University of Kentucky
College of Agriculture,
Food and Environment
Cooperative Extension Service

Center for Crop Diversification Crop Profile
CCD-CP-86

Baby Vegetables

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Introduction

Baby (petite, miniature, mini) vegetables are smaller versions of full-sized produce. Many baby vegetables are simply standard cultivars that are harvested at an immature stage (e.g. baby corn), while some cultivars have been genetically developed to produce miniature vegetables (e.g. cherry tomatoes). Smaller vegetables produced from secondary buds after the initial full-sized crop has been harvested can also be sold as baby vegetables (e.g. broccoli).

Marketing

Potential market channels for Kentucky-grown baby vegetables include restaurants, food retailers and direct markets. High-end or white tablecloth restaurants, as well as restaurants featuring locally produced food, may be more likely to consider sourcing baby vegetables from Kentucky farms. Specialty food stores, including specialty grocers, are another likely market channel. Caterers and food service establishments may also be interested in mini vegetables. Direct retail markets where consumers show interest in baby vegetables include farmers markets, roadside stands, roadside markets, and community supported agriculture (CSA).

Baby vegetables have several distinctive marketing appeals to consumers. Flavors can be more intense in baby vegetables, appealing to consumers seeking new taste experiences. Smaller versions of bulky crops, such as melons, may be of interest to consumers with smaller families or with less food storage space. Baby vegetables can be promoted to consumers who entertain frequently, because many mini vegetables are used in hors d'oeuvres and as garnishes. Baby greens, especially those packaged as spring greens and mesclun mixes, are in high demand as a convenient, ready-to-eat product. Microgreens, also marketed as "vegetable confetti," are smaller than baby greens and usually harvested at the first leaf stage. Microgreens have become popular with some chefs and consumers for garnishing and adding flavor to foods.

Market Outlook

Baby vegetables first became a trend in the fine dining sector where they were used as garnishes, and in salads, side dishes, and appetizers. However, the popularity of these miniature crops soon spread to the general public. Baby vegetables, which are often seen as "cute" and novel, have potential for Kentucky producers willing to seek out

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appropriate markets.

Baby vegetables are often harvested at an immature stage, making them more perishable than traditional vegetables harvested at physiological maturity. As a result, baby vegetables do not ship well and have a short shelf life. This is to the advantage of the local producer who can provide fresher product than out-of-state sources. Commercial shippers of baby vegetables emphasize seasonality, with baby vegetables often featured in the early spring months. According to the University of Florida, some microgreens are delivered to chefs in the grow trays or mats, and restaurant personnel then cut their own greens for freshness.

Production considerations

Crop selection and cultivar selection

A large number of vegetables of all types can be raised and marketed as baby vegetables. Spring mixes are a blend of several types of baby greens with different color, shapes, textures, and flavors. These might include lettuces, endive, radicchio, arugula, spinach, Brassicas, and herbs. Other popular baby vegetables include beans, beets, carrots[1], corn, leeks, onions, peas, potatoes, summer squash, and tomatoes (e.g. small grape varieties). Growers can select varieties of standard vegetables or, when available, choose specialty cultivars that yield miniature produce. Begin with small plantings of unfamiliar crops/varieties, both to assess whether the cultivar will grow well in your situation and to determine marketability.

Site selection and planting

Baby vegetables can be grown in an open field, high tunnel, or greenhouse. For open field production, choose a well-drained, weed-free location in full sun. Avoid low-lying fields that are subject to late frosts. Cold-sensitive crops should not be planted until all danger of frost has passed and the soil has warmed sufficiently.

High tunnels and greenhouses provide a protective environment for crops, often resulting in a higher quality product. These structures also help extend the growing season, which can provide growers with a marketing advantage. High tunnels and greenhouses may also be used for transplant production, providing another means of getting a head start on the season.

Many baby vegetables are grown in a similar manner to their full-sized counterparts. Plants that reach full-size during fruiting, such as beans, melons, and squash, are planted in rows at spacings recommended for standard production. These crops can be grown for their immature produce only, or as a dual-purpose crop that yields both immature and fully mature vegetables. Other crops, such as leafy vegetables (e.g. baby spinach), as well as some root crops (e.g. carrots) are broadcast seeded at higher planting densities to maximize land usage. These crops will be harvested before overcrowding becomes an issue. Spacing of specialty dwarf cultivars will depend on the final size of the plant.

