Scorpion *2* is a new and improved, heat and disease resistant, double-dwarf tall fescue variety developed for superior turf quality across a wide area of adaptation. It is dark green in color, moderately fine textured with excellent wear tolerance. Scorpion *2* exhibits a unique combination of traits including short dwarf dense growth, improved turf quality and resistance to brown patch incited by *Rhizoctonia solani*. Scorpion *2* is an endophyte enhanced tall fescue with >62% *Neotyphodium coenophialum* endophyte which provides resistance to a number of leaf and crown feeding insects and nematodes. The presence of endophyte also contribute to improved biotic and abiotic stress tolerance, faster seedling establishment, enhanced fall recovery and reduced summer weed invasion.

Variety Comparison
NTEP
Final Report NTEP 06-12
2002-2005 National Tall Fescue Test
Canopy Height Ratings LSD@.05=2.5

Variety	Height
Kentucky 31 ET	12.7
Falcon II	9.0
Millenium	8.3
Finelawn Elite	6.3
Riverside	5.7
Falcon IV	5.0
Five Point	5.0
Gremlin	4.3
SCORPION *2*	4.3
Bonsai	4.0

- Exhibits high quality turf performance
- Improved resistance to brown patch disease
- Exhibits improved resistance to leaf spot, pythium blight, and winter net blotch
- Recommended for permanent turf in full sun or partial shade
- Intended for home lawns, commercial sites, parks and golf course roughs
- Developed for the discriminating superintendent, landscaper and sports turf manager
- Utilized from the dry temperate climates of southern California to the hot and humid regions of the southeastern US
- Double-Dwarf type
- Dark green color
- Excellent wear tolerance

SEEDING RATE:
(new) 6-8 lbs./1000 sq. ft.
(established) 2-3 lbs./1000 sq. ft.

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DESCRIPTION

Scorpion *2* is a new and improved, heat and disease resistant, double-dwarf tall fescue variety developed for superior turf quality across a wide area of adaptation. It is dark green in color, moderately fine textured with excellent wear tolerance. Scorpion *2* exhibits a unique combination of traits including short dwarf dense growth, improved turf quality and resistance to brown patch incited by *Rhizoctonia solani.* Scorpion *2* is an endophyte enhanced tall fescue with >62% *Neotyphodium coenophialum* endophyte which provides resistance to a number of leaf and crown feeding insects and nematodes. The presence of endophyte also contribute to improved biotic and abiotic stress tolerance, faster seedling establishment, enhanced fall recovery and reduced summer weed invasion.

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	Med. 14-21	Poor	2x Week	Very Good	Low-Med	Fair-Good	Med 6 lbs*	Very Good	Very Good	Excellent	Very High >10	Yes >62%	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.*

APPLICATION

Scorpion *2* is recommended for permanent turf in full sun or partial shade, on home lawns, commercial sites, parks and golf course roughs. It was developed for the discriminating superintendent, landscaper and sports turf manager in a range of environments. Scorpion *2* is best utilized in grass seed mixtures maintained at a high height of cut with Kentucky bluegrass, perennial ryegrass, hard fescue, sheep fescue or strong creeping red fescue.

PERFORMANCE

Scorpion *2* was entered in the 2001 NTEP Tall Fescue Test. Data from Progress Report No. 06-12 across 372 observations over 4 years across 31 US and Canadian test locations shows Scorpion *2* is a double dwarf turf type tall fescue with improved resistance to brown patch. It also exhibits improved resistance to leaf spot, pythium blight and winter net blotch.

SEEDING

Date: Spring and fall when soil temperatures are 60ºF or higher. Turf type tall fescue is generally slow to tiller once germinated so higher soil temperatures and increasing photoperiod in spring or warm soils with decreasing photoperiod in the fall provide an optimal environment for seedling establishment.

Rates: 6-8 lbs/1000 sq. ft. on new seedings. 2-3 lbs/1000 sq. ft. on established turf. Seed count of Scorpion *2* is 230,000 seeds per pound and is dependent on the year of harvest, location of production and seed production practices.

Depth: Sow at 1/4 to 1/2 inches. Slice seeding of existing turf may require lowered mowing height or growth regulator to reduce canopy height of existing turf. This management practice enhances establishment of newly emerging tall fescues seedlings.

Variety Comparison NTEP
Final Report NTEP 06-12
2002-2005 National Tall Fescue Test
Canopy Height
(LSD @ 0.05=2.5) 1-9; 9=Ideal Turf

Variety	Type	Cent. Tall
Kentucky 31 Et	Turf-Type	12.7
Falcon II	Turf-Type	9.0
Millenium	Semi-Dwarf	8.3
Finelawn Elite	Semi-Dwarf	6.3
Riverside	Semi-Dwarf	5.7
Falcon IV	Semi-Dwarf	5.0
Five Point	Semi-Dwarf	5.0
Gremlin	Dbl-Dwarf	4.3
Scorpion *2*	**Dbl-Dwarf**	**4.3**
Bonsai	Dbl-Dwarf	4.0
Matador	Dbl-Dwarf	3.7

CULTURAL PRACTICES

Soil Preparation: Prepare a firm seed bed free of clods, sticks, and vegetative debris. Seed should be in contact with soil. Tall fescues are best established in well drained soils, but will tolerate heavy soil conditions better than many other cool season grasses.

pH: Soil is best maintained at a neutral pH of 7.0. However, Scorpion 2 is adapted to a range of soil pH conditions and will perform relatively well in moderately acidic or alkaline soils.

NPK requirement: Scorpion *2* would be described as a medium to high user of fertilizer. In Northern regions 4-5 lbs. N/year; in transitional climates 5-7 lbs. N/year; southern regions 5-7 lbs. N/year with minimal utilization in summer months to discourage foliar turfgrass diseases such as brown patch. NPK ratios are generally recognized 5-1-3 with clippings retained on the turf.

Water Use: Tall fescue is recognized as a dehydration avoidant species (Beard, 1986) with improved drought tolerance. Tall fescue has an abundant deep and fibrous root mass which mines available subsoil moisture during stress periods. ET rate of >10 mm per day is highest among cool season turfgrass. Infrequent but heavy irrigation to stimulate deep subsoil root growth is recommended.

Thatch Management: Requires little thatch management. Only high N levels with minimal traffic pressure encourages thatch accumulation. Verticutting, lower mowing heights and dethatching are recommended for dormant sod or grass breaking dormancy in the spring. At any give dethatching, never remove more than 1/2 inch of thatch. If the thatch layer is greater than 1 inch, removal must be done over a period of years.

Mowing height: Scorpion *2* should be mowed at 1 1/2—3 inch.

Weed Control: From No. Carolina State University (NCSU) Pest Control Recommendations for Turfgrass Managers 2003. In established turf for post emergent broadleaf control 2,4-D and *dicamba* (Banvel). Spring pre-emergent control DCPA or *bensulide* (dacthal). Pre-emergent crabgrass and goosegrass control on established tall fescue with *pendimethalin* (Pre-M), *prodiamine* (Barricade), *oxadiazon+benefin*, or *oryzalin* (Surflan), *benefin* (Balan), siduron (Tupersan), *dithiopyr* (Dimension).

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