

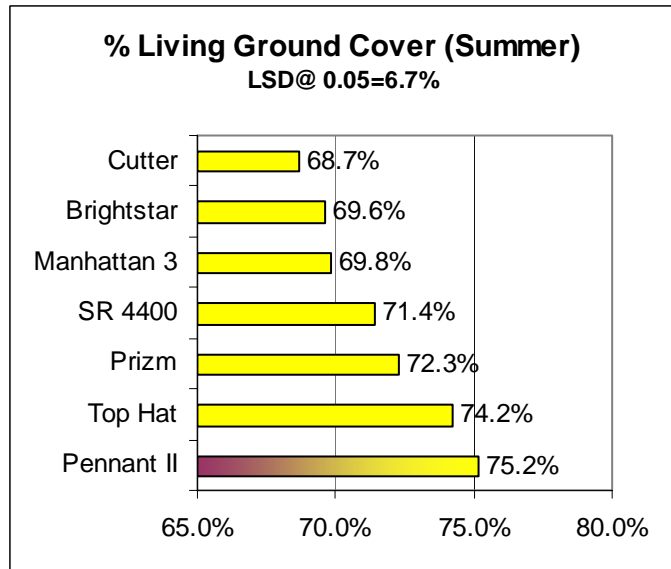
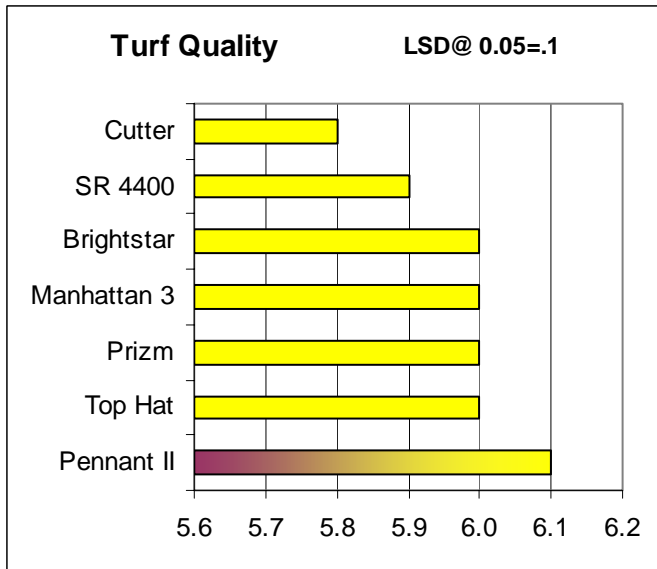


**Pennant II** tied for 2nd in turf quality in the Final Report 1994 NTEP Perennial Ryegrass Progress Report 99-11 across thirty (30) U.S. and Canadian locations. **Pennant II** has excellent performance in both cool season areas and for southern overseeding. **Pennant II** generates less clippings, saving maintenance cost throughout the season.

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

- An elite new generation heat and disease tolerant
- Decumbent (dwarf) and very dark green variety
- Forms a leafy, fine textured perennial ryegrass
- Exhibits photoperiod sensitive growth
- Provides excellent late season vegetative tillering
- An endophyte enhanced perennial ryegrass with >92% *Neotyphodium lolii* endophyte
- Provides resistance to a number of leaf and crown feeding pests
- Improved tolerance to abiotic (non-living) and biotic (living) stress

### Variety Comparison (NTEP)



**SEEDING RATE:**  
 (new) 5-8 lbs./1000 sq. ft.  
 (established) 3-4 lbs./1000 sq. ft.



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## DESCRIPTION

Pennant II is an elite new generation heat and disease tolerant, decumbent (dwarf), very dark green variety. Pennant II forms a leafy, fine textured perennial ryegrass that exhibits photoperiod sensitive growth which provide excellent late season vegetative tillering. Pennant II is 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.

## 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. Pennant II 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. <sup>1/2"</sup>	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 	Fair 	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

Pennant II tied for 2nd in turf quality in the Final Report 1994 NTEP Perennial Ryegrass Progress Report 99-11 across thirty (30) U.S. and Canadian locations. Pennant II has excellent performance in both cool season areas and for southern overseeding. Pennant II generates less clippings, saving maintenance cost throughout the season.

