

Turfgrasses for New Mexico

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An important aspect of obtaining a good turfgrass stand is to select the correct or best adapted species and variety. Certain turf characteristics, such as climate adaptation, water use, traffic tolerance, color, quality, maintenance requirements and available resources are all factors that need to be considered when selecting a turf species. Climatic adaptation and traffic tolerance, which largely determines the future use of the turf area, certainly are the two most important factors within this list. Many problems encountered in maintaining turfs can be attributed directly to selecting the wrong turfgrasses for New Mexico's difficult climatic conditions and to the lack of resources, especially water, that home-owners and professional turf growers face in the state.

CLIMATIC ADAPTATION IN NEW MEXICO

Turfgrasses can be divided into two major groups - the cool-season and the warm-season grasses. Representatives of the cool-season grasses include perennial ryegrass, Kentucky bluegrass, fine fescues, creeping bentgrass and tall fescue. Optimum growth of these grasses occurs within a temperature range from 60° to 70°F. They need considerably more water than warm season grasses. Warm season grasses, such as bermudagrass, buffalograss, blue grama, St. Augustinegrass and zoysiagrass grow best at temperatures between 80° and 95° and use water more efficiently. Because of their optimum growth rate at lower temperatures, cool-season turfgrasses are generally adapted to temperate and subarctic climates, while warm-season grasses grow best in arid, semiarid, tropical and subtropical zones.

In New Mexico, cool-season grasses generally can be used anywhere north of Socorro, including the Cloudcroft, Ruidoso, and Silver City areas, while warm-season grasses are more adapted to the southern part of the state. However, this general rule oversimplifies the situation. In most parts of the state, the climate is semiarid, and daily seasonal temperatures can fluctuate widely due to the high altitude. This creates

a dilemma about which turfgrass species are the most suitable. The climate is semiarid with low precipitation, suggesting that warm-season grasses are more appropriate. But low temperatures, due to high elevations, particularly in the winter, make cool-season grasses the better choice. Because of the cool fall, winter, spring and relatively cool summer nights, cool-season grasses can be grown successfully almost anywhere in New Mexico under regular irrigation conditions. However, if water consumption is a concern, the lack of sufficient precipitation makes warm-season grasses the better choice. With the introduction of improved cold tolerant warm-season grasses, New Mexicans can grow low-water-use, warm-season almost anywhere in the state without losing the grasses to winter kill.

WARM-SEASON GRASSES

Bermudagrass

Bermudagrass is the species most adapted to and most frequently used in the lower elevations of southern New Mexico. Many new and improved seeded varieties have been developed and released during the last 10 years. Users now have a choice of varieties that are denser and finer textured than the almost extinct seed of common bermudagrass. Bermudagrass spreads aggressively by stolons (aboveground runners) and rhizomes (belowground runners) and can become a nuisance when it invades flower beds and gardens. Also, cold-tolerant seeded and vegetative varieties are available that withstand lower winter temperatures.

Buffalograss

This species is more drought tolerant and can be sustained on moderately less water compared with bermudagrass. Improved seeded buffalograsses are now available. They are denser and of higher quality

(more attractive) than the older, dual-purpose forage varieties yet not as dense as traditional lawn grasses. Special care must be taken during establishment, especially in weed control.

Zoysiagrass

Improved zoysiagrass varieties have been introduced that establish more quickly than previous varieties. However, zoysiagrass still establishes slower than bermudagrass. The newer varieties are very dense and can be grown successfully in the cooler areas of New Mexico.

COOL-SEASON GRASSES

Perennial ryegrass

Improved and newly released varieties of perennial ryegrass are well adapted to most of New Mexico and thus their use has increased greatly. These varieties establish quickly and provide, good cold tolerance and winter color, but only adequate heat tolerance. Even when irrigated heavily, summers in southern New Mexico can be too hot for perennial ryegrass to survive.

Kentucky bluegrass

The use of Kentucky bluegrass should be limited to the cooler parts of New Mexico. Unlike perennial ryegrass, which is a bunch type turfgrass, Kentucky bluegrass spreads by rhizomes and withstands moderate traffic. Because of the rhizomes, Kentucky bluegrass recovers well from wear injury. On athletic fields, it can be used in mixtures with perennial ryegrass and/or tall fescue.

Tall fescue

Due to its heat and drought tolerance, it is a good general purpose turfgrass for New Mexico. Tall fescue is a tall-growing, coarse- to medium-textured, bunch-type turfgrass that can be established by seed or sod. Tall fescue resists heavy wear and high temperatures. When adequately irrigated, it can be grown successfully in all parts of New Mexico. In warmer areas in the south, a tall fescue stand can be weakened

and can deteriorate through the invasion of bermudagrass.

TRAFFIC TOLERANCE AND RECUPERATIVE ABILITY

If turf areas have intensive traffic (athletic fields, some home lawns), select varieties that have adequate wear tolerance and the capacity to recover quickly from injury (table 1). Although tall fescue is one of the most wear-resistant, cool-season turfgrass, it may not be suitable for many sports turf areas, because it is poorly adapted to low mowing heights. Kentucky bluegrass and perennial ryegrass both have adequate wear resistance and are suited equally to high traffic areas. Among the warm-season grasses, bermudagrass and zoysiagrass have excellent wear resistance. Only bermudagrass, however, has excellent recuperative capacity. Zoysiagrasses recover very slowly from injury. Table 1 provides a quick reference to species adaptation, traffic tolerance and recuperative ability.

Table 1. Turfgrasses for New Mexico.

Grasses	Grass type*	Growing areas in New Mexico¶	Traffic tolerance	Recuperative capability
Bentgrass	C	N, S	Low	High
Bermudagrass	W	S	High	High
Blue Grama	W	S	Low	Low
Buffalograss	W	N, S	Medium	Low
Fine Fescue	C	N, S	Medium	Medium
Kentucky Bluegrass	C	N	Medium/High	Medium
Perennial Ryegrass	C	N, S	High	High
St. Augustinegrass	W	S	Low	Low
Tall Fescue	C	N, S	High	Medium
Zoysiagrass	W	N, S	High	Low

*C: cool-season grass, W: warm-season grass

¶N: North, S: South

Blue grama, St. Augustinegrass, seashore paspalum, and other warm-season grasses may be available in certain areas of New Mexico as seed and/or sod. New turfgrasses, such as Texas bluegrass (Reveille), supina bluegrass and crested hairgrass (turtle-turf), have been recently introduced to the turf market but have not been tested sufficiently under New Mexico's climatic conditions. These grasses have special advantages and require special care during establishment. Contact your local county agent or seed dealer for more information.

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