conducted at 5 locations over 2 years with excellent turf quality results.

- High endophyte content
- Heat and humidity resistant
- Improved Gray Leaf Spot resistance
- Rated among top performing varieties in NTEP tests
- Strong emergent plant vigor
- Improved resistance to dollar and leaf spot
- Provides resistance to a number of leaf and crown feeding pests
- Excellent in mixtures with Kentucky bluegrass, chewings, slender creeping and strong creeping red fescue, colonial bentgrass and turf type tall fescue.



Variety Comparison

2005 Mean Gray Leaf Spot Rating
CTBT Lexington KY

SEEDING RATE:
(new) 6-8 lbs./1000 sq. ft.
(established) 3-4 lbs./1000 sq. ft.

LA CROSSE FORAGE & TURF SEED CORP.

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Prelude GLS

DESCRIPTION

Prelude GLS is an elite, new generation, heat and humidity tolerant perennial ryegrass developed with improved gray leaf spot resistance. Gray leaf spot disease has been a limiting factor to the establishment and persistence of perennial ryegrass in the past decade in the Mid Atlantic, Mid South and Midwestern US. Prelude GLS is also an endophyte enhanced perennial ryegrass with >92% *Neotyphodium lolii* endophyte which provides resistance to a number of leaf and crown feeding pests and improved tolerance to abiotic (non-living) and biotic (living) stress. It is highly recommended for permanent turf application in the Mid-Atlantic and US transition zone where heat and humidity may limit the adaptation of perennial ryegrass turf.

APPLICATION

Developed for permanent poly species turfgrass blends and mixtures containing improved perennial ryegrass, Kentucky bluegrass, chewing, slender creeping and strong creeping red fescue, colonial bentgrass and turf type tall fescue. Prelude GLS is also used extensively in winter overseeding programs on greens, tees and fairways either alone or in species mixtures.

Turf Maintenance Characteristics

Growth Habit	Estab. Rate days	LHC Tol. 1/2"	Mowing Freq.	Traffic Tol.	Thatch Prod.	Comp. Mix	N. Reg.	Shade Tol.	Cold Tol.	Drought Tol.	ET rate mm/day	Endo-phyte	Salinity Tol. mmhos
Bunch	Fast 7-10	Very Good	2x Week	Very Good	None	Fair-Good	Med-High 6-8 lbs*	Fair-Good	Fair-Good	Fair	High 9-10	Yes >92%	11 Good

*LHC=low height of cut, ET=evapotranspiration, N=nitrogen *per 1,000 sq. ft; rates may increase or decrease based on location, soil type, irrigation practices, desired turf quality, humidity & other abiotic and biotic factors.*

PERFORMANCE

Prelude GLS has been tested in Cooperative Turfgrass Breeders tests conducted at 5 locations over 2 years with excellent turf quality ratings. Prelude GLS is highly resistant to gray leaf spot incited by *Pyricularia grisea.* In cooperative Turfgrass Breeders Tests conducted during 2004 and 2005 in Illinois, Kentucky, Maryland, and North Carolina, Prelude GLS exhibited resistance to gray leaf spot. For this and other test results go to www.ctbt-us.info.

SEEDING

Date: Spring and fall when soil temperatures are 60ºF or higher. Perennial ryegrass is the fastest establishing cool-season turfgrass species available to the lawn care professional and homeowner. Late autumn and winter turf quality ratings of newer varieties like Prelude GLS demonstrate that they can rapidly develop and maintain an attractive turf cover into late autumn early winter.

Rates: 6.0-8.0 lbs/1000 sq. ft. Seed count of Prelude GLS is approximately 282,000 seeds per pound dependent on year of harvest, location of production and seed production practices. Sow at 1/4—1/2 inch.

CULTURAL PRACTICES

Soil Preparation: Prepare a firm seed bed free of clods, sticks, and vegetative debris. Seed should be in contact with soil. Improved elite perennial ryegrass such as Prelude GLS prefers well-drained loamy soils but perform better in high bulk density soils than Kentucky bluegrass and fine fescue.

pH: Soil should be slightly acidic (5.5—6.5) for favorable growth. High pH soils (alkaline) often contribute to yellow chlorotic leaf color and are a direct result of iron chlorosis. Folair applications of iron, chelated iron or soil amelioration to decrease soil pH are used to reduce or eliminate iron chlorosis in perennial ryegrass turf.

