

## Traditional Fine-Leaf Fescue Putting Greens

James B Beard

**F**ine-leaf fescues (*Festuca rubra*) were the dominant grass species grown on putting greens of early links golf courses prior to 1850. **Its erect shoot growth, narrow leaves, reasonable shoot density under close defoliation, preference for the low nitrogen levels of sandy soils, and low susceptibility to Microdochium patch (*Microdochium nivalis*) were key characteristics that facilitated the adaptation of fine-leaf fescues to the sandy soil, seaside linksland of Scotland** and eventually to other parts of the British Isles. These northern seashore sites of the United Kingdom were characterized by a cool-maritime climate with few temperature extremes, frequent rainfall, sandy soils, and very few disease or insect problems.

During the evolutionary period for golf, rabbits (*Oryctolagus cuniculus*) were the primary defoliating agent on putting greens, followed subsequently by the hand scythe. The greens received no supplemental irrigation or fertilization and were subjected to minimal traffic stress from golf play. Sand topdressing was probably one of the earliest cultural practices, which provided surface smoothing, enhanced thatch decomposition, provided some earthworm suppression, and accentuated low nitrogen nutritional levels. Subsequently, composting of seaweed and sand for topdressing evolved.

A need exists to preserve the traditional turf character on the putting greens of the oldest linksland golf courses as part of golf's historical heritage. Also, there is interest in duplicating these early turfgrass conditions in other parts of the world. **Annual bluegrass (*Poa annua*) invasion and eventual dominance is the greatest threat to sustaining a fine-leaf fescue turf on putting greens. It must be recognized that sustaining successful fine-leaf fescue dominant putting greens can only be achieved under certain specific climatic, soil, and biotic conditions, including:**

- A cool-temperate climate, where soil temperatures do not rise above 76°F (24°C).
- A humid, moist climate characterized by periodic short-duration plant water stresses, which impair annual bluegrass (*Poa annua*) growth.

- Sandy soils with reasonably good internal drainage of excess water.
- Soil pH greater than 5.0.
- Areas where Helminthosporium diseases do not occur, including Bipolaris leaf spot (*Bipolaris sorokiniana*) and net blotch (*Drechslera dictyoides*), as the fine-leaf fescues are highly susceptible to these diseases.
- Low traffic stress on the greens and/or very large putting greens that spread out the traffic via regular hole changing.
- Minimal play or closure of the golf course during cold winter periods when fine-leaf fescue has a slow shoot growth rate, which can result in turf thinning from wear stress and subsequently annual bluegrass (*Poa annua*) invasion.
- A golfer attitude that accepts periodic brown areas on the green during planned water stress to control the invasion of other grass species.

There also are certain cultural practices required to sustain fine-leaf fescue turfs on putting greens, including:

- Mowing at a cutting height of 5 mm or higher, with a frequency of 6 days per week.
- Infrequent nitrogen fertilization at from 1 to 3 lb per 1,000 square feet (0.5–1.5 kg per 100 m<sup>2</sup>) per year.
- Potassium applied as needed based on an annual chemical soil test.
- Regular topdressing at 4 to 6 times per year.
- Minimal irrigation only as needed to prevent death and loss of the fine-leaf fescue crown.
- Turf cultivation as needed to correct a developing soil compaction problem.
- Minimal to no use of pesticides, and only as needed to prevent critical loss of turf.

Under optimal cool-temperature, moisture, soil, and mowing conditions, plus a balanced, living soil ecosystem and low traffic stress and/or a large putting green size, acceptable quality mature turfs of fine-leaf fescue have been sustained over multiple years on putting greens with minimal nitrogen fertilization, irrigation, or pesticide use. 