

## Bush and Pole Bean Production in Miami-Dade County, Florida<sup>1</sup>

---

Y.C. Li, W. Klassen, M. Lamberts and T. Olczyk<sup>2</sup>

### Situation

Beans are important traditional vegetable crops in Miami-Dade County with acreages varying between 3,600 and 13,400 acres during 1980-1996. Yields averaged about 175 to 300 bushels/acre. The production cost in 1999-2000 was approximately \$13.5 per bushel or \$2,700/acre for an acceptable yield of 200 30-pound bushels/acre. Beans produced in Miami-Dade County are sold for the fresh market nationwide during the winter and spring months.

### Varieties

Refer to the Vegetable Production Guide for Florida (SP170) for variety selection. The major varieties currently grown in Miami-Dade County are the bush beans: Opus, Leon, Mirada, Seville, and Golden Rod, and the pole beans: McCaslan 242 and to some extent Genuine.

### Soils, Land Preparation and Planting

Beans in Miami-Dade County are grown mainly on gravelly soils (Krome or Chekika soil series) or a mixture of gravelly soils and marl soils. At the present time, beans are rarely grown on marl soils, because these soils are at low elevations, and prone to flooding. Traditionally beans are not planted on raised beds, but better yields can be obtained on raised beds than on flat land, especially on flood-prone soils.

The planting season extends from September into February. Bush beans are planted with 18 –36 inches between rows and 2-4 inches between plants within the row. Pole beans are planted with 30-40 inches between rows and 3-5 inches between plants within the row. All pole beans are supported on a trellis system. The trellis consists of a wire about 4 feet above the ground fastened to a post at each end of the field and midway between rows. Six-foot long canes of bamboo are leaned from the base of each plant to

- 
1. This document is HS-853, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Revised: April 2006. Reviewed July 2009. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu/>. This document is written specifically for growers in Miami-Dade County as a supplement to Vegetable Production Guide for Florida (SP170) ([http://edis.ifas.ufl.edu/MENU\\_CV:VEGPROD](http://edis.ifas.ufl.edu/MENU_CV:VEGPROD)). We thank many colleagues, growers and representatives from seed and chemical companies and grower services for reviewing the document.
  2. Y. C. Li, Professor, Tropical Research and Education Center, Homestead, FL; W. Klassen, Professor Emeritus, Tropical Research and Education Center, Homestead, FL., Mary Lamberts, Extension Agent IV, Miami-Dade County Extension, Teresa Olczyk, Extension Agent IV, Miami-Dade County Extension, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Millie Ferrer, Interim Dean

the wire in the middle of the aisle. Each pole bean plant climbs along a cane.

## Fertilizer

Calibrated soil tests for the calcareous soils of Miami-Dade County are not available at present. Therefore, tissue analysis can be used to determine the composition and rates of fertilizers to be applied. Instructions for tissue sample collection, preparation and submission are provided in Plant Tissue Information Sheet (SL-131), which is available from the Miami-Dade County Cooperative Extension Service. Information on plant tissue analysis for beans is provided in the Vegetable Production Guide for Florida (SP170). Preplanting fertilizer formulas of 4-4-8, 5-5-8, 6-3-12, 6-12-12, or similar formulas are satisfactory. Liquid or dry nitrogen and potassium fertilizer should be used as side dressings. The total amount of fertilizer required in Miami-Dade County depends on the variety, soil fertility, and other environmental factors. Less inorganic fertilizer should be applied if a cover crop or soil organic amendments has been used. Magnesium nitrate or sulfate and iron sulfate should be applied foliarly if deficiency symptoms appear.

## Irrigation and Freeze Protection

Low-volume in-line, pivot, or big gun systems can be used for bean irrigation. A tensiometer installed at a 6-inch depth can be used for irrigation scheduling. Optimal plant growth and yields are achieved when the soil moisture is maintained at tensiometer readings between 10 to 15 cbars. The Miami-Dade County Cooperative Extension Service provides relevant information and calibration services for tensiometers.

Bean has no frost resistance. Freeze injury occurs when temperatures drop to 28 °F for 30-45 minutes.

## Insect Management

Refer to the Vegetable Production Guide for Florida (SP170) for extensive information on insect control. Major pests include silverleaf whitefly, thrips Palmi, leafminers, armyworm, looper, and bean leaf roller. Currently all major insect pests except thrips

can be controlled with available insecticides, however only a few of the insecticides are effective, and all of these are expensive.

## Disease Management

Refer to the Vegetable Production Guide for Florida (SP170). Major diseases include rhizoctonia, bacteria, alternaria, rust, and viruses.

## Weed Management

Refer to the Vegetable Production Guide for Florida (SP170).

## Harvest

The harvest season extends from November to the middle of April. Beans are harvested by hand or by mechanical harvester. Mechanical harvesting is labor efficient but results in losses of 10-15 percent of the pods. It also causes higher postharvest losses because of broken pod ends.

## Multiple Cropping/Rotation

Since bean is a 55-67 days crop, several successive crops can be planted and harvested during the season. Bean can be rotated with squash, boniato, cucumber, tomato, or eggplant.