



# Heirloom Vegetables

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## Introduction

Heirloom vegetables are vintage varieties that have been preserved by passing seed down from generation to generation. These varieties are generally 50 to 100 years old, although many are much older. All heirlooms are open-pollinated and usually breed true-to-type. Heirlooms were often selected for flavor potential and eating quality before vegetable breeding emphasized hybrid varieties bred for uniformity in size, shape and ripening, as well as for durability in shipping.

## Marketing

Heirloom vegetables have long been featured at Kentucky farmers markets, where heirloom crops are presented as part of a total product offering including other high-quality in-season crops. Labeling produce as heirlooms, offering samples to taste, and providing free recipes are some ways to attract customers and boost sales. For information about offering samples at Kentucky farmers markets, Kentucky Farm Bureau Certified Roadside Markets and on-farm markets, see the Kentucky Department of Agriculture's Kentucky Farmers Market Manual and Resource Guide and additional resources at <http://www.kyagr.com/marketing/farmers-market.html>. Heirloom varieties are also very suitable for marketing through community supported agriculture (CSA) shares. Disease-free heirloom seeds can be sold through farmers markets, garden clubs, agricultural expositions, gardening conferences, and the internet. Growers who sell seed in Kentucky are required to be registered and/or permitted by the Seed Regulatory Program. Permits cost \$25 and are good for one year. Seed should undergo germination testing. Kentucky citizens may submit one seed sample per year



ZAPOTEC PLEATED HEIRLOOM TOMATOES

for a free test. For details regarding permits, labeling requirements and germination testing, please see Selected Resources at the end of this document. For information about regulations regarding the interstate shipment of vegetable seeds, visit <https://www.ams.usda.gov/rules-regulations/fsa>.

Potential wholesale markets include local restaurants, food co-ops and health food stores. Larger volume wholesale markets are more difficult to access, as many heirloom vegetables are not suitable for storage and long distance transport. However, some heirloom tomatoes have been shipped short distances in recent years with special packaging.



Finally, producers can often maximize profitability from producing heirloom crops by expanding the market beyond produce. Sales of seed, transplants, and even value-added products (such as dry bean soup mixes) can diversify

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an heirloom enterprise and spread the producer's risk away from relying solely on fresh product sales. Savvy managers and marketers may also find ways to profit from their knowledge of specialty crops through agritourism opportunities (such as on-farm workshops), speaking engagements, and other ways of sharing their knowledge and expertise of heirloom vegetables.

## Market Outlook

Demand for heirloom vegetables increased with the growth in local food marketing and with growth in consumer interest in unique flavors and a connection to food heritage. Heirloom vegetables were also among the top ten restaurant trends reported for 2017 by the National Restaurant Association. While many vegetable crops are available as heirloom varieties, tomatoes, beans, squash and cucumbers are the most popular. Heirloom melon varieties have also sold well. Quality heirloom root crops, such as sweetpotatoes, are good farmers market sellers in some areas of Kentucky. Other storage crops, like pumpkins and winter squash, have also proved popular with farmers market customers and may help growers extend the sales season. Heirloom seeds and transplants are also highly marketable. Prices have remained strong as heirloom varieties have increased in popularity with consumers.

More intensive production requirements for heirloom crops may continue to limit their supply, but there is also a potential for prices to drop if the supply exceeds demand. Producers should gather as much information as possible about the potential market for heirlooms, as well as production considerations, before investing in production.

## Production considerations

### Seed sources

Heirloom seed may be obtained from commercial seed suppliers, through seed exchanges, and/or as "handed-me-downs" from previous generations. Thereafter, heirloom growers usually save their own seed from desirable varieties. Maintaining seed purity is essential to saving seed. This can be accomplished by isolating varieties of the same crop by distance and/or time of bloom. Some small-scale growers use blossom covers on mostly self-pollinated crops to prevent unwanted crosses. Seed should be harvested from several vigorous, disease-free plants of each variety.

