Eggplant Evaluations: 2023 Research Report

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An eggplant cultivar evaluation was initiated in 2023 at the University of Maine's Highmoor Farm in Monmouth, ME. Production potential of 12 eggplant cultivars were compared to update Italian-type eggplant cultivar recommendations for commercial growers.

Figure 1. Eggplant harvested from cultivar evaluations at University of Maine's Highmoor Farm in Monmouth, ME in 2023.

Planting

Eggplant seeds were sown in flat trays filled with Pro-Mix BX with Mycorrhizae media on May 3 (58 days before transplanting) and kept on heating mats at 75 ˚F for 12 days, until germination plateaued. Seedlings were fertilized with 1 Tbsp/gal of Jack's Professional 9-45-15 Plant Starter soluble fertilizer on May 12 (9 days after seeding). When trays were removed from heating mats, seedlings were pricked out individually into 50-cell trays at one seed per cell.

Beds were fertilized with 500 lb/ac of 10-10-10 fertilizer and harrowed on May 31 (30 days before transplanting), which was greatly delayed by extreme precipitation. Field work was able to continue by June 25, when beds were shaped and covered with 1.5 mil biodegradable black plastic. A single row of drip tape was laid under each bed. On June 26, Gramoxone and Duel Magnum were applied at label rates as preemergent herbicides. Seedlings were transplanted by hand on June 30 (58 days after seeding) after a rolling dibbler was used to mark a single row of holes every 15". Each plot contained 12 plants. The trial was designed as a single factor replicated complete block design with four blocks of 12 cultivars each (Table 1).

Table 1. Attributes of 12 eggplant cultivars evaluated at University of Maine's Highmoor Farm in Monmouth, ME in 2023.

Cultivar	Color	Hybrid Status	Available Organic
Annina	graffiti	F_1	✓
Black Beauty	purple	OP	
Classic	purple	F_1	
Epic	purple	F_1	
Galine	purple	F_1	
Gaudi	purple	F_1	✓
Ghost Story	white	F_1	
Megal	purple	F_1	
Nadia	purple	F_1	
Picasso	purple	F_1	
Thanos	purple	F_1	
Traviata	purple	F_1	✓

Weeds were controlled by hand and with a flame weeder throughout the growing season. Colorado potato beetle was picked from plants by hand August 10 (41 days after transplanting), and Asana XL was applied at label rates to further control insect pests four days later.

Data Collection

Eggplant were harvested seven times, weekly from September 6 to October 16 (68 to 108 days after transplanting). From each plot, marketable fruit were harvested and separated into two classes: A) fruit with no blemishes and in excellent condition were classified as fancy for retail and wholesale markets, whereas B) fruit of good but not excellent visual quality were deemed suitable for marketing directly to consumers. The number and weight of fruit in each class were recorded for all plots at every harvest. Fruit that were not marketable were also harvested and weighed, with reasons for culling noted.

