

The *Poa trivialis* challenge



by Craig W.
Edminster

Few in the grass seed industry, or among end-users for that matter, foresaw the exceptional and largely unfilled demand for *Poa trivialis* (rough bluegrass) in the 1991 overseed season.

The species has few of the bells and whistles which seed industry and turf research scientists said would be necessary for success in the early '90s.

Absent, for instance, are a definitive dehydration avoidance mechanism, *Acremonium* and *Epichloe* endophytes for increased insect resistance, and a dark green color.

Yet *Poa trivialis*, a cool-season perennial turfgrass, has quietly taken over a sizeable portion of the market in regions where overseeding is a yearly occurrence.

It is no longer merely a specialized species for use on golf courses and moist, shady lawns. There is good reason to believe that, if production came closer to matching demand, it would seriously challenge the improved perennial ryegrasses as the grass of choice for winter overseeding.

Characteristics—*Poa trivialis* is a sod-forming perennial, adapted to cool, wet, shady areas.

It exhibits a moderately fine texture, is light green to green in color and characteristically has an extensive fibrous yet shallow root system.

The most significant market for *Poa trivialis* is as a specialty turfgrass in winter overseed blends and mixtures in the South.

Poa trivialis is intolerant of drought or moisture-stressed soils and will either enter temporary summer stress-induced dormancy or simply die.

Advantages—Here are some of the advantages offered by *Poa trivialis* in an overseeding program:

- **Transition:** *Poa trivialis* is considered to be an "easy transition" species. It can easily be eliminated by fertility/water management, cultural practices or naturally by summer- and warm-season-induced stress.

- **Reduced seeding cost:** *Poa trivialis* seed counts are in the neighborhood of 1.9 to 2.2 million seeds per pound, making for very cost-effective seeding rates. *Poa trivialis* used exclusively or in poly-species mixtures can save an estimated minimum of 20 percent on seed cost.

- **Maximized yearly rounds of play:** *Poa trivialis* can be sown and mowed extremely tight during and after germination. It is not uncommon to dethatch an existing permanent bermudagrass green, sow *Poa trivialis* and allow play the following day.

- **Low soil temperature tolerance:** *Poa trivialis* has shown it can germinate in soil

temperatures ranging from 40° to 50° F rather effectively. Straight *Poa trivialis* as well as ryegrass blends containing it require considerably less hardening off and are, therefore, buffered from cold damage.

- **Competitiveness with annual bluegrass:** Winter overseeding with *Poa trivialis* can effectively reduce annual bluegrass (*Poa annua*) contamination by effectively competing for soil nutrients and sunlight. Similar growth habits, tolerance to low mowing, and preference to cool, wet soils of the two species make for excellent natural competition. As a result, populations of annual bluegrass may decline significantly over time.

- **Impressive stimpmeter readings:** Stimpmeter speeds of *Poa trivialis* overseeded greens are significantly faster than greens sown to straight perennial ryegrass. *Poa trivialis* can be managed to accentuate or lessen relative ball speed.

- **Non-competitive soil stabilization:** Golf superintendents, designers and contractors are often faced with land stabilization problems prior to finish grading and grass planting in temperate warm-season regions. When warm-season grass sprigging and seeding must be postponed until spring (when soil temperatures are optimal), *Poa trivialis* can be used as a non-competitive, reduced-maintenance winter overseed species.

- **Avoidance of iron chlorosis:** Under high alkaline conditions in Southwestern soils (pH greater than 7.5), *Poa trivialis* appears to have a tolerance to low soil iron levels, and will not exhibit yellowing or chlorosis unless under extremely high pH.

- **Soil nitrogen use:** *Poa trivialis* appears to be an excellent user of soil nitrogen when soil temperatures are very

USING POA TRIVIALIS

| Use | Mixture | | | | | Seeding rate (lbs./100 sq. ft.) |
|---|---------------|--------------------|-----------------|--------------------|--------------------|---------------------------------|
| | Poa trivialis | Perennial ryegrass | Chewings fescue | Kentucky bluegrass | Creeping bentgrass | |
| For shady lawns in cool, moist temperate areas | 20% | 20% | 30% | 30% | | 4 |
| For intensely shady lawns in cool, moist, temperate areas | 100% | | | | | 2 |
| Options for overseeding dormant warm-season turf on golf course greens and tees | 100% | | | | | 10-13 |
| | 15% | 85% | | | | 25 |
| | 15% | 60% | 25% | | | 25 |
| | 60% | | | | 40% | 6-10 |

Source: the author

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cool. It continues to exhibit its inherent light green to green color under very cold soil conditions.

Uses—*Poa trivialis* is recommended for permanent lawns in moderate or intense shade, and for winter overseed blends and mixtures. It can also be used as a non-competitive, reduced-maintenance, easy-transition winter groundcover for soil stabilization in the South and Southwest.

Delayed warm-season grass establishment on rough and finish-graded golf courses and exposed irrigated roadsides would be excellent sites for *Poa trivialis*. Seeding rate of 80 to 120 pounds per acre.

Management—*Poa trivialis* requires an extensive management program:

- **Irrigation:** Supplemental irrigation is needed for dense and aggressive tillering. Extended periods of moisture stress will result in an unattractive purplish-brown leaf discoloration and, ultimately, death. Its roots respond favorably to light, frequent irrigations.

- **Fertilization:** Most desirable: split applications of a balanced fertilizer in moderate amounts with N-P-K ratios of 5-1-2. Applications should be made at establishment and during active fall and spring growth. Heavily shaded areas must be managed with greater nitrogen levels and higher cutting heights.

- **Mowing height:** *Poa trivialis* may be mowed at very low (9/64 to 3/16) heights when planted at very heavy rates on golf course greens and tees. It, however, prefers mowing heights in the range of 1/2 to 2 inches. Mowing higher than 2 inches results in reduced quality.

- **Weed control:** Phenoxy-based lawn chemicals can be used to control broadleaf weeds with excellent results. *Poa trivialis* also appears to be very compatible with annual bluegrass in heavily-contaminated and compacted soils.

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