



## History of Perennial Grasses

Cool-season perennial grasses provide a significant portion of the forage for dairy cows in the Northeast, unlike much of the rest of the USA. Most of the cool-season perennial forage grasses used in the Northeast are not native to the USA. They were introduced from Eurasia and North Africa several centuries ago.

### Kentucky bluegrass

Kentucky bluegrass (*Poa pratensis* L.) is included here to complete the set of major cool-season forage grasses in the Northeast, but it is almost exclusively used for pastures. "Kentucky" bluegrass may have originated only in Eurasia. It is not known if there was any native Kentucky bluegrass in North America, prior to colonial times, and it has not been documented as native.

Some classification confusion is due, in part, to the fact that *Poa* species can form hybrids in nature. There is also considerable morphological variation within the genus that overlaps from one species to the next, making identification of species difficult.

### Perennial ryegrass

Perennial ryegrass (*Lolium perenne* L.) originated in Europe, Asia, and North Africa, and was introduced to North America during colonial times. Perennial ryegrass is the most popular cool-season perennial grass for grazing in Europe and New Zealand, and is found in temperate zones on all continents. Because it is intolerant of hot summers or cold winters, its use in the USA is limited.

### Orchardgrass

Orchardgrass (*Dactylis glomerata* L.) is native to Europe, North Africa and Asia, where it is known as 'cocksfoot'. It was introduced to North America in the 1750s. Orchardgrass tolerates shade better than most other cool-season grasses, making it very competitive in mixtures. Orchardgrass can survive as far north as Alaska if there is consistent snow cover, but is not as winterhardy as the other

cool-season grasses in the Northeast, where winter temperatures and snow cover moderates.

### Reed canarygrass

Unlike the other grasses, reed canarygrass (*Phalaris arundinacea* L.) is native to temperate regions of the northern hemisphere with circumglobal distribution. It has become a serious weed in many wetland areas in the northern USA. Some believe this is due to introduction of aggressive genotypes from Europe. Reed canarygrass can be readily propagated by axillary stem buds, rhizomes, or seeds, and seeds float on surface waters for widespread distribution.

All of the current forage cultivars of reed canarygrass may have been derived from European germplasm. Efforts are underway to sort out the native vs. European distribution of reed canarygrass in North America. The two genotypes are indistinguishable morphologically.

### Smooth brome grass

There are many species of brome grasses and some are native to North America. Smooth brome grass (*Bromus inermis* Leyss.), however, is not one of them, it is native to Eurasia. Smooth brome grass was introduced to North America in the late 19<sup>th</sup> century from Hungary and Russia. While smooth brome grass is very winter hardy, its use is limited in the Northeast for dairy forage. The optimum quality harvest stage for smooth brome grass corresponds to the optimal stage for damaging the plant by defoliation.

### Tall fescue

Tall fescue [*Lolium arundinaceum* (Schreb.) Darbysh.] is a native of Europe, North Africa and Asia. It was introduced to North America in the 1800s. Tall fescue may have been introduced as a contaminant in meadow fescue seed from Europe. Tall fescue went on to replace meadow fescue for most pasture

applications in the humid temperate zone of the USA.

Although classified as a bunchgrass, tall fescue produces an even sod when grazed or mowed. A stand of tall fescue on a Kentucky pasture that existed before 1900 was propagated, tested and eventually released as the cultivar Kentucky 31. KY-31 became the most popular grass cultivar in history, and is still sold today.

### Timothy

Timothy (*Phleum pratense* L.) is native to northern Europe, where it is well adapted to cool climates and harsh winter conditions. It is thought to have been introduced to North America in the early 1700s from England by Timothy Hansen. The ease of planting and persistence of timothy have made it the top selling cool-season perennial grass in NY State for decades.

Table 1. Perennial cool-season grass characteristics, including range in heading dates for NY State.

Species	Growth habit	Seeds/lb	Head type	Heading date
Kentucky bluegrass	Sod	2,700,000	Panicle	May 10-30
Perennial ryegrass	Bunch	225,000	Spike	May 20-30
Orchardgrass	Bunch	650,000	Panicle	May 10-30
Reed canarygrass	Sod	530,000	Panicle	May 20 – June 5
Smooth brome	Sod	135,000	Panicle	May 25 – June 5
Tall fescue	Bunch	225,000	Panicle	May 20 – June 1
Timothy	Bunch	1,230,000	Compact panicle	May 25 – June 15

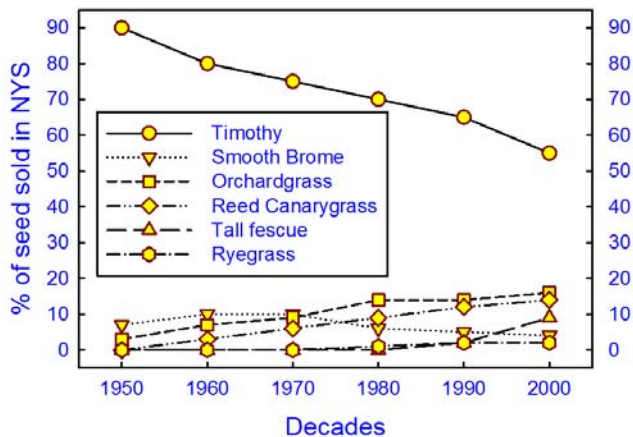


Figure 1. Estimated proportions of forage grass seed sold in NYS per decade by species.

Timothy and smooth brome grass have declined in use, however, timothy remains the most popular forage grass in NY. Reed canarygrass and more recently tall fescue have substantially increased in use.

### Summary

Many cool-season perennial grasses are well suited to the Northeast climate, but almost all cultivars are derived from Eurasian or North African origins. This probably includes current reed canarygrass cultivars, even though there is native reed canarygrass found across the northern USA.


### Additional Resources

- 2011 Cornell Guide for Integrated Field Crops Management. Electronically accessible at: <http://ipmguidelines.org/Fieldcrops/>.
- Balasko, J.A. and C.J. Nelson. 2003. Grasses for Northern Areas. Chapt. 6. pp. 125-148. In (R.F. Barnes, et al., ed.) Forages: An Introduction to Grassland Agriculture. Vol. I. Blackwell Publishing.
- Casler, M.D. and R.L. Kallenbach. 2007. Cool-Season Grasses for Humid Areas. Chapt. 14. pp. 211-220. In (R.F. Barnes et al., ed.) Forages: The Science of Grassland Agriculture. Vol. II. Blackwell Publishing.
- Moser, L.E., D.R. Buxton, and M.D. Casler. 1996. Cool-Season Forage Grasses. Agronomy Series No. 34. 841 p. ASA, CSSA, ASSA, Madison, WI.

### 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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