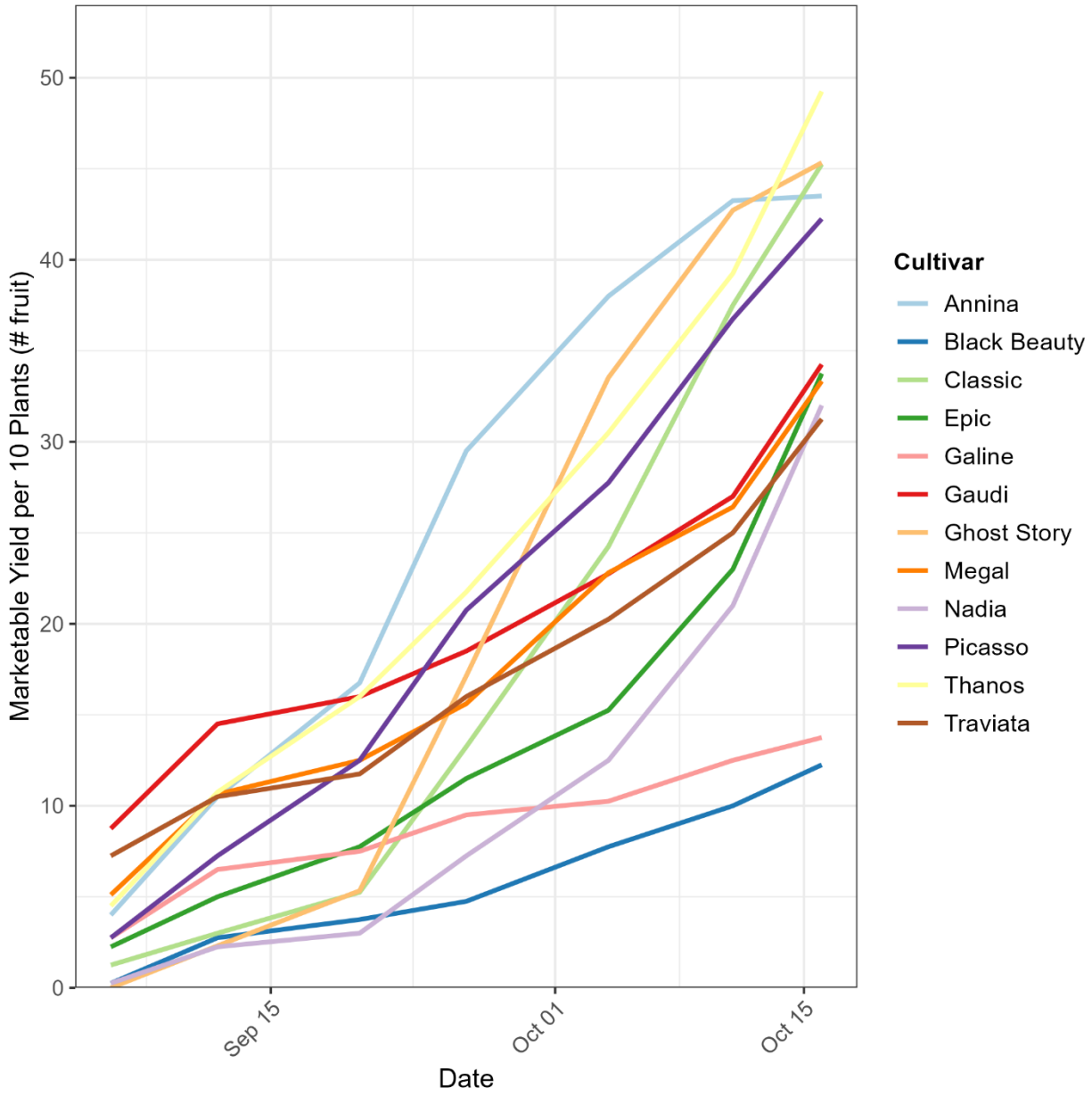

Figure 2. Cumulative marketable yield of 12 eggplant cultivars grown at University of Maine's Highmoor Farm in Monmouth, ME in 2023.

Results

Early yields were predominated by Annina, Gaudi, and Thanos (Fig. 2). Yields of all cultivars except Black Beauty increased sharply at the third harvest on Sep 20 (82 days after transplanting). Thanos produced the greatest marketable yield over the season with nearly five marketable fruit per plant and a very low cull rate (Table 2). Annina, Classic, and Picasso produced the largest quantity and weight of high-quality, fancy fruit that would be suitable for retail or wholesale markets.

Table 2. Cumulative yield parameters of 12 eggplant cultivars grown at University of Maine's Highmoor Farm in Monmouth, ME in 2023.

