



Orchardgrass

Orchardgrass (*Dactylis glomerata* L.) is a native of Europe, introduced to North America with the early settlers. It is adapted to the Northeast and lower Midwest USA, as well as the Pacific Northwest. Orchardgrass grows aggressively in the Northeast, but is susceptible to occasional winterkill in NY and more frequent winterkill in northern New England. Orchardgrass is known as “cocksfoot” in most countries outside of North America, because of the shape of its seed head. It is called orchardgrass here because of its shade-tolerant attribute observed in orchards by early settlers.



Description

Orchardgrass is a perennial cool-season bunchgrass that produces an open sod. It has a relatively compact seed head that can be up to 8 inches long. It has an extensive root system, without stolons or rhizomes to allow spreading. Heavily fertilized orchardgrass will develop into a very bunched sod with up to half the soil surface area exposed.

Cultivar Selection Important

There are many orchardgrass cultivars available, from early to relatively late maturing, that are well adapted to the Northeast. Orchardgrass quality tends to decline very quickly with maturity, such that a late maturing cultivar is preferred. Cultivar

selection is based primarily on heading date, adaptation to the region, and yield potential. There are tall, stemmy, early cultivars; shorter, leafy, late cultivars; and dwarf leafy cultivars. There has been limited progress, however, in developing cultivars with genetically superior forage quality.

Diseases

Orchardgrass is more susceptible to diseases than other cool-season grasses. Adequate fertility and moisture, however, will help orchardgrass grow faster than the progression of the disease. Dry conditions or excessively wet conditions will have the opposite effect. Drought or wet conditions may encourage disease progression. Leaf disease can significantly reduce forage quality.

Alfalfa-Orchardgrass mixtures

If sown in mixture with alfalfa, the orchardgrass cultivar should match the maturity date of alfalfa as closely as possible. This usually means a very late maturing orchardgrass cultivar is preferred. The orchardgrass seeding rate in mixtures must be very low (1-3 lbs PLS/acre) or the stand will quickly be dominated by the grass. This is particularly true if a cultivar with a small seed size is selected, such as *Satin*.

Orchardgrass is considered compatible with alfalfa from a maturity standpoint, but is very competitive with alfalfa. Other grass species tend to be favored for mixtures with alfalfa.

Establishment

Orchardgrass is very well adapted to Northeast growing conditions and will establish a stand quickly. Seed at the rate of 8-12 lbs PLS/acre. Both spring and late summer seedings can be successful, as long as late summer seedings occur by mid-August. Use the species selection tool as an aid to matching orchardgrass to a given site. Orchardgrass is not tolerant of poorly-drained soils, or low soil pH. Orchardgrass is relatively easy to establish but

still deserves a well-prepared seedbed.

Management

Forage with relatively high CP can be obtained if adequate N is available. A spring-greenup application of 100 lbs N/acre can be followed by 75-100 lbs N/acre after spring harvest. Total N application for the season should not exceed 225 lbs N/acre. Like most cool-season grasses, orchardgrass responds well to animal manure fertilization. Fertilization with P and K depends on recommendations from soil tests, but P and K fertilization will most likely be unnecessary if manure is applied.

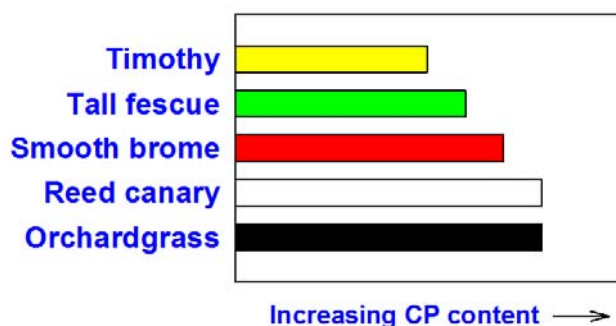


Figure 1. Species CP content, assuming equal N fertilization and harvest at the same maturity stage.

Spring rainfall makes production of good hay very difficult. Spring harvest should occur prior to heading, to produce 50-55% NDF forage for silage. Late maturing cultivars should be harvested at an earlier stage, as they will tend to reach 50% NDF at an earlier morphological stage. Regrowth will need to be harvested about 30 days after spring harvest.

Sparse-Heading Cultivars a Possibility

Most orchardgrass cultivars are relatively early maturing, and have abundant heading. From a grazing standpoint, both traits are undesirable. About 10 years of selection have identified orchardgrass germplasms with reduced panicle production in the Northeast and Midwest, but also with the ability to produce good seed yields in the Northwest.

Persistence, yield and the degree of heading is being evaluated. Seed production is essential to the commercial success of such a cultivar. More testing is required, but one or more sparse-heading cultivars could be released in the relatively near future.



Figure 2. Spring harvest of sparse-heading germplasms and normal cultivars at Chazy, NY.

Summary

Orchardgrass is well adapted to grazing management, but late maturing cultivars should be selected for hay and silage use. This is particularly true if it is sown in mixture with alfalfa. Intensive harvest management is even more essential with orchardgrass than the other cool-season grasses, due to its rapid decline in palatability. Orchardgrass is not as winterhardy as other grasses, but can produce dry matter yields of up to 6 tons/acre with high rates of N fertilization and good weather.


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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