

Dumpling Squash Evaluations: 2025 Research Report

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A dumpling squash trial was initiated in 2025 at the University of Maine’s Highmoor Farm. The purpose of the evaluations was to evaluate the productivity and quality of ten dumpling squash cultivars. *Cucurbita pepo* winter squash breeding has progressed over the last several years to include shapes, skin colors, and flesh qualities that fall across the acorn to dumpling spectrum rather than distinctly within either category. The ten cultivars included in this study were chosen to compare type standards and new varieties in this broadening category.

Field Trial Methods

Squash were seeded into 50-cell trays filled with ProMix BX + Mycorrhizae media on May 30, and transplanted by hand on Jun 27 (one month after seeding). Plants were grown on raised beds covered with biodegradable black plastic mulch with 22” between plants. Each plot contained six plants, and the trial included five replications. Plants were fertigated by hand approximately weekly throughout the growing season using 1 Tbsp/gal of Jack’s Professional 12-45-10 Plant Starter soluble fertilizer.

Fruit were harvested on Sep 17, 82 days after transplanting. The number and weight of each fruit was recorded for each plant, and fruit that were visibly undersized were deemed culls.

Squash Quality Assessments

After yield data were collected, two sets of five fruit for each cultivar were set aside for later quality evaluations. The first set was cured for 5.5 weeks and then subjected to measurements, while the second set was cured for 9.5 weeks before evaluation.

Fruit quality was assessed using two quantitative methods – dry matter and soluble solids content – as well as a blind tasting. Dry matter was measured by boring three cores from fruit, collecting fresh weights, and drying samples at 140 °F until a stable weight was achieved. Soluble solids, a measurement of sweetness, was determined by boring three cores, and then freezing, thawing, and pressing samples to measure °Brix of sap on a handheld refractometer. Samples for the blind tasting were prepared by roasting slices of fruit. Evaluators ranked the appearance, texture, and flavor of each sample on a scale of 1 (poor) to 5 (excellent).

Results

Transplanting coincided with a heat wave at the start of a season-long drought, so overall yields were low and do not reflect optimal production. Still, clear trends and differences between cultivars were detected and future years' research are expected to reveal which cultivars perform consistently.

Cultivars produced yields ranging from 0.4 to 1.4 lb marketable fruit per plant (Fig. 1). Carnival and Heart of Gold produced significantly greater yield by weight than Sweet Dumpling, and Carnival additionally outyielded Harlequin. Plants produced 0.5 (Sweet Dumpling) to 1.3 (Sweet Lightning) fruit per plant, but there was no significant difference between cultivars. Carnival and Heart of Gold were the largest-fruited cultivars (1.2 lb), greater than Goldilocks, Harlequin, Sweet Dumpling, Sweet Lightning, and Ugly Dumpling (all less than 1 lb).

