Turfgrass species

Turfgrasses have two unique characteristics – they can tolerate regular mowing and traffic. Of all the grass species found world wide, only about 10 are widely used on golf courses in the United States. Turfgrasses can be divided into two categories: cool season grasses and warm season grasses.

Cool season grasses provide the best turf quality and perform their best in spring and fall when air temperatures are between 60-70 degrees F. During the summer when air temperatures are consistently in the 80 degree F. range or higher, the quality and performance of cool season grasses may decline. This is because the shoot and root growth of cool season grasses drops dramatically. This makes the plants more susceptible to heat stress and damage from diseases and insects. In the summer months during periods of hot weather, cool season grasses must be managed carefully by the golf course superintendent. Cool season grasses have good cold tolerance with the exception of annual bluegrass that has poor cold tolerance. Commonly used cool season grasses on golf courses are given in Table 1.

One cool season grass deserves special attention and that grass is annual bluegrass (often referred to by its scientific name *Poa annua*). Some people consider annual bluegrass a desired turf and manage to favor its growth and performance. Many golf courses across the U.S. have annual bluegrass playing surfaces. Some of these golf courses are considered among the best in the country.

Other people consider annual bluegrass to be a weed and devote much time and energy to controlling it. Annual bluegrass is a very difficult plant to control and it is unlikely a superintendent would ever be able to control 100 percent of the annual bluegrass on the golf course. Maintaining the annual bluegrass population at an acceptable level is a reasonable goal.

Warm season grasses provide the best turf quality and perform their best in summer when air temperatures are between 80-95 degrees F. In fall, when daily high temperatures drop below 75 degrees F. the growth of warm season grasses stops. When daily low temperatures drop in the 50 degrees F., warm season grasses turn brown or go dormant. In the late fall, winter and early spring when warm season grasses are dormant, damage from traffic may occur because the dormant turf is not growing and has no way to recover from the stress of traffic. In spring, when temperatures start to rise, the warm season grass will come out of dormancy, green-up and begin to grow. Warm season grasses generally have poor cold tolerance with the exception of zoysiagrass and buffalograss that have moderate and good cold tolerance, respectively. Commonly used warm season grasses are given in Table 2.

On some golf courses where bermudagrass is grown, the bermudagrass is overseeded with a cool season grass in fall. This is done to create a temporary cover of green turf during the time when bermudagrass would normally be brown. Golfers enjoy a green playing surface and this helps attract golfers to resorts and public golf courses. In late

spring or early summer, the overseeded cool season grass dies with the onset of hot temperatures. Overseeding a bermudagrss golf course is an expensive and challenging undertaking. It is difficult to establish a cool season grass from seed and then have it die in spring without harming the permanent bermudagrass turf.

Cool season grasses are grown in the northern part of the country where cold winters limit survival of warm season grasses. Warm season grasses are grown in the southern part of the country where hot summer temperatures limit the survival of cool season grasses. There is a zone in the center of the country called the transition zone where neither cool nor warm season grasses are well adapted. High summer temperatures limit performance and survival of cool season grasses and low winter temperatures limit survival of warm season grasses. Figure 1 shows the location of the cool season, warm season and transition zones.

For these reasons, it is very difficult to manage turf in the transition zone. Golf course superintendents working in the transition zone must work very hard to keep cool season grasses alive in the summer or be ready to reestablish when warm season grasses are killed during the winter.