



Timothy

Timothy (*Phleum pratense* L.) was introduced to North America during the early colonial period, most likely from northern Europe. Timothy is well adapted to cool, humid environments, in particular the Northeastern and Northwestern USA, although it is also well suited to the northern Midwest. Timothy remains the most popular cool-season perennial grass grown in NY, used primarily in mixture with alfalfa.



Description

Timothy is a bunchgrass with a relatively shallow root system, making it unsuitable for hot and dry environments. It has no rhizomes or stolons, and tends to form large clumps. One of the lower stem internodes enlarges into a bulb-like corm, where plant reserves are stored. The seed head is a compressed panicle that looks something like a common cattail.

Cultivar Selection

Older timothy cultivars are typically very late

maturing. Much of the timothy sold in the Northeast is common, not certified. Newer cultivars have been selected for early maturity, to match up better with legume growth. Early-maturing cultivars persist better than late-maturing cultivars when grown with alfalfa.

Establishment

Timothy can be spring seeded, or seeded in early August in NY. A firm seedbed is desirable to maximize success, but timothy can overcome poor seedbed conditions better than other cool-season grass species. Seed size is very small, with well over one million seeds per pound. A seeding rate of 6-8 lbs PLS/acre is suggested.

Timothy has more rapid germination and emergence than other cool-season perennial grasses, but seedling development is slow and more susceptible to competition. Severe weed competition, particularly grass weeds, may result in a failed seeding. Timothy is very susceptible to drought at the seedling stage, and remains susceptible to drought when established.

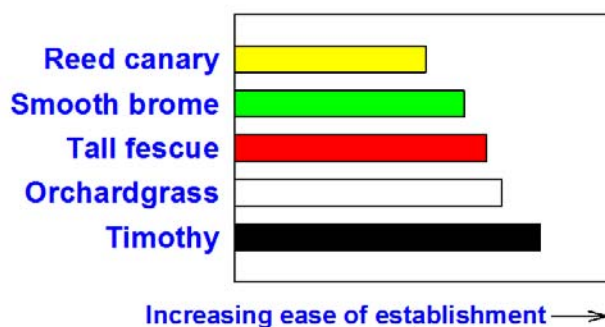


Figure 1. Relative ease of establishment for cool-season grasses in NY.

Management

Soil pH for timothy stands should be between 5.5 and 7.0. Fertilize with P and K according to soil test recommendations, and apply up to 225 lbs N/acre for maximum yield. Timothy will produce similar yields to reed canarygrass or orchardgrass when fertilized with similar

rates of N. As with the other cool-season grasses, timothy responds very positively to animal manure applications.

Timothy is supposed to be very sensitive to cutting between early stem elongation and early heading. Although this characteristic has been verified in other regions, in reality timothy rarely responds negatively to cutting during stem elongation in the Northeast. This may be due to the fact that it is so well adapted to our environmental conditions.

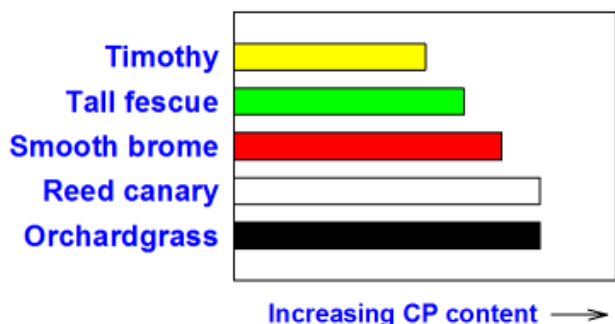


Figure 2. Species CP content, assuming equal N fertilization and harvest at the same maturity.

Significant Forage Quality Issues

Timothy in the Northeast is consistently lower in CP content at a given maturity stage, compared to all other grasses. Under the same N fertilizer regime, timothy will be as much as two percentage units lower in CP than orchardgrass. This is a serious flaw for the species as a lactating dairy forage source.

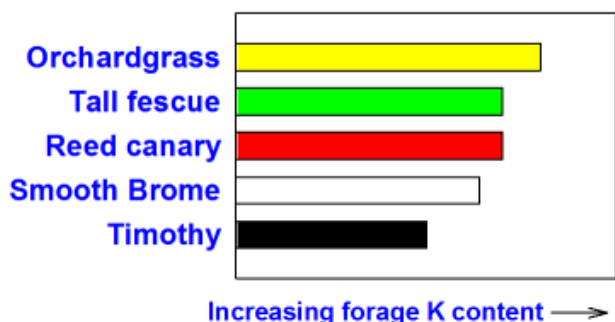


Fig. 3. Forage Potassium content for cool-season grasses, assuming an adequate supply of soil K.

Timothy forage also is significantly lower in K content than other species; it can be two percentage units lower in K than orchardgrass. This makes timothy a reasonable source of low K forage for dry cows. This is only true,

however, when there is adequate soil K available. If soil K is depleted, all grasses will be low in forage K, with much smaller differences among species.

Hay for Horses

Pure timothy is very popular as forage for horses in the region. Many horses are kept for recreational use, so high performance diets are not required. Brood mares, working horses, and foals will require more nutrients. Horse owners often prefer mature timothy, because the presence of seed heads clearly identifies the crop as timothy. To make high quality hay, it is important to harvest at the right maturity. To be a desirable horse hay source, timothy also needs to be weed and dust free.

Summary

Ease of establishment, wide adaptability, good persistence, cheap seed, and compatibility with alfalfa make timothy a very popular perennial grass forage in the Northeast USA and Eastern Canada. It is difficult to justify timothy for dairy cows, however, when its use essentially forces farmers to purchase up to an additional two percentage points of CP to overcome low forage CP.


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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