TURF-TYPE TALL FESCUES

Richard Hurley, Vice President
Lofts Seed, Inc., Bound Brook, NJ

Today more choices than ever are available for non-irrigated turf areas. Unfortunately, no one grass, mixture or blend is a panacea. However, there is little doubt an excellent choice for many areas in the United States is the new turf-type tall fescues. This grass has been shown to persist during long hot and dry summers compared to other cool season grasses.

Tall fescue is one of the most important grass species in the United States. Tall fescue was first described in 1771 by Schreber, a German botanist, and it was introduced from Europe to the United States prior to 1850 by early settlers. Since 1940, it has been used widely for lawns, roadsides, pastures, airfields, athletic fields, waterways, utility rights-of-way, and for soil conservation purposes. This broad useage has been due in part to its adaptability to a wide range of soil types and climatic conditions. However, the extensive and rapid acceptance of tall fescue since 1950 has been due to its valuable qualities as a pasture grass.

Until recently, tall fescue has not been widely considered, except in a few areas, as a desirable grass species for turf. It was considered a "weed" in fine leaf lines. Prior to 1979, only the pasture tall fescue varieties like Kentucky-31 and Alta were considered for turf situations. These varieties made an acceptable lawn where Kentucky bluegrass and other fine leafed turfgrasses grew poorly. They still are in demand today due to their low seed cost. Tall fescue is better adapted than other cool season grasses to heat and drought, diseases, insects, poor drainage, in shade. Unfortunately, the leaf width of these pasture-type tall fescues is too coarse. They usually become clumpy after several years, especially if neglected.

The era of the "turf-type" tall fescues was initiated with the release of Rebel in 1979. Rebel is a landmark variety as it has displayed all of the advantages of Kentucky-31 tall fescue while producing a turf which is finer leafed (up to 33%), and denser (up to 188% more tillers), compared to Kentucky-31 tall fescue. For the first time, a tall fescue could produce a turf which was heat and drought tolerant, attractive, and persistant without the clump-type growth habit, characteristic of Kentucky-31 and other pasture-type varieties.

Dr. C. R. Funk, turfgrass breeder at Rutgers University in New Jersey, is responsible for the development of the turf-type tall fescues. Dr. Funk's tall fescue breeding program started in the early 1960's with a collection of plants selected from old turf areas in New Jersey and surrounding eastern states. These plants were the source for most of the germplasm constituting Rebel. Additionally, some parental germplasm was obtained from a number of accessions received from the Plant Germplasm Resource Laboratory of the U.S.D.A.. and from tri-species hybrids of tall fescue, meadow fescue, and perennial ryegrass obtained from the U.S. Regional Pasture Research Laboratory, University Park, Pennsylvania. Clones of the original germplasm were initially evaluated in turfs subjected to frequent close mowing (3/4 inch). The turf-type tall fescue breeding program at Rutgers University was

directed towards the development of tall fescue varieties displaying finer leaf texture, denser turf, darker green color and improved resistance to insects and disease with good heat and drought tolerance.

Recent university research indicates mixing a shade-tolerant Kentucky bluegrass, such as Glade or Ram I, with a turf-type tall fescue will improve turf performance in shaded areas. The addition of Kentucky bluegrass also seems to give an even finer leaf texture to the turf. A shade-tolerant Kentucky bluegrass may be used in a mixture with tall fescue but should be limited to no more than 10% by weight of the mixture.

The turf-type tall fescues are more shade-tolerant than Kentucky-31. They also take on an even finer leaf texture in shade. However, this difference in shade-tolerance between Kentucky-31 and the turf-type tall fescues shows up better at moderate to high maintenance levels.

Heat and drought tolerance are the major advantages of the turf-type tall fescues over other cool season grasses. Tall fescue will retain green color longer into a drought and green-up faster with the return of moisture than Kentucky bluegrass or perennial ryegrass. The narrow leaf blade and more erect growth of the new tall fescues are improved features although still not equal to Kentucky bluegrass. Tall fescue, with its short rhizomes, recovers poorly from thinning. The deep penetrating root system of tall fescue is ideally suited to adverse sandy conditions. Extensive root development helps prevent soil erosion. The turf-type tall fescues will stay greener longer as the result of their deeper root system. If not mowed, the turf-type tall fescues will grow to approximately eighteen to twenty-four inches. They will persist and stay green with irrigation under this low maintenance.

Compared to perennial ryegrass, tall fescue germinates and establishes more slowly. It is intolerant of a close height of cut, and has less plant density. However, some universities are successfully maintaining turf-type tall fescue test plots as low as 3/4 inch with irrigation and fertilization. Plant breeders predict new tall fescue varieties may someday be suited for more intensely played areas on the golf course.