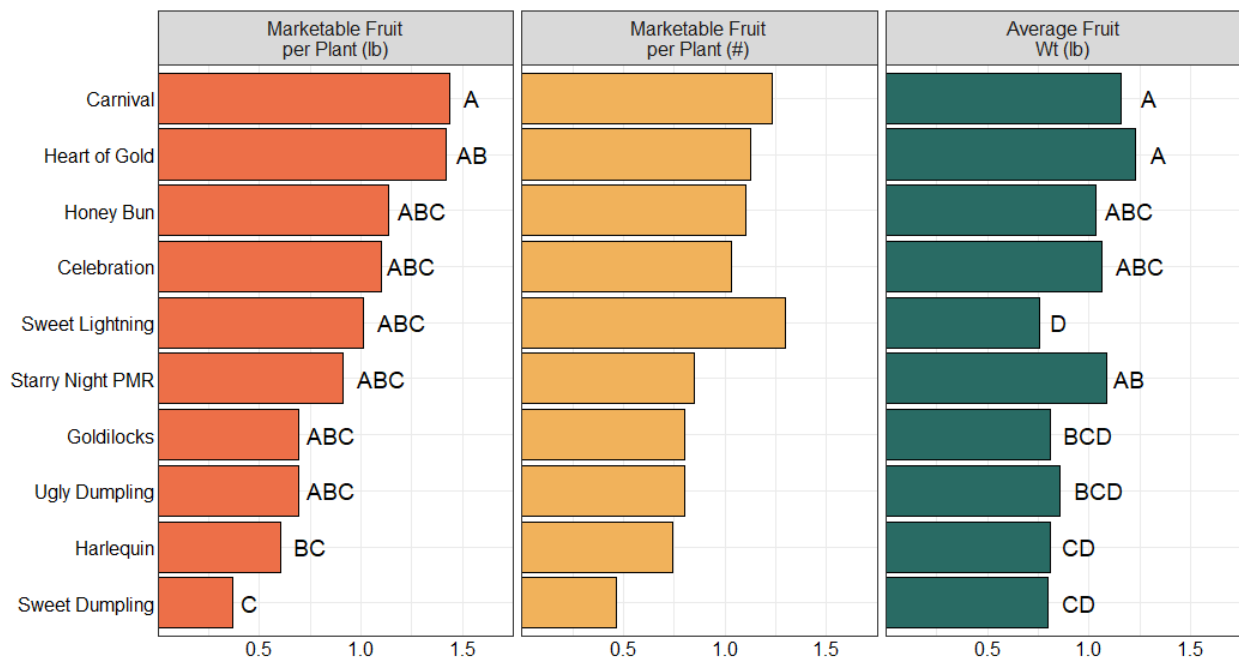


Figure 1. Marketable yield parameters of ten dumpling squash cultivars grown at University of Maine's Highmoor Farm in Monmouth, ME in 2025. Cultivars that do not share letters are different at $p < 0.05$.

Goldilocks had a greater cull rate than Carnival, Heart of Gold, and Carnival (61% compared to less than 15%; Fig. 2). This was driven almost exclusively by undersized fruit and likely contributed to Goldilocks' poor yield. Harlequin and Sweet Dumpling also had high cull rates and correspondingly low marketable yields.

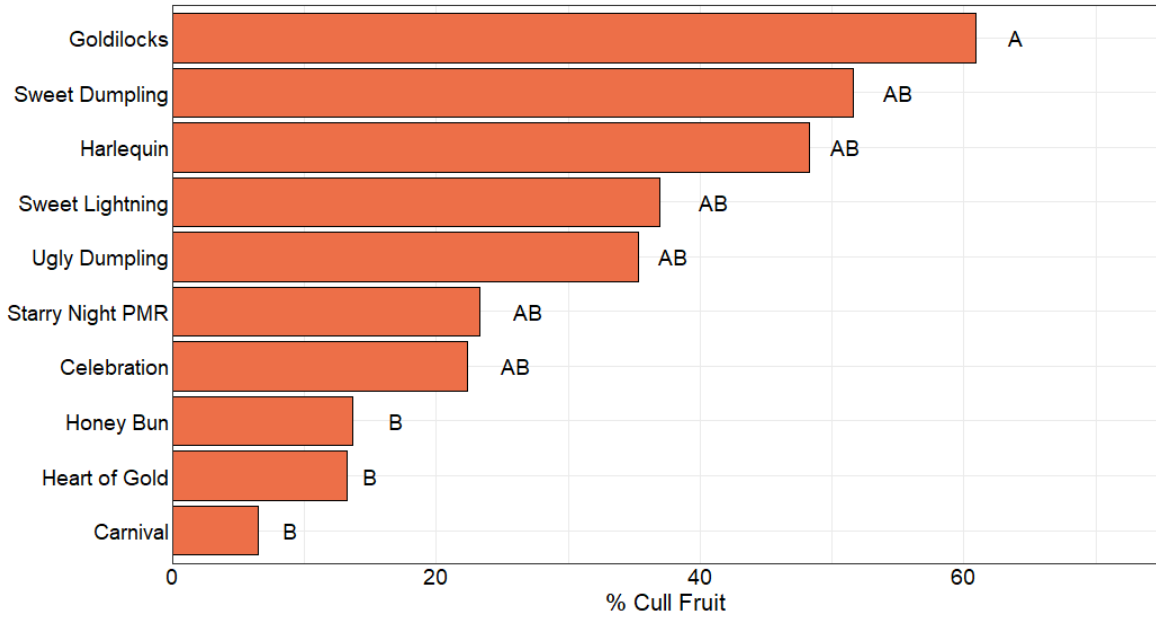


Figure 2. Cull rates of ten dumpling squash cultivars grown at University of Maine’s Highmoor Farm in Monmouth, ME in 2025. Cultivars that do not share letters are different at $p < 0.05$.

No quality metric varied significantly by curing length, so data in Figures 3 and 4 are aggregated across both cure times. Dry matter did not vary significantly by cultivar but ranged from 9.1% (Goldilocks) to 13.9% (Starry Night PMR; Fig. 3). Greater dry matter is typically associated with better texture and eating quality. Similarly, Starry Night PMR had greater soluble solids than Goldilocks, as did Ugly Dumpling and Sweet Dumpling (> 13 °Brix compared to 7.1 °Brix).