Many crops will require supplemental moisture, especially during fruit-set and development. This is most efficiently accomplished using a trickle irrigation system. Carefully planned successive plantings will be necessary when a consistent product supply is desirable.

Pest management

Insect and diseases will differ depending on the crop, cultivar, and production method. The short cropping history of many baby vegetables will make a difference in the type of diseases and insects that make their appearance. The early harvest may make it possible to avoid some disease and insect issues entirely. On the other hand, multiple (successive) plantings of the same crop can also result in the build-up of disease inoculum and insect populations, with greater impact on later plantings.

The early harvest can make it impossible to apply some fungicides and/or insecticides when these chemicals have a long post-harvest interval. Following good cultural and integrated pest management practices are essential to success.

Harvest and storage

The time from planting to harvest will be much reduced when harvesting immature vegetables. Size and stage of maturity at harvest will vary, depending on crop, flavor, and market demand. Growers must pay close attention to each crop's stage of development because vegetables can mature beyond the "baby stage" very quickly. Frequent harvests will be necessary so crops do not mature past the desired stage.

Baby vegetables will need to be handled carefully to

avoid bruising these tender young crops. Post-harvest handling may include cooling to remove field heat and/or washing to remove field soil and debris. Proper refrigeration and relative humidity will be needed for short-term storage.

Labor requirements

Labor requirements for immature vegetables will often be equal to or greater than labor for mature vegetables of the same variety. This is because of more intensive production requirements and, often, more perishable produce with intensive handling requirements.

As an example, baby corn production will require the same or slightly less production and harvest (picking) labor time than regular sweet corn. Post-harvest labor needs for baby sweet corn, however, will add significant labor time due to the need for more specialized packing and handling. This is especially true when a miniature vegetable crop is being evaluated for production alongside crops for traditional harvest.

Economic considerations

Initial investments include land preparation, purchase of seed or transplants, and installation of an irrigation system. Higher volumes of baby vegetables may require the purchase of specialized packaging and postharvest handling equipment.

Economic returns from baby vegetable production can be highly variable and dependant on the variety and volume of production as well as the market price. For example, a 100-foot bed of specialty baby greens/baby lettuce, sold at prices equivalent to $25 to $50 per pound, could bring a sales amount more than three to five times the returns from a 100-foot bed of lettuce salad mix. Farms raising baby vegetables should usually seek a higher price per pound, compared to mature vegetables, to cover higher labor times and greater postharvest handling costs.

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[1]The "baby" carrots sold at many large supermarkets are actually "mini-cut" carrots that have been carved from large processing carrots and polished by machine. True baby carrots are grown and harvested as an immature product.

Selected Resources

- Baby Corn, CCD-CP-85 (University of Kentucky, 2017) http://www.uky.edu/ccd/sites/www.uky.edu.ccd/files/babycorn.pdf
- Hydroponic Greenhouse Production of "Baby" Squash: Selection of Suitable Squash Types and Cultivars (University of Florida, 2005) http://hos.ufl.edu/protectedag/pdf/SHAWHTbabysquash05.pdf
- Microgreens, CCD-CP-104 (University of Kentucky, 2012) http://www.uky.edu/ccd/sites/www.uky.edu.ccd/files/microgreens.pdf
- Microgreens: A New Specialty Crop (University of Florida, 2016) http://edis.ifas.ufl.edu/pdffiles/HS/HS116400.pdf
- Specialty Vegetables, in Commercial Vegetable Production Recommendations for New Jersey (Rutgers, 2016) http://njaes.rutgers.edu/pubs/commercialvegrec/specialty-vegetables-herbs.pdf
- Spring Mix – An Emerging Crop for Florida (University of Florida, 2010) http://edis.ifas.ufl.edu/ss535

Suggested Citation:

Kaiser, C. & M. Ernst (2017). *Baby Vegetables*. CCD-CP-86. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: http://www.uky.edu/ccd/sites/www.uky.edu.ccd/files/babyveggies.pdf

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Miniature bell pepper photo courtesy of John Stommel, USDA-ARS; baby carrots photo courtesy of Nanao Wagatsuma, Wikimedia Commons

April 2017