BREEDER
McCarthy Farms, Inc.

DESCRIPTION
Diamondback is a new and improved, early maturing, moderately fine textured perennial ryegrass developed exclusively for winter overseeding where fast establishment and early transition is required. It has extremely good early season establishment for rapid coverage when needed the most by progressive superintendents and lawn care professionals. We have engineered other desirable traits such as faster transition to encourage bermudagrass shoot, rhizome and stolon regrowth in the summer. Diamondback exhibits a moderately dark green color and contains less than 20% Neotyphodium lolii. Plant growth of perennial ryegrass is dominated by aggressive basal tillering in contrast to vegetative stolons (above ground) and rhizomes (below ground).

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. Diamondback is also used extensively in winter overseeding programs on greens, tees and fairways either alone or in species mixtures.

PERFORMANCE
Diamondback is ideal for winter overseeding of greens, tees, fairways and roughs where transition can be a limiting factor to bermudagrass recovery in the spring. Diamondback responds very favorably to management and cultural practices that enhance transition from cool-season to warm-season such as verticutting, light renovation, and tight mowing. Diamondback is also highly recommended for permanent poly-species turfgrass mixtures and blends containing improved perennial ryegrass.

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 Diamondback, all demonstrate that they can rapidly develop and maintain an attractive turf cover into late autumn early winter.

Rates: 6.0-8.0 lbs./1,000 ft². Seed count of Diamondback is approximately 258,000 seeds per pound and dependent on year of harvest, location of production and seed production practices.

Depth: Sow at ¼ to ½ inches.

CULTURAL PRACTICES
Soil preparation: Prepare firm seedbed free of clods, sticks and vegetative debris. Seed should be in contact with soil. Improved elite perennial ryegrass such as Diamondback prefers well-drained loamy soils but performs better in high bulk density soils than Kentucky bluegrass and fine fescue.

TURF CHARACTERISTICS

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<tr>
<td>Bunch</td>
<td>Fast 7-10</td>
<td>Very good</td>
<td>2x week</td>
<td>Very Good</td>
<td>None</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>High 9-10</td>
<td>Yes &gt;20%</td>
<td>11 good</td>
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| LHC=low height of cut, ET=evapotranspiration, N=nitrogen “per 1,000 ft²; rates may increase or decrease based on location, soil type, irrigation practices, desired turf quality, humidity & other abiotic and biotic factors.”
**pH:** 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 regions 5-7 lbs. N/year; transitional climates 7-9 lbs. N/year; overseeding 2-4 lbs. N/growing month.

**Water use:** Diamondback 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 water requirements. Diamondback will enter summer induced dormancy and premature senescence or die if not properly hydrated (irrigated) during persistent low moisture soil conditions.

**Mowing height:** Diamondback recommended mowing height for permanent turf in blends and mixtures is 1.0-1.5 inch. On permanent turf or winter overseeded golf course fairways recommended mowing height is ¾-½ inch. On overseeded greens and tightly mowed tees Diamondback can be mowed at 125,000ths of an inch to 180,000ths of an inch.

**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 2005. In established turf for general broadleaf control: 2, 4-D+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 (Prograss).