Jalapeno Pepper Trial Report, Grady County, Georgia - 2025

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Objective

The objective of this study was to evaluate the performance of five jalapeno (*Capsicum annuum* L.) cultivars under field conditions in Grady County, Georgia, during 2025.

Material & Methods

The trial consisted of five commercially available jalapeno cultivars, namely 'Megatron,' 'Orizaba,' 'Soundwave,' 'SV 5816,' and 'Unicron.' Field evaluations were conducted in Grady County, GA, in 2025 under standard production practices for the region. The cultivars were arranged in a randomized complete block design with replicated plots.

Harvests & Data Collection

Fruit were harvested three times over the course of the production season as pods reached marketable maturity. At each harvest, fruit were sorted into marketable and unmarketable (cull) categories based on commercial grading standards. Marketable fruits were uniform, mature, and free from defects, including disease symptoms, insect damage, cracking, or malformation, whereas unmarketable fruits exhibited defects that rendered them unsuitable for fresh-market sale.

Statistical Analysis

Data were analyzed using analysis of variance (ANOVA), and means were separated using Tukey's HSD test at the 95% confidence level when ANOVA indicated significant differences ($P \leq 0.05$). All analyses were conducted using JMP Pro version 17 (SAS Institute Inc., Cary, NC, USA).

Results

Table 1: Yield and fruit characteristics of five jalapeno pepper varieties in the 2025 Grady trial.

Variety	Total count[i] (no/plot)	Total yield[ii] (lbs)	Length[iii] (inches)	Width[iv] (inches)
Megatron	157 b[v]	20.5 a	4.1 b	1.7 ab
Orizaba	187 ab	19.9 a	4.5 ab	1.4 d
Soundwave	202 a	23.6 a	4.1 b	1.5 cd
SV 5816	186 ab	23.2 a	4.1 b	1.6 bc
Unicron	158 b	23.7 a	4.9 a	1.8 a
***P* value**	0.0434*	0.1798	0.0002*	<.0001*

[i]Total count: marketable count + unmarketable count.

[ii]Total yield: marketable weight + unmarketable weight.

[iii]Length: average of 5 fruits per plot.

[iv]Width: average width of 5 fruits per plot.

[v]Means followed by the same letter are not significantly different based on Tukey's HSD test at the 95% confidence level.

Table 2: marketable and unmarketable yield components of five jalapeno pepper varieties in the 2025 Grady trial.

Variety	Marketable count (no/plot)	Marketable weight (lbs)	Unmarketable count (no/plot)	Unmarketable weight (lbs)
Megatron	144 b[i]	19.1 a	13 ab	1.4 ab
Orizaba	179 ab	19.3 a	8 b	0.7 b
Soundwave	196 a	23.2 a	6 b	0.6 b
SV 5816	165 ab	20.7 a	21 a	2.5 a
Unicron	147 b	22.2 a	11 b	1.5 ab
***P* value**	**0.0145***	**0.1667**	**0.0035***	**0.0026***

[i]Means followed by the same letter are not significantly different based on Tukey's HSD test at the 95% confidence level.

Table 3: Marketability percentages of five jalapeno pepper varieties in the 2025 Grady trial.

Variety	Percent marketable[i] (%)	Percent cull count[ii] (%)
Megatron	92.0 bc[iii]	8.0 ab
Orizaba	95.7 ab	4.3 bc
Soundwave	97.0 a	3.0 c
SV 5816	88.5 c	11.5 a
Unicron	93.0 abc	7.0 abc
***P* value**	**0.0010***	**0.0010***

[i]Percent marketable was calculated as (marketable count / total count) × 100.

[ii]Percent cull was calculated as (unmarketable count / total count) × 100.

[iii]Means followed by the same letter are not significantly different based on Tukey's HSD test at the 95% confidence level.

Conclusion

The 2025 Grady jalapeno pepper trial demonstrated significant differences among cultivars for yield components, fruit size, and marketability. 'Soundwave' consistently produced the highest fruit count and marketability, while 'Unicron' exhibited superior fruit length and width. Although total yield did not differ significantly among cultivars, variation in cull incidence influenced overall marketability. These findings suggest that cultivar choice can substantially impact fruit quality and marketable yield