Cultivar	Fancy		Total Marketable		Avg Fruit Wt (lb)	Unmarketable Fruit (%)
	number fruit[a]	weight (lb)	number fruit	weight (lb)		
Annina	13.75 a[b]	7.33 ab	43.50 ab	22.10 abc	0.52 abc	32 ab
Classic	13.00 a	7.86 a	45.25 ab	27.73 ab	0.61 ab	16 b
Picasso	12.75 a	8.20 a	42.25 ab	26.95 abc	0.63 ab	18 b
Thanos	8.00 ab	5.55 ab	49.25 a	29.94 a	0.61 ab	16 b
Megal	5.78 ab	2.40 ab	33.33 ab	12.28 abc	0.37 c	31 ab
Nadia	5.50 ab	3.14 ab	32.00 ab	15.82 abc	0.49 bc	22 b
Gaudi	4.75 ab	2.35 ab	34.25 ab	17.22 abc	0.50 bc	29 ab
Epic	3.75 ab	2.54 ab	33.75 ab	17.84 abc	0.52 abc	26 ab
Traviata	2.50 ab	1.33 b	31.25 ab	16.75 abc	0.53 abc	25 b
Ghost Story	2.25 b	1.43 b	45.33 ab	23.85 abc	0.51 bc	33 ab
Black Beauty	2.00 b	1.18 b	12.25 b	7.85 c	0.59 ab	38 ab
Galine	2.00 b	1.44 b	13.75 b	9.29 bc	0.71 a	61 a

[a] Yield data are for 10-plant plots.

[b] Values in a column with no shared letters indicate a difference between cultivars at $p < 0.05$.

Black Beauty and Galine consistently yielded poorly despite large fruit size, largely because of the large number of unmarketable fruit each produced. Galine was especially prone to thrips damage, frequently resulting in severe blossom end scarring (data not shown). As is common with plants that produce light-skinned fruit, Ghost Story, a white-fruited cultivar, was prolific. However, it also produced a significantly smaller quantity of fancy fruit than top-yielding cultivars due to scarring and cracking.

Notably, Megal produced small, slender fruit while all other cultivars produced eggplant that weighed about or more than ½ pound each. Galine produced the largest fruit, and Classic, Picasso, and Thanos were also all relatively large. Annina, Nadia, and Gaudi were all relatively small-fruited, but produced eggplant of excellent quality.

Annina

- Strong, vigorous, bushy plants
- Mid-season producer
- Petite fruit
- Spineless green calyx
- Refined, relatively uniform shape
- Excellent color and gloss
- Organic seed available

Black Beauty

- Short, upright plant
- Spiny, green calyx
- Mid-season producer; low yields
- Good color and gloss
- High variability in shape and size
- OP heirloom variety

Classic

- Strong, very vigorous plant
- Spiny leaves and calyxes
- Mid-late season producer
- Refined, uniform shaped fruit are large with classic teardrop shape
- Excellent color and gloss

Epic

- Upright plants are easy to harvest
- Spiny green calyx
- Mid-late season producer
- Teardrop to cylindrical shape is fairly uniform
- Almost black color, fair gloss

Galine

- Strong, vigorous plants
- Spiny leaves and calyxes
- Early to mid-season producer; low yields
- Green calyx
- Fruit more attractive at small size
- Fair color and gloss
- Tendency to scar at blossom end

Gaudi

- Upright plants are easy to harvest
- Early producer, continuous fruit set
- Spineless green calyx
- Fair uniformity
- Very dark, almost black color
- Bulbous teardrop shape
- Organic seed available

Ghost Story

- Large, bushy plants with prolific foliage makes harvest difficult
- Mid-late season producer
- Creamy white skinned cultivar
- Continuous fruit set
- Mostly spineless green calyx
- Variable shape and size
- Somewhat slab-sided
- Fair field-holding with seeds that are relatively slow to develop

Megal

- Tall, spindly plants
- Green calyx
- Long (7-9”) Italian type
- Can be harvested small
- Long fruit can contact ground, resulting in pest and disease problems
- Good dark color and gloss
- Colors early

Nadia

- Strong, tall plants
- Late-season producer
- Spiny, green calyx
- Uniform, refined shape
- Excellent color and gloss

Picasso

- Vigorous, prolific plants
- Mid-season producer with continuous fruit set
- Spineless green calyx
- Refined, uniform shape holds well in field
- Excellent color and gloss
- Harvests easily

Thanos

- Large, strong plants
- Spineless, green calyx
- Florida highbush type produces large, blocky fruit high on plant
- Early producer with continuous fruit set and large fruit makes for large yields
- Good color, fair gloss

Traviata

- Erect plants
- Spineless, green calyx
- Variable shape and size
- Very dark color with low gloss
- Organic seed available

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