A3759

Supina bluegrass

for lawns, golf courses, and athletic fields

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Supina bluegrass (*Poa supina*) is a cool-season grass that is native to the Alps. It has been used in Europe for over 30 years and is receiving increased attention in northern areas of the United States and in Canada for its exceptional performance in high-traffic areas such as golf courses and athletic fields and for its ability to thrive in dense shade. However, supina bluegrass is not appropriate for all areas. Limitations include excess thatch production when mowed at heights normally recommended for lawns; a lighter green color than the Kentucky bluegrasses and perennial ryegrasses that currently dominate lawns and athletic fields; and an aggressive growth habit. This publication describes management considerations for planting and caring for supina bluegrass.

Characteristics and identification

Supina bluegrass is a perennial grass that spreads by stolons (lateral aboveground stems) to form a dense turf (figure 1). Roots often develop at nodes, anchoring the stolons to the ground. The short ligules and thick stolons are especially useful to distinguish supina bluegrass from annual bluegrass (*Poa annua*) and rough bluegrass. Leaf length and width is similar to that of Kentucky bluegrass.

The smooth, soft, hairless leaves are folded in the bud. At the base of the leaf blade is a short, flat membranous ligule, usually only slightly longer than that of Kentucky bluegrass. On seed stalks the ligules can be quite long and somewhat rounded, similar to annual bluegrass.

Seedheads are produced annually each spring, usually early to mid-May, and are distinguished from annual bluegrass seedheads by their purple seed coverings (figure 2). Seedheads can be produced at any mowing height though are more common at higher heights. Seedhead production declines each year of the turf stand.

The color of supina bluegrass is typically a light green which helps the grass to stand out compared to darker green ornamental foliage or grasses.

Figure 1. Stoloniferous growth habit of supina bluegrass.

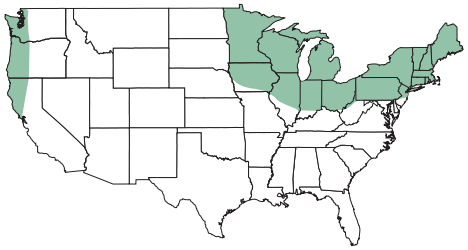
Figure 2. The purple seedheads of supina bluegrass. The white seedhead in the lower right corner is annual bluegrass.

Environmental adaptation

Supina bluegrass grows well on loam and clay soils. It requires frequent irrigation and good fertility to grow acceptably on sandy soils. Adding 5–10% soil by volume to the root zone area (top 6 inches) of a sandy soil will substantially increase the nutrient and water-holding capacity and improve the chance for success. The optimum soil pH range is unknown but probably similar to that of other Poa species, approximately 6.0 to 7.5.

- **Superior shade tolerance.** This grass is one of the best choices for densely shaded, moist sites. It can grow in as much as 90% shade. In dry shaded sites, fine fescues should be used.

Figure 3. Suggested growing range for supina bluegrass.



- **Thrives on high-traffic areas and compacted soils.** The aggressive growth habit and short mowing height for supina bluegrass make it ideal for use in athletic fields and high-traffic areas such as walking paths and the ends of golf cart paths. Supina is an excellent choice for soccer fields; its potential for football fields is less certain as it does not seem to have the same shearing strength as Kentucky bluegrass. Supina bluegrass grows better on compacted soils than most cool-season turfgrasses.
- **Excellent cold tolerance.** Supina bluegrass is one of the first grasses to green up as the snow melts in later winter and early spring. Root and shoot growth begins as early as March.
- **Relatively poor drought and heat tolerance.** Do not plant supina bluegrass in dry areas or in areas south of its range (figure 3). If it does suffer drought stress, it can usually grow back from the stolons provided it receives adequate moisture and fertility. It is not as drought tolerant as most other cool-season grasses and cannot be expected to go dormant for 2–3 months during the summer without a significant loss of turf quality.

Management requirements

Mowing. The recommended mowing height varies depending on the location and use, though generally the mowing height will be shorter than for most other cool-season grasses (table 1). If allowed to grow too tall, supina bluegrass turf becomes thin and thatchy. Mowing supina bluegrass does not require special equipment—use either a reel or a rotary mower. Ideally, turf should be mulch mowed to keep nutrients from the grass clippings in the system. The clippings readily decompose and do not contribute to thatch production.

