



—Scientific Note—

Exploring Pumpkin Varieties for Northeast Florida Production

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The Tri-County Agricultural Area (TCAA) within Northeast Florida is primarily composed of potatoes, cabbage, and sod, with agricultural acreage dwindling due to development, and tight profit margins from traditional crops. Small and large-scale farmers need alternative crops to sustain their livelihoods, since the increasing costs of materials and stricter regulations has limited the profitability of traditional crops. Specialty crops with high value and lower costs of production could help keep farmers in business, while creating a food systems effort alongside local chefs. Currently, pumpkins (*Cucurbita spp.*) are not a major part of Florida’s commercial agricultural landscape, despite the plethora of fruits and vegetables produced throughout the state. Northern states (e.g., Illinois and Pennsylvania) are better suited for cucurbit production due to reduced environmental stressors compared to those observed in Florida (e.g., high precipitation events, disease and insect pressure, and poorly drained soils). The goal of this demonstration was to plant six cucurbit varieties in the summer (mid to late July) for Halloween or Thanksgiving markets.

Materials and Methods

A variety demonstration was planted at the UF/IFAS Hastings Agriculture and Education Center–Cowpen Branch Road Research Facility in Hastings, St. Johns County, FL. The half-acre trial was planted on Holopaw fine sand on July 2020. There were

no blocks or replicates. This was simply a demonstration of six varieties (ranging from miniature to large in size and cookability).

The field was prepped with a fumigation treatment 15 days prior to planting. One variety was planted per single, 420-ft-long row. Pretreated seeds were purchased from Seedway, apart from ‘Seminole’ which was sourced from Southern Exposure Seed Exchange. The varieties selected included two ornamentals (‘Baby Pam’ and ‘Jill-Be-Little’) and four edible varieties (‘Jarrahdale’, ‘La Estrella’, ‘Marina di Chioggia’, and ‘Seminole’). Each variety was direct seeded (triple-drilled) every 32 inches in-row on reflective plastic mulch (80-inch row centers) with double-line drip irrigation. The plot received a 4–8–4 CRF pre-plant, followed by six weeks of fertigation with 8–0–8 for a total seasonal application of 160 lb N, 50 lb P₂O₅ and 160 lb K₂O per acre. Seedlings were later thinned by hand to a single plant every 32 inches in-row. Insects and diseases were monitored throughout the season. A rotation of one insecticide and one fungicide was used every other week.

Results and Conclusions

Harvest began on 1 Oct. 2020 for the smaller varieties, such as ‘Jill-Be-Little’ and ‘Seminole.’ Every marketable and matured pumpkin fruit was harvested within 300’ of the 420’ long row. Varieties were weighed in bulk, and up to 10 individual fruit weights, along with total fruit counts by variety were done (Fig. 1). Unfortunately, the field had an irrigation leak on 13 Oct. 2020 that caused the field to be flooded with standing water for approximately five days. The larger varieties, ‘Jarrahdale’, ‘La

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Variety	Yield by fruit count <small>per 300-ft long row</small>	Yield by weight (lb) <small>per 300-ft long row</small>	Yield per acre (lb)	Average weight per fruit (lb)	Weight ranges (lb)
La Estrella	296	1310	11,266	4.43	1.05 - 6.06
Seminole	565	975	8,385	1.73	0.69 - 3.94
Jarrahdale	178	1497	12,874	8.41	6.06 - 11.63
Marina Di Chioggia	115	817	7,026	7.10	4.31 - 12.44
Baby Pam	202	237	2,038	1.17	1.06 - 1.68
Jill-Be-Little	669	230	1,978	0.34	0.18 - 0.56

Fig. 1. Comparisons of pumpkins for northeast Florida.

Estrella' and 'Marina di Chioggia,' were unable to fully mature prior to retrieving them from the flooded field.

Pie-type pumpkins are marketed as small or medium fruits in 24-inch bins, or 1 1/9-bushel cartons. Although the Florida's heirloom 'Seminole' was the only untreated seed, it still had impressive fruit production with 565 fruits in 300 feet of row length, averaging 5.6 fruits per plant. 'Jill-Be-Little' exceeded that volume, but the miniature types also produce more fruits per vine. Even without reaching full maturity, 'Jarrahdale' produced the greatest weight of fruits at 1497 lb within the plot, and proved to be the most highly desired by culinary judges based on color, flavor, and ornamental uses. Both 'Marina di Chioggia' and 'Jill-Be-Little' exceeded the expectations of fruit weights by the seed company, even though these two were of the least interest by the surveyed farmers and public.

Suggestions for Future Studies

While pumpkin production is currently limited in Northeast Florida, with the expansion of agritourism and desire for locally produced pumpkins, there is great opportunity to explore pumpkin as a feasible alternative crop for the region. Since the demonstration, two small farmers within the TCAA have since incorporated pumpkins into their rotation. Local chefs are especially excited about edible and heirloom types, which will be the focus of the 2021 variety trial. Although the integrated pest management program was not intended to be a major focal point of the demonstration, with proper cultural practices we can grow pumpkins with few pesticide inputs in the near future.