

UK COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Cereal Straw Production

Introduction

Winter small grains, especially wheat and barley, are an important part of the typical crop rotation system of many Kentucky farmers. These crops are primarily grown for their grain; however, harvesting the straw as a secondary product can provide additional income. Some growers choose to forgo the grain harvest altogether, producing high quality straw as the main commodity. Other grains such as rye and triticale have potential for straw production.

Marketing

Wheat straw is used as animal bedding and feed and is a valuable commodity in the horse industry. Straw is also used as a mulch by homeowners, landscapers, and small fruit growers. Gardens, newly seeded turfgrass, and strawberry plantings are a few of the areas that can be mulched with straw. Highway departments also make use of straw as a mulch along roadsides. In addition, straw bales can serve as barriers to run-off at road and building construction sites. Marketing strategies should target these end-users.

Straw quality is extremely important for successful marketing of this product. Both growers and end-users most commonly cite “dustiness” as a reason for reduced prices.



Producers growing bearded varieties could also consider tapping into the ornamentals market. In this case the entire plant is cut to include the stem and head, then sold for use in cut flower arrangements. Potential markets include farmers’ markets, crafts stores and florists.

Market Outlook

The production of high quality winter wheat straw may have considerable potential in Kentucky. Recent reports of high selling prices for quality straw for horse bedding and home landscape mulch further raise those prospects.

Production Considerations

Wheat straw production is similar to wheat production for grain. Since small grains do not tolerate waterlogged conditions, a well-drained site should be selected. Seeding, which takes place in the fall, can be accomplished either by drilling or broadcasting. Tillage options include conventional tillage, reduced tillage and no-till.

Wheat straw producers may apply more nitrogen than grain producers. This results in taller plants and increases the straw yield. Excessive nitrogen rates can lead to lodging, which will reduce straw quality. Rye and triticale tend to grow taller than wheat with fewer lodging problems.

Most small grains production information is directed to achieving high yields of quality



seed. Researchers at the University of Kentucky are currently investigating how differences in cultivars, planting date, and nutrition affect straw quality.

Pest management

Disease and insect problems are best managed through the use of integrated pest management strategies, including crop rotation, resistant varieties, and proper fertility. Scouting to monitor insect and disease problems can help the grower determine when and how often pesticides should be applied. Weed control begins with managing weeds in the previous crop.

The presence of fungal spores in straw contributes to its dustiness and can reduce saleability. A University of Kentucky study is currently underway to determine if a fungicide application made at heading to protect grain yield potential might also provide benefits in terms of straw quality.

Harvest and storage

Wheat is typically harvested when the grain dries to the desired moisture content; however, growers interested only in the straw may choose to harvest earlier. Some producers who raise small grains exclusively for straw will spray a herbicide to hasten drydown of the plants. Once cut, the straw should not be baled until it has dried sufficiently to store in the bale. One acre of winter wheat can easily produce 2 tons of straw, or 80 bales weighing 50 pounds each.

Labor requirements

Labor needs are approximately 2 hours per acre to bale straw. Pre-harvest production labor is the same as grain production.

Economic Considerations

Variable costs for baling cereal straw include the

cost of machinery used for baling, hired labor, and the cost of baler twine. Although significant additional labor may be necessary to handle square bales, the total variable cost per bale will usually not exceed \$0.80. Depending on the age and kind of equipment used, fixed costs (depreciation) will usually bring the total cost per bale to about \$1.00. Good quality straw can sell for \$80 to \$120 per ton (\$1.00 to \$1.50 per bale) at auction or off the farm.

Prices received per bale of straw can vary considerably, depending on location and intended use. It is not uncommon to see bales of straw retailing for \$4 or more each for use in home landscaping or as animal bedding. Producers located near these areas may be able to capitalize on such lucrative markets, but may incur added transportation and handling costs. Producers who are able to capture these prices may gain returns to management up to \$3 per bale.

More Information

- Kentucky Intensive Wheat Management, ID-125 (University of Kentucky, 1997)
<http://www.ca.uky.edu/agc/pubs/id/id125/id125.htm>
- Best Management Practices When Harvesting Surplus Cereal Straw (Saskatchewan Agriculture and Food, 2006)
<http://www.agriculture.gov.sk.ca/Default.aspx?DN=9d0653b7-9839-42e5-9a72-c5f678834165>
- Enterprise Guide for Southern Maryland: Straw Production (Maryland Cooperative Extension, 1988)
<http://extension.umd.edu/publications/PDFs/FS449.pdf>
- Small Grain and Straw Budgets (Virginia Tech, 2001)
<http://www.ext.vt.edu/departments/agecon/spreadsheets/crops/smgrn.html>