Fertility. The nitrogen requirements of supina bluegrass are similar to most cool-season turfgrasses. Actual amounts depend on the soil type and amount of traffic (table 2). Use a blend of water-soluble and water-insoluble nitrogen sources. Nitrogen fertility can be used as a tool to encourage the growth of supina bluegrass in a turf mixture. For example, higher nitrogen rates will allow supina bluegrass to outcompete species such as Kentucky bluegrass or perennial ryegrass, particularly if the area is subject to intense traffic. Phosphorus requirements appear to be similar to those of other turfgrasses, and special adjustments are rarely needed. Potassium should be supplied in a 1:1 to 1:2 ratio with nitrogen. Supina bluegrass does not seem to have any special requirements for other nutrients.

Table 1. Recommended mowing heights.

Location	Mowing height (inches)
Sun	0.75–1.5
Heavy shade	up to 2.5
High-maintenance areas such as golf course fairways & tees	0.5

Irrigation. Supina bluegrass should receive 1.0–1.5 inches of water per week to maintain medium- to high-quality turf. Irrigate at least once or twice a week except during periods of frequent rainfall. Use the higher rate of irrigation during hot (> 80°F) or windy conditions. Sandy soils will require more frequent irrigation than loam or clay soils. Do not irrigate to the point of runoff; instead, allow the water to soak into the soil before completing irrigation.

Diseases. Relatively few diseases occur on supina bluegrass and major problems are rare. Occasional diseases of supina bluegrass include dollar spot, microdochium patch (pink snow mold), pythium blight, and summer patch. The best way to limit damage from disease is by providing proper growing conditions and good fertility.

Weeds. Probably due to its aggressive growth habit, supina bluegrass turf often has fewer weeds than most other cool-season turfgrasses. If herbicides are needed, refer to table 3 for a list of herbicides known to be safe for use on supina bluegrass.

Insect pests. Little is known about insect pests on supina bluegrass. Black cutworm (*Agrostis ipsilon*) has been found on supina bluegrass corresponding to similar levels of infestation in adjacent creeping bentgrass turf. There is no reason to suspect supina bluegrass is resistant to white grub, chinch bug, or other insect pests. Fortunately, since insect problems on turf are relatively rare in Wisconsin, insect problems are expected to be infrequent on supina bluegrass.

Table 2. Annual nitrogen requirements of supina bluegrass.

Soil type	Amount of traffic	N rate (lb/1000 sq ft) based on mowing height	
		<1.5 inches	>1.5 inches
Sandy, sandy loam	Light	6	4
	Heavy	8	6
Loam or clay	Light	4	2
	Heavy	6	4

Table 3. Herbicides known to be safe for use on supina bluegrass and the types of weeds they control.

Trade name	Active ingredient(s)	Weeds controlled		
		Annual grasses	Broadleaves	Nutsedge
Postemergent herbicides				
Acclaim	fenoxaprop	■		
Banvel	dicamba		■	
Confront	triclopyr + clopyralid		■	
Drive[a]	quinclorac	■	■	
Lontrel	clopyralid		■	
Manage	halosulfuron			■
MCPP-4 Amine[b]	MCPP		■	
MSMA	MSMA	■		
Prograss[c]	ethofumesate	■	■	
SEE 2,4-D LV4	2,4-D		■	
Strike 3	2,4-D + MCPP + dicamba		■	
Turflon	triclopyr		■	
Pre-emergent herbicides				
Barricade	prodiamine	■	■	
Dimension	dithiopyr	■	■	
Tupersan	siduron	■		

[a] *Drive must be mixed with methylated seed oil. This surfactant is safe for use on supina bluegrass.*
[b] *High rates of MCPP will injure supina bluegrass.*
[c] *Fall applications of ethofumesate (Prograss) will injure supina bluegrass.*

Table 4. Recommended seeding mixtures and planting rates.

