
Evaluation of Six Basil Cultivars Grown in a Vertical Hydroponic Production System inside a Greenhouse 99-06Robert C. Hochmuth¹, Lei Lani Leon²**Introduction**

Specialty crops are in higher demand every year in Florida. These crops provide opportunities for farmers to intensively produce high value crops on small acreage and in greenhouses. Specialty crops, such as herbs, are frequently marketed directly to consumers or restaurants. Basil is the most popular of the herbs and this trial was conducted to evaluate six cultivars inside a greenhouse.

Material and Methods

This trial was conducted inside a 22 x 60 ft double poly greenhouse at the Suwannee Valley Research and Education Center near Live Oak, FL. Seed of six basil cultivars were seeded into transplant flats to produce a 1.5 inch plug transplant. Transplants were planted on August 17, 1998 into a vertical hydroponic production system, Verti-Gro™. This system consists of a tower of interlocking stackable styrofoam pots. For this trial, a tower of eight pots in each stack was used. Pots were filled with perlite and transplants were established in the four corners of each pot. This resulted in 32 plants per cultivar in each tower. The trial was a nonreplicated (observational) design. Each tower was fertigated with four emitters in the top pot and two emitters in the middle pot. The pots have holes in the bottom so solution goes down through each pot and is collected at the bottom. A complete hydroponic nutrient solution was delivered several times daily to meet crop needs.

Basil was harvested 12 times between September 24 and January 13 and fresh weights were taken. Harvest weights were recorded for each cultivar.

Observations

The Verti-Gro™ production system worked very well for the production of basil. Standard hydroponic nutrient solution recommended in Florida for greenhouse tomato

¹ Robert C. Hochmuth, Multi-County Extension Agent, Suwannee Valley Research and Education Center, Live Oak, FL 32060

² Lei Lani Leon, Lab Technician, Suwannee Valley Research and Education Center, Live Oak, FL 32060

(Hochmuth, 1990) worked very well for basil. The only change was an increase in magnesium from 40 to 80 ppm Mg.

The green-leaf basil cultivars produced similar yield in the range of 6.8-10.4 ounces per plant over a period of about 15 weeks of harvest (Table 1). The two purple leaf basil cultivars, 'Purple Ruffles' and 'Osmin' produced lower yields of only 3.1 and 4.9 ounces per plant, respectively. The best quality among the green-leaf cultivars was found in 'Genovese' and 'Genovese Compact'.

Table 1 - Yield of six basil cultivars grown in a greenhouse in a vertical hydroponic system.

Cultivar	Seed Source	Leaf Color	Yield (oz/plant)
Italian Longleaf	Johnny's Selected Seed	Green	6.8
Genovese	Johnny's Selected Seed	Green	8.9
Purple Ruffles	Johnny's Selected Seed	Purple	3.1
Osmin	Johnny's Selected Seed	Purple	4.9
Genovese Compact	Johnny's Selected Seed	Green	7.5
Mammoth	Johnny's Selected Seed	Green	10.4