NPK requirement: Of the cool-season grasses used for turf improved perennial ryegrass requires moderately high to high levels of available soil nitrogen to maintain proper basal tillering and growth. When soil nitrogen levels are low or absent, perennial ryegrass turf will gradually thin and be replaced by low nitrogen adapted grasses, and unsightly weed species. In northern region 5-7 lbs. N/year; transitional climates 7-9 lbs; N/year; overseeding 2-4 lbs. N/growing month.

Water Use: Prelude GLS and other improved perennial ryegrasses are recognized as high water users with ET rate of 9-10 mm per day. Lower mowing heights, regulated soil nitrogen levels and infrequent but deep soil profile irrigation practices will help reduce perennial ryegrass requirements. Prelude GLS will enter summer induced dormancy and premature senescence or die if not properly hydrated (irrigated) during persistent low moisture soil conditions.

Mowing height: Prelude GLS recommended mowing height for permanent turf in blends and mixtures is 1-1 1/2 inches. On permanent turf or winter overseeded golf course fairways recommended mowing height is 3/4—1/2". On overseeded greens and tightly mowed tees Prelude GLS can be mowed at 125,000' to 180,000'.

Growth regulators: New growth regulators such as Primo® (*Trinexapac-ethyl*) can be used to inhibit growth of warm season grass such as bermudagrass and zoysia during early season overseeding. This provides an excellent option for superintendents, landscapers and turfgrass managers that must overseed early when soil temperatures and day lengths are still beneficial to bermudagrass growth and tillering.

Weed Control: From *NCSU Pest Control Recommendations for Turfgrass Managers 2003*. In established turf for general broadleaf control: 2,2-4+*dicamba*, 2,4-D+MCPP,2,4-D+MCPP+*dicamba*, 2,4-D+2,4-DP and others.
Pre emergent herbicides to control annual grassy weeds in established turf: *benefin* (Balan), *bensulide* (Pre-Far), *dithiopyr+trifluralin*, *pendimethalin* (Pre-M), *prodiamine* (Barricade).
Annual bluegrass *Poa annua* can be controlled pre and post-emergent on golf course fairways, tees and roughs with *ethofumesate* (Progress)

**All reference to pesticides, herbicides and fungicides whether a generic or named product is for general informational purposes only. Text reference is not intended as an endorsement nor does omission imply criticism. Always read and follow labeled instructions.*

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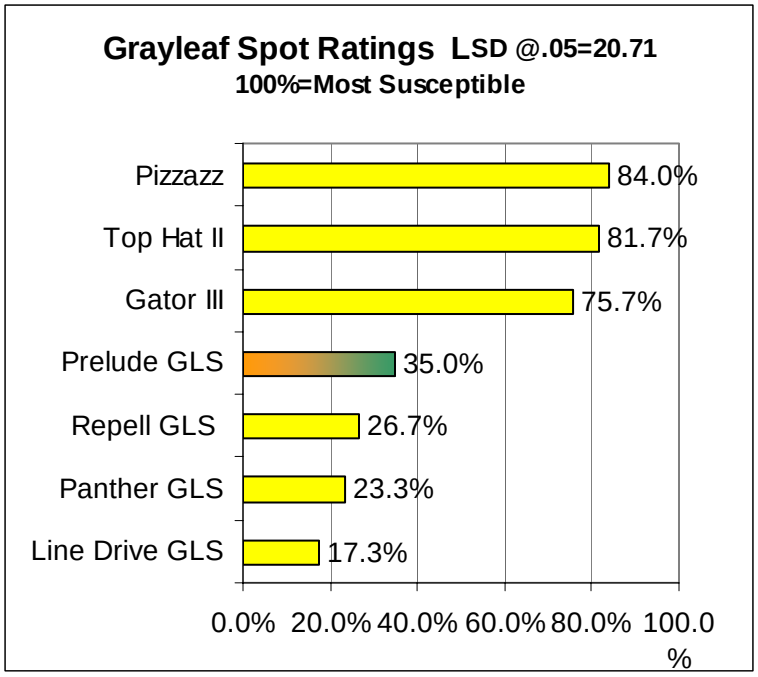

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