Species	Seed mixture (%)	Rate[a] (lb/1000 sq ft)
Supina bluegrass	100	0.5–1.25
Supina bluegrass Kentucky bluegrass	5–25 75–95	1.0–2.0
Supina bluegrass Perennial ryegrass	5–25 75–95	4.0–8.0
Supina bluegrass Perennial ryegrass Kentucky bluegrass	5 15 80	1.5–2.5

[a] *Use the higher seeding rate for faster establishment.*

Thatch control. Core cultivate annually once the turf is 2 years old to prevent excessive thatch development. Thatch is less of a problem in heavily trafficked areas, but annual core cultivation may still be needed to alleviate compaction-related problems (poor rooting and drainage). Apply topdressing in addition to or instead of core cultivation to prevent excessive thatch accumulation. See Extension publication *Lawn Aeration and Topdressing* (A3710) for additional details.

Planting supina bluegrass

Supina bluegrass seed is available through commercial seed distributors. Supina bluegrass can be seeded by itself to produce a uniform turf beginning the first year of establishment. The seed is expensive, however, and may be priced up to 10 times higher than conventional seed. Because of the expense and its ability to outcompete other turfgrasses, purchasing it mixed with other turfgrasses may be desirable where a mixed stand can be tolerated for one to several years. Such a mixture may contain between 5 and 25% supina bluegrass seed by weight. Mixtures may be made with Kentucky bluegrass, perennial ryegrass, or both. Mixtures with creeping bentgrass, fine fescue, or tall fescue are generally not recommended due to differences in turf color, texture, or management requirements.

The speed at which supina bluegrass will dominate the turf stand depends on the initial amount of supina bluegrass, management practices, and traffic. Table 4 lists recommended seeding mixture combinations and planting rates. As with other cool-season turfgrasses, these mixtures can be broadcast or drill-seeded. Seeding depth should be the same as for other cool-season grasses, generally ¼ inch depth.

The best time to seed is between mid-August and mid-September as soil moisture during establishment is usually adequate and the high temperatures of summer are avoided.

A few sod growers produce supina bluegrass sod either in a monostand or mixed with Kentucky bluegrass. These types of sod are usually sold for athletic fields and moist, shaded lawn sites.

Refer to Extension publication *Lawn Establishment and Renovation* (A3434) for information on establishing turfgrass from seed or sod.

Limitations for using supina bluegrass

While supina bluegrass thrives in many difficult growing conditions, there are a few drawbacks that should be considered before planting:

- Seed is expensive. Limited seed production has kept seed cost high. However, it spreads quickly so for most uses only a small amount is needed in the seed mix (see table 4).
- Thatch builds up quickly. Supina bluegrass should be aerated, dethatched, or topdressed annually to prevent buildup of excess thatch. Thatch will be less of a problem in shaded areas and on athletic fields or other heavily trafficked areas.
- Lighter green than many other grasses. Currently only one cultivar, 'Supranova', is available in the United States. This cultivar is lighter green than many varieties of Kentucky bluegrass and perennial ryegrass now on the market. When mixed with these darker green cultivars, supina bluegrass forms distinct, light green patches of turf. These differences become less obvious as the supina bluegrass outcompetes the other species, generally disappearing in 2–3 years. Dark green ecotypes of supina bluegrass exist in nature and it is likely only a matter of time before these become commercially available.
- Lower mowing heights are required. For best results, supina bluegrass needs to be mowed at lower heights than most other cool-season grasses. The optimal mowing height range is 0.75-1.5 inches.
- Supina bluegrass can be unintentionally spread to adjacent turf on mowers and cultivating equipment such as core aerators. You'll need to wash equipment before moving it to another location after using it on a site containing supina bluegrass. Otherwise, pieces of stolons can be carried to new areas where they can take root. If supina bluegrass does invade a non-desirable area, glyphosate-containing herbicides (e.g., Roundup) are the only known chemical control measure. Small patches or individual plants may be readily removed by hand. Due to its mowing, fertilization, and irrigation requirements, supina bluegrass is not expected to spread outside of maintained turf areas.
- The seedheads are sometimes objectionable. This is a minor problem since seedheads are produced only during a 2- to 4-week period in mid-spring and production wanes as the turf stand ages. No research has been conducted into seedhead suppression methods.

References to pesticide products in this publication are for your convenience and are not an endorsement of one product over other similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from pesticide exposure. Failure to do so violates the law.

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