

# Grain Sorghum

## Introduction

Grain sorghum (*Sorghum bicolor*), commonly called “milo,” is used primarily as a feed grain for livestock. Sorghum stubble makes excellent roughage following harvest and can be used for pasture. Grain sorghum can also be made into silage, although forage sorghums are usually used for this purpose.

## Marketing and Market Outlook

A chief problem in producing grain sorghum in Kentucky is finding a market. Growers will need to locate a cash grain outlet before harvest, or plan to use the crop for feed on the farm. The majority of grain sorghum grown in Kentucky is in the Paducah and Green River areas and is sold to a buying station across the Ohio River.

Grain sorghum commands a slightly lower price per pound than corn and, therefore, generally cannot compete with corn. Because grain sorghum is more drought-tolerant than corn, sorghum acreage may temporarily increase the year following a drought.

## Production Considerations

### *Site selection and planting*

Grain sorghum does best on deep fertile soils; however, it can be grown satisfactorily on most soil types as long as there is sufficient fertility and moisture. The month of May is normally the optimum time to plant in order to get good seedling emergence and expected yields. Sorghum can be planted later than corn and is an option for fields that dry



slowly in the spring. Sorghum can be planted with a corn planter or grain drill.

Sorghum can withstand hot, dry conditions better than corn or soybeans, and it has also demonstrated more ability than corn to withstand excessive moisture. Grain sorghum grown in a rotation usually produces higher grain yields than when grown continuously. The crop rotation plan needs to be considered carefully because, while sorghum follows other crops readily, not all crops follow sorghum successfully.

### *Pest management*

Insects of potential importance include sorghum midge, corn earworm, fall army worm, sorghum webworm, European corn borer and aphids. Several types of diseases attack grain sorghum, including seed rots and seedling blights, leaf diseases, smuts and root and stalk rots.

Early weed control is important since sorghum seedlings are slow in growing and poor competitors with weeds. The tool box of herbicides for grain sorghum is very small,



and pre-plant or pre-emergence herbicides are a necessary component of the weed control program. In addition, grain sorghum seed may need to be treated to provide safety from some herbicides. Sorghum that is planted in small fields, near trees or buildings may be vulnerable to bird damage. Bird-resistant varieties are available and these should be planted if a bird problem is anticipated.

#### *Harvest and storage*

Grain sorghum is usually harvested with a combine using a slow cylinder speed to reduce problems with the grain cracking. This crop should be harvested as early as possible after maturity. Harvest-aid treatments may also be used to hasten grain drying in the field. Prior to storage, the grain will need to be dried by using either a heated or natural air drying system. Sorghum will require more drying time than corn.

#### *Labor requirements*

Labor needs for producing and harvesting conventional tillage grain sorghum averages 4½ hours per acre.

### **Economic Considerations**

Producing grain sorghum has a low profitability potential, although, depending on yield and price, there is at least a possibility of generating some profit. Initial investments include land

preparation and purchase of seed. Production costs for grain sorghum are estimated at \$175 per acre. Total expenses per acre, including both variable and fixed costs, are approximately \$220. The table below lists various estimated returns based on University of Kentucky 2005 budget information.

### **Selected Resources**

- Field Crop and Forage Enterprise Budgets for Kentucky (University of Kentucky, 2005)  
[http://www.ca.uky.edu/cmsspubsclass/tinymce/jscripts/tiny\\_mce/plugins/filemanager/files/adreum/budgets/archivedbudget/2006fieldcrop\\_budget.xls](http://www.ca.uky.edu/cmsspubsclass/tinymce/jscripts/tiny_mce/plugins/filemanager/files/adreum/budgets/archivedbudget/2006fieldcrop_budget.xls)
- Grain and Forage Crop Guide for Kentucky, AGR-18 (University of Kentucky, 2007)  
<http://www.ca.uky.edu/agc/pubs/agr/agr18/agr18.pdf>
- Harvesting, Drying and Storing Grain Sorghum (University of Kentucky, 2003)  
<http://www.ca.uky.edu/agc/pubs/aen/aen17/AEN17.pdf>
- Kentucky Integrated Pest Management Manual for Grain Sorghum (University of Kentucky, 1993)  
<http://www.uky.edu/Agriculture/IPM/manuals/ipm5sorg.pdf>
- Grain Sorghum Handbook (Kansas State University, 1998)  
<http://www.oznet.ksu.edu/library/crps12/c687.pdf>

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### **Grain Sorghum Return to Land, Capital and Management at Various Prices and Yields (2006)**

<b>\$/bushel</b>	<b>Bushels per acre</b>					
	<b>75</b>	<b>80</b>	<b>85</b>	<b>90</b>	<b>95</b>	<b>100</b>
<b>2.20</b>	-69.90	-56.90	-43.90	-30.90	-17.90	-4.90
<b>2.30</b>	-62.40	-48.90	-35.40	-21.90	-8.40	5.10
<b>2.40</b>	-54.90	-40.90	-26.90	-12.90	1.10	15.10
<b>2.50</b>	-47.40	-32.90	-18.40	-3.90	10.60	25.10

The break even price of \$1.94 per bushel is needed to cover the variable costs of producing 90 bushels per acre.

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*Photo courtesy of Morris Bitzer, University of Kentucky*

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