Processing after harvest can include fermenting the seed mass in water prior to drying on screens or wire mesh. Seeds need to be stored in air-tight containers in a cool, dry location, or in a freezer. Properly stored, some seeds may be maintained for several years without significant loss in germination.

### *Site selection and planting*

Choose a site that is well-drained and warms up quickly in the spring. Avoid low-lying fields that are subject to late frosts and high humidity. Cold-sensitive crops should not be planted until all danger of frost has passed and the soil has warmed sufficiently. Transplants can be grown in a greenhouse structure or hotbed, both for direct sales or on-farm use.

Begin with small plantings of unfamiliar crops/varieties, both to assess whether the cultivar will grow well in your situation and to determine marketability. Growers more familiar with hybrids may find that certain heirlooms require changes in production practices. For example, most heirloom tomatoes are indeterminate and will need taller stakes and wider row spacing than hybrids. Since the majority of heirloom beans are climbers, they will require the construction of a trellis for support before the plants begin to produce runners.

Some crops require a continuous supply of moisture, especially during fruit-set and development. University of Kentucky research has reported greater yields, increased earliness, and a cleaner harvest when growing most vegetable crops on raised beds with black plastic and drip irrigation. The moisture levels under the plastic must be carefully monitored when using this system.

### *Pest management*

Disease and insect pressure may or may not be greater for heirlooms than it is for modern hybrids, depending on the season and cultivar. However, heirlooms rarely have resistance to many current day diseases, thus growing practices that stress disease avoidance are essential. Many heirloom vegetables are grown organically or with a minimum of pesticides. Integrated pest management (IPM) strategies, including frequent scouting to monitor pests, may be needed to prevent or reduce losses. Controlling weeds, following a good rotation system, and the use of beneficial insects can aid in pest control.

### *Harvest and storage*

Heirloom varieties, which tend to have staggered ripening dates, are handpicked at their peak. Yields are completely cultivar-dependent and can range from prolific to sparse. Some researchers report that heirloom yields may be less reliable than today's hybrids and that there are often more culls. A tendency toward a shorter shelf-life dictates that many heirlooms be sold within a few days of harvest, thus, little storage time is needed. On the other hand, because root crops store well for longer periods, there is less urgency to market them after harvest.

Some of the more fragile heirloom crops, such as tomatoes, will require special care to avoid bruising. To reduce handling, tomatoes may be picked directly into shallow, single-layer cushioned crates, boxes, or other containers used to transport the fruit to market.

### *Labor requirements*

Most heirloom crops are standbys from days before mechanical harvest and require hand harvesting to maintain quality. In addition, heirlooms are frequently more fragile and perishable than modern hybrids, requiring additional labor in handling. Producers who are saving their own seed will also incur additional labor which may be valued as much or more than their savings on seed. While heirloom crops may require anywhere from 10 to 40 percent additional labor time, many producers report the extra effort is currently compensated by higher prices.

### **Economic considerations**

Heirlooms may yield a higher percentage of cull fruit, deteriorate more rapidly after harvest, and require additional handling for effective marketing. These factors often translate into higher retail prices at urban markets. However, heirloom crops are attractive to customers who value quality, flavor and heritage, and these buyers are generally less concerned about pricing issues. It is not uncommon for heirloom varieties to retail for prices much higher than commercial hybrids. Heirloom tomatoes, for example, have sold for twice the price of hybrid varieties in both retail and wholesale markets. Similarly, greasy bean varieties have retailed for five to six times the price of commercial machine-picked beans farmers markets throughout the Appalachian states. In contrast, some Kentucky producers have found it difficult to move heirloom varieties in local rural markets at premiums

sufficient to justify the additional labor required.

Heirloom producers must remember that higher prices do not automatically translate into greater profits. Additional operator/owner labor in producing, harvesting, marketing (particularly in areas unfamiliar with heirlooms), and saving seed are also costs for heirloom production. While these may be non-cash expenses, the value of the producer's time must not be overlooked.

