

# 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. Other grains, such as rye and triticale, also have potential for straw production.

## Marketing

Wheat straw is used as animal bedding and feed. It is a valuable commodity in the horse industry where the straw is mainly sold under contract. Producers selling to this market must be able to meet the buyer's demands for the final product. Straw is also used as mulch by homeowners, landscapers, and small fruit growers. Gardens, newly seeded turfgrass, and strawberry plantings are a few of the areas that are often mulched with straw. Highway departments also make use of straw as 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.

Producers growing bearded (awned) varieties could also consider tapping into the ornamentals market. In this case the entire plant is cut



to include the stem and head, and then sold for use in cut flower arrangements. Potential markets include farmers markets, craft 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 raises those prospects. 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. Dustiness can be reduced by growing awnless varieties, limiting foliar diseases with a fungicide, and timely harvest of mature straw.

## Production Considerations

### *Site selection and planting*

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, although drilling is recommended. Tillage options include

conventional tillage, reduced tillage, and no-till.

Wheat straw producers may apply more nitrogen than

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grain producers attempting to get more straw. Excessive nitrogen rates, however, 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. In the past, we recommended tall wheat varieties for straw production, but recent data indicates that taller plants do not always produce more straw. The University of Kentucky Small Grains Variety Testing Program has a straw yield plot at Lexington, KY each year. Straw yields are reported in the variety test report. Straw yields and grain yields come from the same plots at Lexington, so grain yield and straw yield can be compared.

#### *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 should 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. If the market for straw requires clean, shiny straw, then a fungicide application near bloom stage is

recommended. The fungicide application may or may not improve grain yield, but will likely improve straw appearance.

#### *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 an 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 should 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 (0.8 hour).

### **Economic Considerations**

Variable costs (December 2008) for baling cereal straw include the operating 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 for producing and baling will usually not exceed \$2.90. Depending on the age and kind of equipment used, fixed costs (such as depreciation and interest on machinery) will usually bring the total cost per bale to about \$3.30. Good quality straw can sell for \$200 to \$400 per ton (\$2.50 to \$5.00 per bale) at auction or off the farm.

Prices received per bale of straw tend to vary considerably, depending on location and intended use. It is not uncommon to see bales of straw retailing for \$6.00 or more per bale 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 for limited markets may gain returns to management up to \$2.70 per bale.

## **Selected Resources**

- Comprehensive Guide to Wheat Management in Kentucky, ID-125 (University of Kentucky, 1997)

<http://www.ca.uky.edu/agc/pubs/id/id125/id125.htm>

- Straw Yields from Six Small Grain Varieties (University of Kentucky, 2006)

[http://www.uky.edu/Ag/GrainCrops/Research/Research\\_pdf/SmallGrains\\_StrawYields2005.pdf](http://www.uky.edu/Ag/GrainCrops/Research/Research_pdf/SmallGrains_StrawYields2005.pdf)

- Best Management Practices when Harvesting Surplus Cereal Straw (Government of Saskatchewan Agriculture, 2006)

<http://www.agriculture.gov.sk.ca/Default.aspx?DN=9d0653b7-9839-42e5-9a72-c5f678834165>

- Enterprise Guide for Southern Maryland: Straw Production (University of Maryland)

<http://extension.umd.edu/publications/PDFs/FS449.pdf>

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*Photos by Matt Barton, UK Ag Communications Services (harvesting bales) and Cheryl Kaiser, University of Kentucky (straw bales)*

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For additional information, contact your local [County Extension](#) agent