UK COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Sweet Sorghum for Syrup

Introduction

Sweet sorghum is grown for syrup or forage. The syrup is made from the juice of the plant's crushed stalks. The extracted juice is then cooked down to a thick, sticky sorghum syrup, which is sometimes incorrectly referred to as sorghum molasses.

Marketing and Market Outlook

Kentucky is one of eight states in the Southeast and Midwest producing about 90% of the total U.S. sorghum syrup output. Sweet sorghum syrup produced in 2004 was worth over $12 million and yet the current acreage is estimated to be just over one-half of Kentucky's potential.

Growers need to find their own market outlets, whether this means locating a processor for their canes or determining market outlets for the syrup. In some cases, the syrup for an entire community is processed at a central plant that is owned by an individual, corporation, or cooperative. The majority of Kentucky growers, however, process their own syrup. Processing and production is risky without a marketing plan.

Potential syrup markets include roadside stands, farmers markets, on-farm sales, local retailers, and the Internet. While the market in some areas of the state has become fairly saturated, there is the potential of marketing sorghum at farmers markets in the Cincinnati and Louisville areas, as well as those in Paducah and Hopkinsville. The big market potential, however, is in the eastern and western United States. The marketability of sorghum in such states as Texas, New Mexico, California, and Florida is currently being investigated.

Production Considerations

New hybrid available

The University of Kentucky has recently released the first ever sweet sorghum male-sterile hybrid and named it 'KN-Morris.' This vigorous hybrid yields 25% more juice than other cultivars, resulting in more syrup. In addition, the lack of seed formation means the crop has better standability in windy locations and experiences less lodging. Seed of this hybrid will be available from the Kentucky Foundation Seed Project in time for the 2009 growing season.

Site selection and planting

In general, loam and sandy loam soils are best for the growth of sweet sorghum for syrup production. However, most of the well-drained silt loams in Kentucky will produce excellent sweet sorghum when properly fertilized. Clayey soils usually produce poor stands, poor yields, and poor syrup. Soils high in organic matter are also thought to have a detrimental effect on syrup quality. Sweet sorghum should not be grown on land following a tobacco crop; however, you can successfully grow it following corn or soybeans.

NEW CROP OPPORTUNITIES CENTER

Sorghum tolerates drought and high temperature stress better than many crops, but it does not grow well under low temperatures. The optimum time to plant sweet sorghum in Kentucky is from May 1 to May 20 for the full-season varieties and before June 10 for the earlier maturing varieties. Sorghum can be direct-seeded or transplanted using the tobacco float system.

Pest management

Kentucky's major sweet sorghum diseases are leaf anthracnose, red stalk rot, and maize dwarf mosaic virus. Control of these diseases is mainly through the selection of resistant varieties and crop rotation. Insects do not usually cause a serious problem on sweet sorghum in Kentucky. There are no herbicides currently registered for use on sorghum, making cultivation the best way to control weeds. Fields heavily infested with Johnsongrass and Bermudagrass should not be planted to sorghum.

Harvest and storage

The stalks may be harvested by hand; cut with a mower or binder and picked up; or mechanically cut and squeezed in the field. The seed head and peduncle should be removed either ahead of time with a mechanical deheader; by hand shortly after cutting the stalk down; or with a chain saw after the stalks are loaded on a wagon. If leaves are removed, stripping should be done while the stalks are standing. When leaves are not removed, they should be allowed to dry before squeezing the juice from the stalks.

Labor requirements

Labor needs for sorghum production is estimated at nearly 4½ hours per acre. Harvest requires approximately 60 hours per acre for hand cutting and deheading. The use of a corn binder to cut the stalks can reduce this harvest time to 25 hours per acre, while mechanical harvesting will further reduce the harvest time to less than 10 hours per acre. An additional 20 hours per acre will be needed if the canes are stripped before they are cut; however, the majority of Kentucky growers do not strip the canes.

Economic Considerations

Although the acreage in Kentucky is small, sweet sorghum constitutes a meaningful cash crop for most of its producers. Updates (2005) for changes in labor and fuel costs from the University of Georgia's 1999 estimates show total fixed and variable costs between $696 to $944 per acre, depending on the harvest method. A yield of 150 gallons per acre will be needed to break even for all variable and fixed costs. The average yield for sweet sorghum is 175 gallons per acre; however, yields can go as high as 200 to 300 gallons per acre. With sorghum syrup selling for $20 to $25 per gallon, net profits of more than $2,000 per acre are possible with higher yields.

More Information

- National Sweet Sorghum Producers and Processors Association
  http://www.ca.uky.edu/NSSPPA
- Processing Sweet Sorghum for Syrup in Kentucky, AGR-123 (University of Kentucky, 2000)
  http://www.ca.uky.edu/agc/pubs/agr/agr123/agr123.htm
- Production of Sweet Sorghum for Syrup in Kentucky, AGR-122 (University of Kentucky, 1994)
  http://www.ca.uky.edu/agc/pubs/agr/agr122/agr122.htm
- Growing Sweet Sorghum for Syrup (University of Georgia, 1999)
  http://www.ces.uga.edu/Agriculture/agecon/pubs/sweetsorg.htm
- Sorghum for Syrup (University of Wisconsin and University of Minnesota, 1990)
  http://www.hort.purdue.edu/newcrop/afcm/syrup.html
- Sweet Sorghum Culture and Syrup Production, ANR-0625 (Alabama Cooperative Extension)
  http://www.aces.edu/pubs/docs/A/ANR-0625/ANR-0625.html