Specialty crop producers should only seek those enterprises that yield reasonable returns for their time. A well-prepared budget projection that includes all production costs will better enable prospective growers to evaluate heirloom crops against other uses of their resources. Useful vegetable budget worksheets for the type of small-scale vegetable production commonly used in heirloom plots has been developed by Iowa State University and North Carolina State University (refer to Selected Resources, below).

### **Selected Resources**

#### *On the Internet*

- Vegetable Production Guide for Commercial Growers, ID-36 (University of Kentucky)  
<http://www.ca.uky.edu/agc/pubs/id/id36/id36.htm>
- Heirloom Beans (Sustainable Mountain Agriculture Center, Inc., 1998)  
<http://www.heirlooms.org/heirloom-beans.html>
- Heirloom Seed-Saving Demonstration (Kentucky State University, 2009) <http://organic.kysu.edu/Heirloom.shtml>
- The Need for Seed: A Guide to Seed Saving by Brook Elliott (Victory Seed Company, 2000)  
[http://www.vintageveggies.com/information/brook\\_seed\\_saving.html](http://www.vintageveggies.com/information/brook_seed_saving.html)
- North Carolina Farm School Small Scale Budgets (2016) <https://ncfarmschool.ces.ncsu.edu/small-scale-budgets/>
- Place-Based Foods of Appalachia (Southern SARE, 2011) <http://www.southernsare.org/Educational-Resources/SARE-Project-Products/Books-Manuals-and-Training-Guides/Place-Based-Foods-of-Appalachia>
- Specialty and Heirloom Tomato Production and Marketing 1995-1998 (Ohio State)  
<https://southcenters.osu.edu/sites/southc/files/site-library/site-documents/HORT/vegetables/tomatoes/heirloom-tomato-1998.pdf>

- Vegetables and Fruits: A Guide to Heirloom Varieties and Community-based Stewardship (USDA National Agricultural Library, 1999)  
<https://www.nal.usda.gov/afsic/heirloom-varieties>
- Heirloom Tomato Budget in Vegetable Production Budgets, PM2017 (Iowa State University Extension, 2006) 1 MB file <https://store.extension.iastate.edu/Product/12219>

*University of Kentucky Division of Regulatory Services Seed Department*

- Kentucky Revised Statutes and Administrative Regulations <http://www.rs.uky.edu/seed/law/index.php>

*Statutes*

- 250.041(10) (c) (d) Labeling requirements  
<http://www.lrc.ky.gov/Statutes/statute.aspx?id=45020>
- 250.051(1) (b) Permit requirements for providing your own labels <http://www.lrc.ky.gov/Statutes/statute.aspx?id=45021>
- 250.091 Annual free test for Kentucky citizens  
<http://www.lrc.ky.gov/statutes/statute.aspx?id=12091>

*Administrative regulations*

- 1:140 Permits, reports, and fees for persons using own tags <http://www.lrc.state.ky.us/kar/012/001/140.htm>

- 1:165 Germination standards for vegetable seed  
<http://www.lrc.state.ky.us/kar/012/001/165.htm>

*Additional resources from the UK Division of Regulatory Services Seed Department*

- Seed Laboratory Tests and Pricing  
<http://www.rs.uky.edu/seed/ServiceTesting/index.php>

For additional information from the Division of Regulatory Services, visit <http://www.rs.uky.edu/seed/>, or call 859-218-2468.

*Organizations*

- Appalachian Heirloom Seed Conservancy, Box 519, Richmond, KY 40476, email: [KentuckySeeds@hotmail.com](mailto:KentuckySeeds@hotmail.com)
- Seed Savers Exchange <http://www.seedsavers.org>
- Sustainable Mountain Agriculture Center, Inc.  
<http://www.heirlooms.org>

*Books in print*

- Heirloom Vegetable Gardening. William Woys Weaver. 1997. Henry Holt & Co.: New York, New York. 439 pp.
- Seed to Seed, 2nd edition. Suzanne Ashworth. 2002. Seed Savers Exchange: Decorah, Iowa. 320 pp.

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