More patience is required after seeding the new turf-type tall fescues. Tall fescues will not germinate from seed as quickly as perennial ryegrass, but is 7-10 days faster than Kentucky bluegrass. Also, tall fescue is slower to mature compared to perennial ryegrass. For this reason, new stands can be seriously damaged by prematurely allowing traffic on newly seeded areas. A new planting should not receive traffic the first winter, especially if the ground is wet.

Presently, there is limited advantage to blend the turf-type tall fescues. This is more desirable for some other grasses, especially the Kentucky bluegrasses. Many varieties of Kentucky bluegrass have specific strengths and weaknesses to certain diseases making blending of compatible varieties a high priority. Most of the new turf-type tall fescue varieties have the same desirable characteristics, that is, relatively fine-leafed, excellent heat and drought tolerance, and the same weaknesses, such as, susceptibility to Brown Patch and Pythium. This factor minimizes the importance of blending varieties of tall fescue. One precaution is to avoid blending any of the pasture-type tall fescue varieties such as Kentucky-31,

with the turf-type tall fescues.

A common practice with the turf-type tall fescues is to mix the seed with 10% Kentucky bluegrass. This is most important to sod producers, since the rhizomes of Kentucky bluegrass add strength when cutting the turf for sale and improves recuperative potential. One important factor in choosing varieties for this seed mixture is to select a Kentucky bluegrass variety which is only moderately aggressive. The varieties A-34, Sydsport, Touchdown, Midnight and Mystic are examples of Kentucky bluegrass varieties which will out compete tall fescues creating a bluegrass mono-culture 3-4 years after seeding.

The following Kentucky bluegrass varieties are not overly aggressive and are desirable for use in tall fescue mixtures; Baron, Merit, Victa, Ram I, Nassau, Glade and the common types Kenblue, Newport, Argyle, Delta and South Dakota Certified.

The turf-type tall fescues may be seeded at lower rates (5-6 pounds per 1,000 sq ft. is adequate) than recommended for Kentucky-31. For a more rapid establishment higher seeding rates may be used with fall seedings. This will produce a turf with good density and fine leaf texture. For very low maintenance areas, seeding rates of 3-5 pounds per 1,000 sq ft. will give good results.

Fortunately, it appears the turf-type tall fescues minimize annual reseeding, unless unexpected damage occurs, under proper agronomic management. The turf-type tall fescues improve with age due to more tillers and leaves. Overseeding is easily accomplished since tall fescue essentially produces little thatch.

In addition to establishment by seeding, turf-type tall fescue sod is becoming increasingly more available. Sod growers which produce both tall fescue and Kentucky bluegrass sod have shown that turf-type tall fescue sod can be as attractive as bluegrass. Use of tall fescue sod provides the golf course superintendent an additional alternative for grassing clubhouse or half-way house lawn sites, and tee, green and bunker banks or steep pond or stream embankments which are subject to erosion.

One major difference between the turf-type tall fescues and Kentucky bluegrass/perennial ryegrass turf is the fertility requirement. Tall fescue requires only half the nitrogen fertilizer. It has a similar nitrogen requirement as the fine-leaf fescues. Usually 1 1/2 to 2 pounds nitrogen per 1,000 sq ft annually is adequate to maintain a stand. If fertilizer is withheld, density and fine-leaf texture will be lost. However, tall fescue does respond to higher fertilization levels with a darker green color and faster growth.

Another major advantage of the turf-type tall fescues is their excellent resistance and tolerance to insects, especially grubs. Sod webworms are not a problem with the tall fescues either. Many perennial ryegrass varieties are badly affected by this insect pest.

The major disease problems with the turf-type tall fescues are Brown Patch and Pythium. They occur on Kentucky-31, but are rarely considered a serious problem on low maintenance lawns. Fortunately, the diseases are largely

cosmetic in most areas and regrowth of new leaves eventually occurs from the crown.

Another tall fescue disease is Leaf Spot (Net blotch). The turf-type tall fescue varieties generally have improved resistance compared to the pasture-types. This leaf infection causes the turf to look off-color with a tan appearance due to this characteristic color of the Leaf Spot leasions on individual leaves. Further improvement looks promising with the release of new varieties displaying improved Leaf Spot resistance.

Over the past thirty years, we have witnessed many trends and improvements in cool season turfgrasses. In the 1950's Merion Kentucky bluegrass was popularized. In the 60's and 70's many improved Kentucky bluegrasses became commercially available. The 1970's was the decade for the improvement, commercial release and acceptance of the turf-type perennial ryegrasses. The 1980's seem to be the decade in which varieties of turf-type tall fescues will be popularized.