



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

# Dry Beans

## Introduction

Dry beans (*Phaseolus vulgaris*) are beans grown to maturity and harvested for the seeds within the pods. Also referred to as field beans, dry beans are primarily grown in the U.S. for human consumption.

## Marketing and Market Outlook

Per capita use of dry beans averages 6 to 7 pounds. This amount may increase in the future due to the larger Latino populations, heightened consumer awareness of potential health benefits, and the increase in foodservice usage.

Approximately 20% of United States' dry bean production is exported. Top destinations are Mexico, Canada, and the United Kingdom. Despite being the sixth largest dry bean producing country, the U.S. imports 17% of dry bean consumption. Top suppliers are Canada, Mexico, and China.

Dry beans are typically grown under contractual agreements with a processor. Additionally, some users (i.e., canners) have used spot markets. Since the contracts are not stable for multi-year periods, growers should carefully develop their marketing plans before they decide to produce dry beans. Quality issues often are addressed with the use of payment bonuses.

Although production costs are higher than soybeans, the same can be true for gross returns,



assuming that an appropriate market is identified. As a result of lower production, dry bean prices have increased. Considering that dry bean prices do not correlate with soybean and corn prices, including them in the production mix might help spread price risk.

## Production Considerations

### *Plant and cultivar selection*

The most popular dry beans in the U.S., based on per capita consumption, are pinto, navy, great northern, red kidney, and black. Adzuki, garbanzo (chickpea), and lima beans are also familiar to many consumers. There are a large number of lesser-known types (e.g. such as anasazi, cannellini, and cranberry beans) that could be grown for specialty niche markets. UK Extension specialists believe most dry bean types could potentially be grown in Kentucky; unfortunately, there is insufficient research data to recommend the types that are best suited for our region. Local county Extension personnel and other dry bean growers may be able to provide guidance to potential growers. New growers should start small; larger plantings should not be

attempted until the crop has been evaluated over several seasons and the grower has test-marketed their product. When grown under contract for wholesale markets, the buyer specifies the cultivars to be grown.

### *Site selection and planting*

Dry beans are a warm-season crop and are not planted until all danger of frost has passed. Well-drained soils are preferred; dry beans do not tolerate heavy clay or waterlogged soils. While seed can be inoculated with nitrogen-fixing bacteria, additional applications of nitrogen fertilizer may be needed to help meet season-long nitrogen needs. To optimize quality and yield, dry beans should be irrigated to supplement rainfall.

### *Pest management*

Dry beans are susceptible to a number of diseases that can result in crop losses, including common blight, rust, halo blight, *Rhizoctonia* root rot, *Pythium* root rot, rust, anthracnose, white mold, and bean common mosaic virus. Selecting resistant cultivars and following good management practices can help reduce the impact of disease problems. However, it is likely that fungicides will be needed, especially if dry beans receive sprinkler irrigation. Potential insect pests include bean leaf beetle and stinkbugs. Aphids and whiteflies can also serve as vectors for virus diseases. Regular scouting to monitor populations helps the grower determine when and how often insecticides should be applied. Dry beans compete poorly with weeds; however, a combination of herbicides, cultivation, and a good rotation system can help manage weedy vegetation.

### *Harvest and storage*

Dry beans are harvested when a majority of pods are yellow, typically when moisture content is at 16 to 20 percent. Equipment used to harvest soybeans can be used for harvesting bush-type cultivars. Vine-type cultivars require different machinery for harvest. Drying to less than 18 percent moisture for storage is accomplished

with or without heat. Storage facilities need to be dry, clean, and free from rodent and insect pests. Some buyers may require that beans be polished for the edible market.

### *Labor requirements*

Labor needs per acre are approximately 2 hours for production, 2 to 4 hours for harvest and 1 to 2 hours (or more) for packing and grading. These labor estimates may be slightly higher for small acreages and if harvesting equipment is not available.

### **Economic Considerations**

Initial investments include land preparation, purchase of seed, and installation of an irrigation system.

Many production costs for dry beans are similar to that of soybean. Exceptions include costs for irrigation and greater expenses for nitrogen and pesticides associated with dry bean production. Operating costs are approximately \$450 to \$500 per acre, including these higher costs. Ownership costs for dry bean production are approximately \$80 to \$120 per acre. In addition, producers may incur added costs due to the variety selected and/or disease problems that may occur.

The economics of dry beans is hard to estimate due to widely fluctuating bean prices and varying production costs, resulting in profits that are highly variable. Dry beans could potentially return \$180 to \$270 to land and management per acre at the average expected price for 2013 (\$40 per hundredweight) and with a yield averaging 2,000 pounds per acre. However, they could also return less than \$50 per acre in years with lower prices. Due to increased conventional row crop prices, dry bean production is currently not an especially promising economic prospect for Kentucky growers considering them as a more profitable alternative crop. Dry beans could potentially be added to a crop mix in western Kentucky, but a buyer and quality specifications should be lined up before production.

## Selected Resources

- Alternative Field Crops Manual: Fieldbean (University of Wisconsin and University of Minnesota, 1990) <http://www.hort.purdue.edu/newcrop/afcm/fieldbean.html>
- Center-Pivot-Irrigated Dry-Edible Bean Cost-Return Budget in Western Kansas, MF-999 (Kansas State University, 2007) <http://www.ksre.ksu.edu/bookstore/pubs/mf999.pdf>
- Dry Bean Breeding and Genetics (Michigan State University) <http://bean.css.msu.edu/>
- Dry Bean Production Guide, A-1133 (North Dakota State University, 2013) <http://www.ag.ndsu.edu/publications/landing-pages/crops/dry-bean-production-guide-a-1133>
- Dry Beans (USDA-ERS, 2012) <http://www.ers.usda.gov/topics/crops/vegetables-pulses/dry-beans.aspx>
- Dry Edible Beans (AgMRC, 2013) [http://www.agmrc.org/commodities\\_\\_products/grains\\_\\_oilseeds/dry-edible-beans/](http://www.agmrc.org/commodities__products/grains__oilseeds/dry-edible-beans/)
- Dry Edible Bean Profile (AgMRC, 2011) [http://www.agmrc.org/commodities\\_\\_products/grains\\_\\_oilseeds/dry-edible-bean-profile/](http://www.agmrc.org/commodities__products/grains__oilseeds/dry-edible-bean-profile/)
- Dry Edible Beans (Jefferson Institute, Missouri, 1999, available through the Purdue University Center for New Crops & Plant Products) <http://www.hort.purdue.edu/newcrop/articles/ji-beans.html>
- Economic Issue with Dry-Edible Beans, MF-2533 (Kansas State University, 2001) <http://www.ksre.ksu.edu/bookstore/pubs/MF2533.pdf>
- US Dry Bean Council <http://www.usdrybeans.com/resources/production/>

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*Reviewed by Chad Lee, Extension Specialist (Issued 2002, Revised 2005, Revised 2009, Revised 2013)*  
*Photos: USDA Grain Inspection, Packers and Stockyards Administration (GIPSA)*

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

**January 2014**