## SEEDING

**Date:** Spring and fall when soil temperatures are 60°F 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 Pennant II 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 Pennant II is approximately 275,000 seeds per pound dependent on year of harvest, location of production and seed production practices.

## 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 Pennant II 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. Foliar 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:** Pennant II 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. Pennant II will enter summer induced dormancy and premature senescence or die if not properly hydrated (irrigated) during persistent low moisture soil conditions.

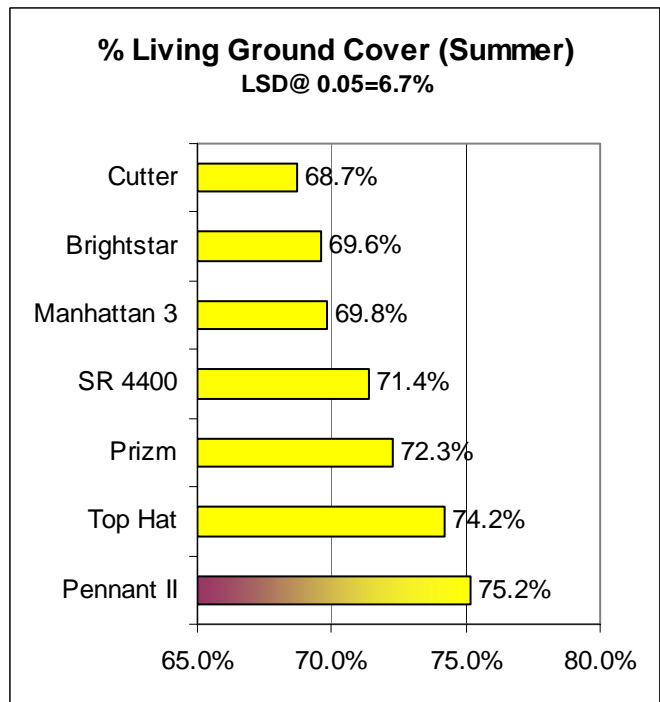
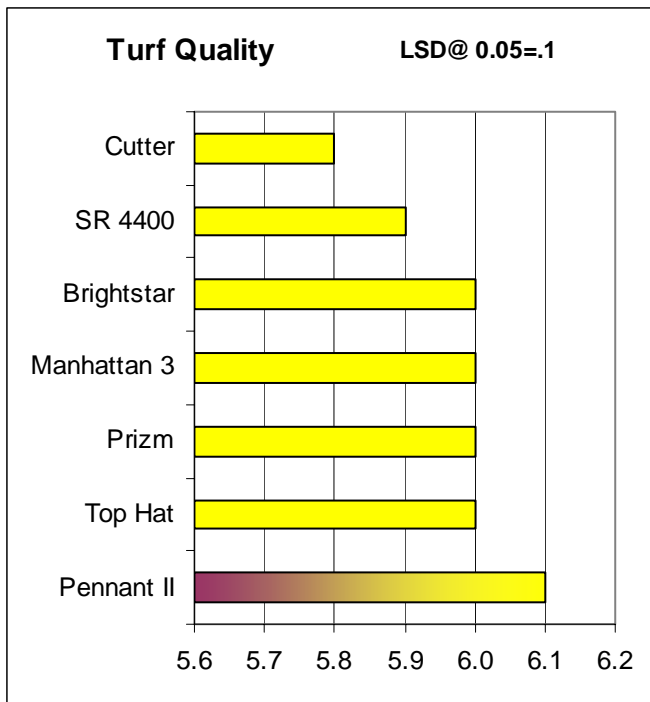
**Mowing height:** Pennant II's recommended mowing height for permanent turf in blends and mixtures is 1-1 1/2 inches. On permanent turf or winter overseeded golf course fairways recommended mowing height is 3/4—1/2". On overseeded greens and tightly mowed tees Pennant II can be mowed at 125,000' to 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 No. Carolina State University (NCSU) Pest Control Recommendations for Turfgrass Managers 2003. In established turf for general broadleaf control: 2,4-D+dicamba, 2,4-D+MCP+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* (Prograss).

*\*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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