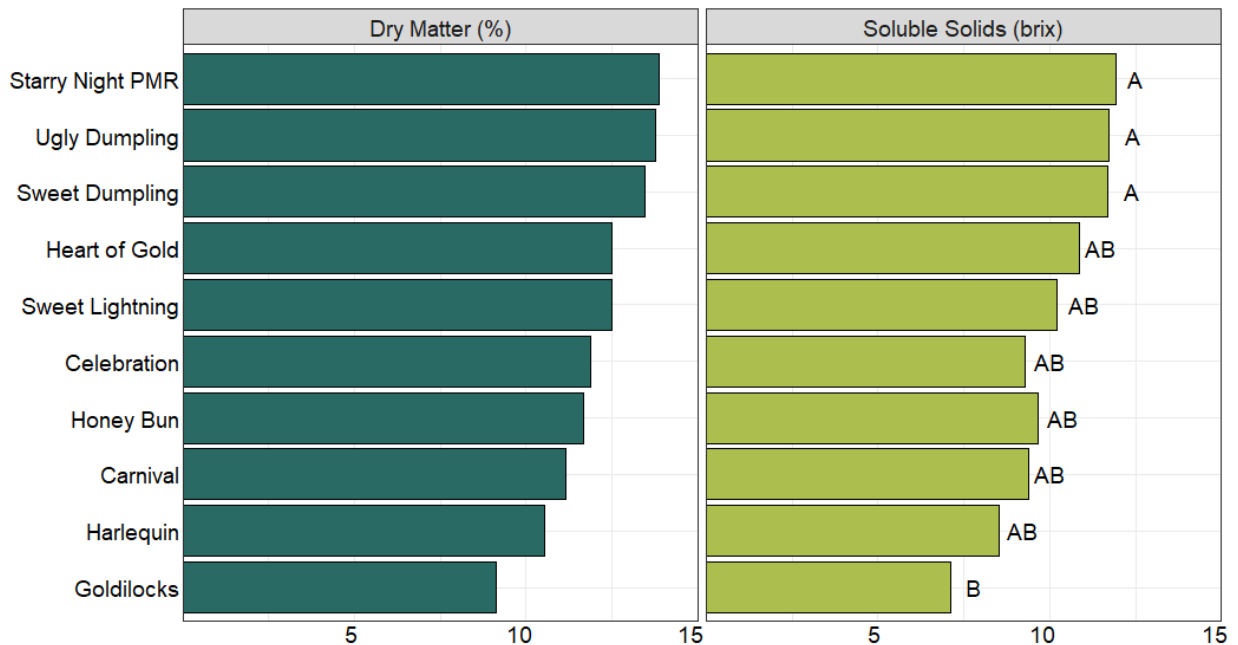


Figure 3. Fruit quality metrics of ten dumpling squash cultivars grown at University of Maine’s Highmoor Farm in Monmouth, ME in 2025. Cultivars that do not share letters are different at $p < 0.05$.

In a blind tasting, Starry Night PMR, Sweet Lightning, and Ugly Dumpling were all preferred over Honey Bun and Goldilocks overall (Fig. 4). This was closely linked to flavor and texture ratings, while ratings of appearance were more varied.

