

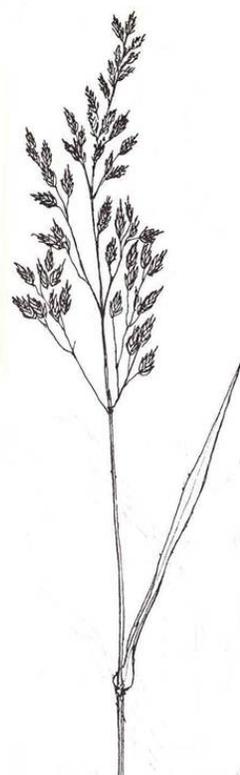


Tall Fescue

Tall fescue [*Lolium arundinaceum* (Schreb.) Darbysh.] is a native of Europe, introduced to North America in the 1800s. It occupies more than 35 million acres in the USA, primarily in the eastern transition zone between north and south. Its primary use is for pastures in that region, but can be a highly productive, persistent hay and silage source in the Northeast.

Description

Tall fescue is a cool-season bunch grass. The head or panicle can be up to 20 inches long. Leaves can be coarse and sharp to the touch in older cultivars, some newer cultivars are quite smooth. Roots are large and coarse, and the plant generally has short rhizomes, underground stems that root at the nodes.



Tall fescue is adapted to a wide range in soil conditions, and is more tolerant of low soil pH than other cool-season grasses. It has excellent persistence in NY.

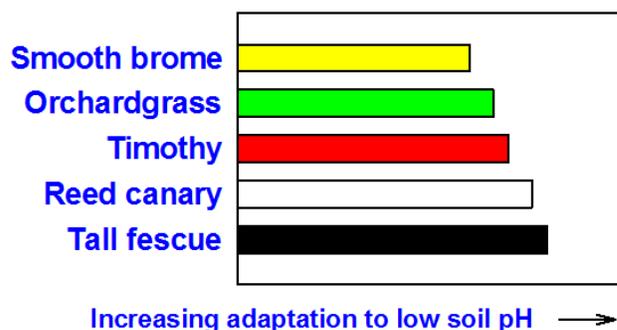


Figure 1. Species ranking for adaptation to soil pH.

Endophyte Issues

Tall fescue has gained a reputation for poor animal performance. This is primarily because older cultivars as well as wild naturalized tall fescue contain an endophytic fungus that grows within the plant, with no visible signs. The association results in ergot alkaloid production, which has negative impacts on animal production. The grass receives a number of beneficial effects, however, from the fungal association, including tolerance to drought, insects, diseases, and nematodes.

The downside of the fungal association is a series of animal maladies termed tall fescue toxicosis syndrome. Animal performance is severely negatively affected, primarily due to ergot alkaloids. The fungus dies in seed stored over a year, so endophyte-free seed can be generated. Any endophyte-infected tall fescue must be completely eradicated from a field, or an endophyte-free fescue seeding will be become infected. Endophyte-free cultivars, however, do not persist under severe drought or insect pressures.

Nontoxic Novel Endophyte

An endophytic fungus was discovered in New Zealand that increases ecological fitness of the grass without ergot alkaloid production. Several cultivars of novel endophyte tall fescue are now available. Such cultivars are essential in areas with heavy insect pressure, such as

New Zealand and Australia. They also are essential in southern areas of the USA to survive hot droughty environments.

What about the Northeast?

The Northeast has neither the very hot, droughty weather of the Southern states, nor the heavy insect pressure on grasses found in New Zealand/Australia. Endophyte-free tall fescue has not shown any persistence problems in the Northeast. We established four pairs of novel-endophyte/endophyte-free cultivars at three sites in NY in 2005. These pairs were the same cultivar, except one of the pair contains novel endophyte. There were no differences in yield or persistence between cultivars that were endophyte-free, compared to the same cultivar with novel endophyte.

Establishment

Seed at the rate of 12-15 lbs PLS/acre. Seed companies recommend much higher rates for pasture use, but such rates do not appear necessary for hay or silage use. Either spring or late summer seedings are successful, with good seedbed preparation. Tall fescue grows best on medium to heavy textured soils with adequate moisture, but can tolerate a wide range in soil pH and soil drainage.

Management

Tall fescue is very high yielding with regular animal manure applications. Without manure, fertilizer N up to 225 lbs N/acre is required for growth and moderate crude protein content. Tall fescue is generally lower in CP than other cool-season grasses, except for timothy.

Table 1. Cornell University Plant Breeding grass trials at Ithaca, NY. Four harvests per season with 200 lbs N/acre applied.

Grass	Years	Tons DM/acre
Tall Fescue	2006-10	6.7
Orchardgrass	2006-10	5.7
Smooth brome	2008-10	5.5
Timothy	2006-10	5.4
Reed canarygrass	2006	5.3
Perennial ryegrass	2006-10	4.4

Intensive management is required to produce lactating dairy quality forage. The first two harvests of the season will be suitable lactating dairy forage if harvested between 50-55%

NDF. Tall fescue does not go dormant in the summer as it does in the south, so that four cuts are possible in NY. Regrowth is higher for tall fescue at all cuts than the other cool-season grasses. This generally results in up to a one ton/acre higher yield than other species.

Soil Conservation

Tall fescue stabilizes slopes and promotes water infiltration. Heavy production of roots improves soil structure and minimizes erosion. The deep, heavy root system, along with tolerance of marginal soil conditions, allow tall fescue to be used for reclaiming and stabilizing strip-mined land.

Summary

Tall fescue can be grown for hay and silage in the Northeast, as long as the cultivar is endophyte-free or has novel-endophyte. There appears to be no reason to invest in expensive novel-endophyte seed in the Northeast. As with most cool-season grasses it will reduce soil erosion and is effective in recycling nutrients from manure. If harvested in a timely fashion, tall fescue will be a high yielding, acceptable quality forage for lactating dairy cows.

Additional Resources

- 2011 Cornell Guide for Integrated Field Crops Management. Electronically accessible at: <http://ipmguidelines.org/Fieldcrops/>.
- Species selection NY: <http://forages.org>

Disclaimer

This information sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this information sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of particular discharge levels from agricultural land.

For more information



Cornell University
Cooperative Extension

Grass Management Manual
<http://forages.org>

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