



COOPERATIVE EXTENSION SERVICE  
UNIVERSITY OF KENTUCKY COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

# Cool-season Forage Grasses: *Tall Fescue, Orchardgrass, Bluegrass, and Timothy*

## Introduction

TALL FESCUE (*Festuca arundinacea*) is a long-lived grass that can be used for livestock feed, lawns, turf, and conservation purposes. One shortcoming as a livestock feed has been its inconsistent animal performance and relatively low palatability. These quality problems have been linked to a fungal endophyte infecting tall fescue plants. Endophyte-free and endophyte-friendly varieties are available.

ORCHARDGRASS (*Dactylis glomerata*) is a cool-season, perennial, tall-growing bunch-type grass that can be used for pasture, hay, green chop, or silage. A high quality grass, it will provide excellent feed for most classes of livestock.

KENTUCKY BLUEGRASS (*Poa pratensis*) is a versatile grass that can be used for pasture, seed, sod, turf, and hay. It is a high quality and very palatable forage grass suitable for all classes of livestock. Legumes, especially the white clovers, improve feed quality and productivity of bluegrass.

TIMOTHY (*Phleum pratense*) is a perennial bunch grass that is primarily used for hay. It also fits well in mixtures with legumes, such as alfalfa or red clover.



KENTUCKY BLUEGRASS

## Marketing and Market Outlook

Tall fescue, orchardgrass, bluegrass, and timothy are the dominant forage grasses in Kentucky. They have potential for the cash hay market and for intensive grazing. Significant price premiums may be possible for high-quality hay. Timothy hay, either alone or in mixtures with alfalfa, is much desired by horse owners. Historically, timothy has been an important seed crop in Kentucky; however, at present only a small acreage of timothy is grown for seed.

## Production Considerations

### *Site selection and planting*

The cool-season forage grasses are generally adapted to a wide range of soil types; however, orchardgrass is more successful in the better well-drained soils in Kentucky. These grasses are best seeded in late summer or early fall. Although seeding in early spring can be successful, plants are more susceptible to summer drought and weed competition. Orchardgrass tends to be more tolerant of shade, drought, and heat than either timothy or bluegrass. Cool-season grasses



can be seeded either directly into a conventionally tilled seedbed or seeded using no-till techniques.

#### *Pest management*

The most commonly occurring leaf diseases in Kentucky are net blotch, leaf scald, and rust. Following good management practices can help reduce the risk of disease problems. Insect damage resulting in defoliation is generally not a problem for these grasses. Weed control is best accomplished with good grazing management and mowing.

#### *Harvest*

The optimum stage of maturity for harvesting cool-season grasses for hay is boot to early head stage for the first cutting. Later cuttings can be made at 4- to 6-week intervals, as growth permits.

#### *Labor requirements*

Total labor needs for hay production, cutting, and baling is approximately 12 hours per acre.

### **Economic Considerations**

Initial investments include land preparation, soil fertility, purchase of seed, and equipment necessary for production. Estimated 2014 costs for producing a cool-season grass hay in round bales is approximately \$215 per acre. This includes 60 actual units of nitrogen, 60 actual units of phosphorous, and 120 actual units of potash at early 2014 retail prices. Also included are estimates for labor, fuel, oil, repairs, and other variable expenses.

Presuming a harvest of 3½ tons of hay sold at \$85 per ton, returns to land and management are estimated at \$11 per acre. A break-even price of \$61 per ton would be needed to cover variable costs of a 3½-ton per acre harvest. Higher yields can increase profitability. Production costs could potentially be reduced through regular renovation with legumes.

Enterprise costs can potentially be reduced when grasses are produced for grazing. Since a large percent of the cost of producing hay is



TALL FESCUE

the machinery and equipment, this cost can be eliminated, or certainly minimized, in a total grazing system. When estimating costs on grazing systems, producers should also consider production costs (including fencing and water), utilization rate, and the potential for nutrient recycling.

### **Selected Resources**

- Establishing Forage Crops, AGR-64 (University of Kentucky, 2003) <http://www.ca.uky.edu/agc/pubs/agr/agr64/AGR64.htm>
- Forage Enterprise Budgets (University of Kentucky, 2006) [http://www.ca.uky.edu/cmspubsclass/tinymce/jscripts/tiny\\_mce/plugins/filemanager/files/adreum/budgets/ForageEnterpriseBudget.xls](http://www.ca.uky.edu/cmspubsclass/tinymce/jscripts/tiny_mce/plugins/filemanager/files/adreum/budgets/ForageEnterpriseBudget.xls)
- Forage Extension Web site (University of Kentucky) <http://www.uky.edu/Ag/Forage/>
- Forage Identification and Use Guide, AGR-175 (University of Kentucky) <http://www.ca.uky.edu/agc/pubs/agr/agr175/agr175.htm>
- Grain and Forage Crop Guide for Kentucky, AGR-18 (University of Kentucky, 2007) <http://www.ca.uky.edu/agc/pubs/agr/agr18/agr18.pdf>
- Improved Grass Legume Hay Enterprise Budget Decision Aid (University of Kentucky, 2005) [http://www.ca.uky.edu/cmspubsclass/tinymce/jscripts/tiny\\_mce/plugins/filemanager/files/adreum/budgets/archiveddecisiontools/improvedhaybudget3.xls](http://www.ca.uky.edu/cmspubsclass/tinymce/jscripts/tiny_mce/plugins/filemanager/files/adreum/budgets/archiveddecisiontools/improvedhaybudget3.xls)
- Kentucky Bluegrass as a Forage Crop, AGR-134 (University of Kentucky, 1988) <http://www.ca.uky.edu/agc/pubs/agr/agr134/agr134.htm>
- Orchardgrass, AGR-58 (University of Kentucky, 2003) <http://www.ca.uky.edu/agc/pubs/agr/agr58/agr58.htm>

- Quality Hay Production, AGR-62 (University of Kentucky, 1996) <http://www.ca.uky.edu/agc/pubs/agr/agr62/agr62.htm>
- Tall Fescue, AGR-59 (University of Kentucky, 2003) <http://www.ca.uky.edu/agc/pubs/agr/agr59/agr59.htm>
- Timothy, AGR-84 (University of Kentucky, 2002) <http://www.ca.uky.edu/agc/pubs/agr/agr84/agr84.htm>
- Tall Fescue On-line Monograph (Oregon State University, University of Tennessee, and University of Arkansas, 2010) <http://forages.oregonstate.edu/tallfescuemonograph/>
- Understanding Forage Quality (American Farm Bureau Federation, 2001) <http://www.uwex.edu/ces/forage/pubs/FQ.pdf>

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*Reviewed by Garry Lacefield, Extension Specialist (Issued 2002, Revised 2006, Revised 2010, Revised 2014)*

*Photos courtesy of University of Kentucky Forage Identification and Use Guide, AGR-175 **May 2014***

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