



Choosing Grasses for Un-Mowed Roughs

For more than 15 years, several graduate students and I have managed demonstrations and research studies with the overall goal of looking for plants that can work in un-mowed rough areas. Originally, these projects looked at native species such as big bluestem, Indiangrass, switchgrass, and side-oats grama that would reduce labor, increase biodiversity, and enhance the golfing experience by improving course appearance and defining areas. We've also looked at un-mowed exotic turfgrasses such as tall fescue, Timothy, and redtop knowing that these grasses can be easily established and managed. Most recently, based on superintendent requests, we've been looking at grasses, primarily blue grama and buffalograss, with the goal of creating roughs that can be both un-mowed and playable.

This article summarizes our up-to-date findings for these projects and is intended to address common questions and concerns about using grasses in un-mowed roughs. Important plant characteristics include height, appearance, ease of establishment, and maintenance. Also, consider the appropriate growing environments and if the grasses are suitable for creating a playable rough. In this article, the grasses have been divided into three sections – exotic, cool-season turf and utility grasses, tall native grasses, and short native grasses.

Exotic Cool-Season Turf and Utility Grasses

Exotic turf and utility grasses are often planted in un-mowed roughs. In our work, we've examined redtop, orchardgrass (*Dactylis glomerata*), tall fescue (*Festuca arundinacea*), fine fescue (*F. spp.*), and Timothy (*Phleum pratense*). In addition, at some golf courses, mowing is stopped in previously mowed areas and the existing turfgrasses are allowed to grow. Often times, bentgrass (*Agrostis spp.*) and bluegrasses (*Poa spp.*) are present in these settings.

The advantages of using these turf and utility grasses are that the areas are easy to establish and maintain; the seed is inexpensive and readily available; the areas can be attractive, especially early in the growing season when these cool-season

species flower; and the fescues and orchardgrass have moderate shade tolerance. For out-of-play far roughs requiring taller plantings, combinations of orchardgrass, tall fescue, and Timothy are planted. Fine fescues are often used in areas where a shorter planting is desired.

Treat as turfgrasses and plant in late summer - you can usually expect a mature stand by the end of the first growing season and flowering starting in the late spring or early summer of the second growing season. Plantings of these grasses should be mowed at least once a year, usually in late summer or early autumn. The areas will probably perform best over the long haul if clippings are removed after mowing. Control weeds in these areas using turf herbicides.

The disadvantages of these grasses are that they are not suited for producing playable roughs – they generally grow too densely, even when planted at low seeding rates. Also, these areas may become unattractive in mid-to-late summer when the grasses can brown and go dormant. Some may lodge or mat down after flowering.

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Redtop in flower at Coyote Run Golf Course.

Redtop (*Agrostis alba*) is typically low growing (to 18" in flower) and is particularly attractive when it produces its pink-red seedheads in late spring/early summer. It can become coarse textured and stemmy when un-mowed. Redtop is well adapted to full sun and soils with moderate moisture levels to moist soils. It can be combined with tall fescue and other coarse-textured utility grasses. Plant seeds at 10-25 pounds per acre in a monoculture.



A combination planting of tall fescue, Timothy, and orchardgrass.

Orchardgrass (*Dactylis glomerata*) is a tall (to 3.5'), coarse grass; its seedheads are not particularly attractive, but contrast nicely with Timothy and tall fescue seedheads when mixed. Orchardgrass grows well in full sun to moderately shaded sites in moist, loamy soils; combine it with tall fescue and Timothy in savanna-like out-of-play areas. Plant seeds at 20-40 pounds per acre in a monoculture.

Tall fescue (*Festuca arundinacea*) is a moderately attractive grass that is easily established from seed. Tall fescue can reach 4' tall (but normally grows to less than 3') and is much more coarse-textured than the fine fescues. 'Kentucky 31' is an older, pasture-type grass characterized by coarse, yellow-green foliage and is often used as a utility species. There are many newer, turf-type cultivars with medium-coarse, darker green foliage. It is very tolerant of most soils and can be grown in full sun to light shade. Tall fescue can be combined with redtop, orchard grass, and Timothy. It tends to remain more erect than the fine fescues. Plant seeds at 160-300 pounds per acre in a monoculture.



Fine fescues at Midwest Golf House in September 2006.

Fine fescues (*F. spp.*) are probably the most widely planted cool-season grass in un-mowed, out-of-play Midwestern roughs. Flowering in late spring and growing to 2.5', these grasses are hard to beat for attractive, links-like appeal. The group includes the Chewings, hard, sheep, and creeping red fescues; all have bunch-type growth except the rhizomatous creeping red types. Unfortunately, many fine fescues become dormant and lodge in mid-to-late summer and lose much of the earlier season's appeal. These grasses are well adapted to full sun to light shade and to dry, infertile, non-compacted soils. Mix several different types and avoid planting in sites with heavy, wet, compacted soils. Plant seed at 80-160 pounds per acre in a monoculture.

Timothy (*Phleum pratense*), like orchardgrass, is a tall (3.5'), coarse grass; its seedhead initially resemble fuzz-less green foxtail, but dry to a dark, dirty brown. It is best grown in full sun to light shade in fertile, moist soils. Grow with orchardgrass and tall fescue in far out-of-play areas. Plant seed at 20-40 pounds per acre in a monoculture.

Tall Native Grasses

Tall native grass species are sometimes planted in out-of-play roughs and include big bluestem, switchgrass, Indiangrass, and cordgrass. These grasses are all warm-season species and typically reach 5' or taller. They can be used to separate fairways and define other golf course areas. Each of these grasses is rhizomatous, but normally, only cordgrass spreads aggressively.