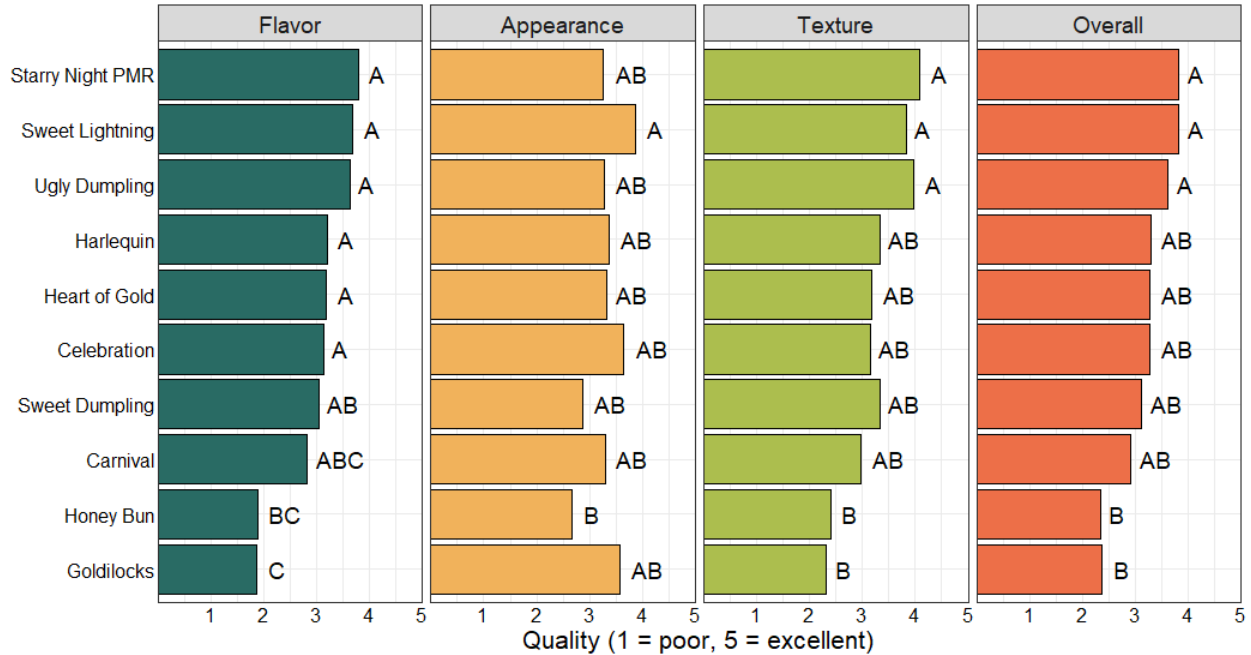








Figure 4. Eating quality metrics of ten dumpling squash cultivars grown at University of Maine’s Highmoor Farm in Monmouth, ME in 2025. Cultivars that do not share letters are different at $p < 0.05$.

2025 Research Summary

- Starry Night PMR, Sweet Lightning, and Ugly Dumpling had the best eating quality of the ten cultivars trialed and provide a choice between large and small fruit size preferences.
- Carnival and Heart of Gold – both large-fruited varieties – were both top-yielding cultivars and had fair eating quality.
- Goldilocks was relatively low yielding with high cull rates and poor eating quality.
- Harsh growing conditions in 2025 severely impacted plant growth and more favorable weather in future trial years may improve yield and fruit quality. Still, those cultivars with fair yields and good quality in 2025 should be noted for their adaptability.

Cultivar Notes from 2025

Carnival		
		<ul style="list-style-type: none">- Standard for its colorful acorn-type class, from Harris Seeds- Large 1 - 1¼ lb fruit and very low cull rate- High yielding- Subpar eating quality- Firm, stringy texture- Lacking in flavor and sweetness
Celebration		
		<ul style="list-style-type: none">- Rupp Seeds variety in 'Carnival' class- Fair yields and low cull rate- Slightly smaller fruit (still 1+ lb) than Carnival; better color expression in heat- Fairly uniform size and appearance- Dense, smooth texture early in fall became mealy with another month in storage
Goldilocks		
		<ul style="list-style-type: none">- Earthwork Seeds edible/ornamental variety- High cull rate with many undersized fruit; low yields- Poor eating quality; stringy texture and unpleasant flavor

Harlequin		
		<ul style="list-style-type: none"> - Rupp Seeds variety - Relatively low yields due to small fruit size ($\frac{3}{4}$ lb) and high cull rate - Cute teacup shape - Good flavor with midclass ranking for overall quality
Heart of Gold		
		<ul style="list-style-type: none"> - Rupp Seeds variety with chunky 1$\frac{1}{4}$ lb fruit - Low cull rate, high yielding - Good uniformity - Mixed reviews on flavor did improve with curing time
Honey Bun		
		<ul style="list-style-type: none"> - Johnny's Selected Seeds variety - High-yielding, large fruit, low cull rate - Large, blocky 1 lb fruit - Fairly uniform - Poor flavor, texture, and appearance ratings despite midclass dry matter and soluble solids content

Starry Night PMR



- Johnny's Selected Seeds variety
- Closest to true acorn appearance of all cultivars in trial
- Dark, large 1+ lb fruit with yellow streaking gives appearance with mixed reviews
- Medium-low yields but excellent, high-ranking eating quality
- Driest flesh with greatest soluble solids content

Sweet Dumpling




- Standard in the dumpling class, from Sakata
- Classic blocky, squat dumpling shape
- Small $\frac{3}{4}$ lb fruit and high cull rate, low yields
- Fair dry matter and soluble solids but mixed liking

Sweet Lightning



- Rupp Seeds variety with potential as edible-ornamental
- Very small ($\frac{3}{4}$ lb) and squat fruit with the most productive plants in terms of fruit number
- Buttery texture, high-ranking for quality

Ugly Dumping	
	<ul style="list-style-type: none"> - Rupp Seeds dumping variety - Pear shape with small to medium size (¾ - 1 lb) - Relatively low yielding - Very dry flesh with high soluble solids content - In top 3 for eating quality; notable improvement with additional month of storage

Acknowledgements

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