Advantages of these grasses are that they are all Midwestern natives and have evolved in this environment and with local pests. Seed for big bluestem, Indiangrass, and switchgrass is relatively inexpensive and readily available; cordgrass rhizomes are also available. Areas planted to these grasses can add to the biodiversity of the course by attracting insects and birds. Finally, the grasses can be attractive, especially in mid-to-late summer when the grasses are blooming and then later when some of them develop interesting fall color.

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There are several downsides to these grasses. First and foremost, tall native grasses are slow to establish, and the plantings are usually unattractive during the establishment period. Typically, it takes until the third growing season for the areas to look established. During years one and two, the plantings need to be mowed (usually 4" during year one and 6" in year two) to combat weeds while the natives are developing. Another concern is that after establishment, some golfers may object to the appearance considering it to be messy, unkempt, or boring – plantings of grasses only often lack the striking visual interest of areas containing flowering broadleaf plants. Finally, these areas are tall and dense-growing, and thus, definitely not playable roughs.

Once established, plantings of tall native grasses require low-to-moderate maintenance; periodic burning or mowing is required to remove the dead above ground portions of the plants. Weed control, while sometimes necessary, is minimized due to the established heights of these grasses.



Big bluestem fall color can be very attractive.

Big bluestem (*Andropogon gerardii*) is a tall, upright, open or arching grass that grows best in full sun and well-drained, moist soils, but will tolerate very moist sites, as well as drought after establishment. The blue-green foliage becomes reddish-purple to rusty brown at frost and the flowers are moderately showy and resemble a turkey foot. Grow with the tall grass species in far out-of-play areas. Plant seeds at 10-15 pounds per acre in a monoculture.

Switchgrass (*Panicum virgatum*) can be very attractive during the second half of the growing season when it produces large panicles and develops a clear yellow fall color. It is usually found in moist areas in full sun. There are many ornamental cultivars (e.g., 'Heavy Metal' and 'Rostrahlbusch') available for planting in managed landscapes. Grow with the tall grass species in far out-of-play areas. Plant seeds at 5-8 pounds per acre in a monoculture.



Indiangrass flowers in late summer.

Indiangrass (*Sorghastrum nutans*) grows upright and forms large clumps. The late-summer flowers are attractive, starting out yellow before fading to dirty gold. During the season, the foliage is blue-green and becomes bronze, yellow, or rusty orange in fall. Grow in full sun; it is soil tolerant, but prefers some moisture and will tolerate drought after establishment. Plant seeds at 10-15 pounds per acre in a monoculture.

Cordgrass (*Spartina pectinata*) is also known as slough-grass and ripgut grass (due to the sharply serrated leaf margins). Its flowers are probably the least attractive of these four tall grasses, but the light green foliage turns yellow in autumn. Grow in full sun in moist-to-wet sites. It is difficult to establish from seed; plant rhizomes 1.5 to 3' apart.

Short Native Grasses

Several shorter native grasses are also available for unmowed roughs including side-oats grama, blue grama, buffalograss, little bluestem, and prairie dropseed. All of these warm-season grasses are less than 4' tall, native to the Midwest or Great Plains, grow in full sun, and grow in soils with dry-to-average moisture levels. Side-oats grama, blue grama, buffalograss, and little bluestem can all be established from seed. Blue grama and combinations of blue grama and buffalograss show promise for planting into areas where a playable unmowed rough is desired.

The advantages and disadvantages of these species are similar to those of their taller associates – they are attractive and can provide environmental benefits when established. Blue grama germinates relatively quickly for a native, providing as much as 75% cover at the end of the initial growing season. The other grasses in this group grow more slowly and typically are unattractive during the first two growing seasons, when they will need to be mowed regularly to reduce competition from weeds. General maintenance on these species includes periodic burning or mowing to remove the dead, above-ground portions of the plants and weed control.

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Side-oats grama and prairie dropseed can survive tough growing conditions.

Side-oats grama (*Bouteloua curtipendula*) is interesting and attractive in mid-to-late summer when in flower. This grass is too tall for playable, un-mowed roughs and is great in combination with other warm-season grasses such as blue grama, little bluestem, purple lovegrass, and prairie dropseed. It can be seeded or plugged: plant seeds at 10-15 pounds per acre in a monoculture; plant plugs approximately 1' apart.



*One season's growth from seed of blue grama with plugged purple lovegrass at Exmoor Country Club
(Photo Credit: Kurt Galisdorfer)*

Blue Grama (*Bouteloua gracilis*), along with buffalograss, are the species we're currently examining for use as playable roughs. Blue grama is a bunch-type, gray-green grass, with foliage that grows to 1' and with eyebrow-shaped, purplish flowers that reach to 2' in late summer. The foliage is open and short enough to find errant golf shots and to put a club on the ball to hit out. For a playable rough, grow alone or with buffalograss. Seed in late spring at 20 pounds of seed per acre in a monoculture or 10 pounds per acre when mixed with buffalograss.

Buffalograss (*Buchloe dactyloides*) is a stoloniferous gray-green grass that grows 8-10" tall. It is extremely drought and heat tolerant. Plant in full sun in loamy soils with blue grama. Multiple seeds are contained within burs of this slow-to-germinate species. Plant 40 pounds of buffalograss burs per acre with 10-15 pounds of blue grama seed.

Little Bluestem (*Schizachyrium scoparium*) is slow to start growing in the spring, but is a star at the other end of the growing season when it becomes a brilliant rusty-red at the onset of cool autumn conditions. It should be massed, or planted with other short, prairie species such as side-oats grama, blue grama, little bluestem, purple lovegrass, and prairie dropseed. Plant 10-15 pounds of seed per acre in a monoculture. **-OC**

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