Pepper Variety Trial, Grady County - Spring 2024

Theodore McAvoy, Manisha Kumari, Cale Cloud
University of Georgia

Objective

To evaluate the yield performance and fruit characteristics of diverse pepper cultivars, including jalapeño, serrano, pasilla, and banana types, under spring production conditions in southern Georgia. The trial aimed to identify cultivars with superior marketable yield and desirable fruit size attributes for commercial production.

Materials & Methods

The trial was conducted in Grady County, Georgia, during spring 2024. Eighteen pepper cultivars representing four market classes, jalapeno (J), serrano (S), pasilla (P), and banana (B), were evaluated. Plots were arranged in a randomized complete block design with replicated entries.

Data Collection

Fruits were harvested at marketable maturity and graded into marketable and unmarketable (cull) categories. Marketable fruit were uniform in size, mature, and free from defects such as disease, insect injury, cracking, or malformation. Unmarketable fruit were unsuitable for fresh-market sale due to quality defects. For each plot, marketable and unmarketable fruit weights (lbs) were recorded. Fruit length and width (inches) were measured on a subsample of five representative fruits per plot.

Statistical Analysis

Data were analyzed using analysis of variance (ANOVA). When significant differences were detected ($P \leq 0.05$), means were separated using Tukey's Honest Significant Difference (HSD) test at the 95% confidence level. All statistical analyses were performed using JMP Pro version 16 (SAS Institute Inc., Cary, NC, USA).

Results:

Table 1: Marketable weight, unmarketable weight, and size (length and width) parameters of pepper variety trial conducted at Grady, southern Georgia, USA during the spring of 2024.

S.N.	Variety	Type	Marketable Weight (lbs)	Unmarketable Weight (lbs)	Length (inches)	Width (inches)
1	Blazing Banana	B[i]	15.9 abcd[v]	1.5 ab	7.6 a	1.7 bc
2	Carranza	P[ii]	15.9 abcd	1.1 b	5.8 b	3.0 a
3	Catarino	J[iii]	16.1 abcd	1.0 b	4.7 bcd	1.8 bc
4	Chametla	J	17.5 abc	1.0 b	3.8 d	1.8 bc
5	Cuatrero	J	18.8 abc	1.3 b	3.9 d	1.8 bc
6	Gabino	J	16.8 abc	0.9 b	4.0 d	1.6 bcd
7	Hitman	P	13.3 bcd	0.9 b	5.8 b	3.0 a

8	Megatron	J	18.6 abc	0.9 b	4.2 cd	1.83 b
9	Orizaba	J	19.8 ab	0.5 b	4.1 d	1.7 bc
10	Pathfinder	S[iv]	21.6 a	0.7 b	4.6 bcd	1.2 cde
11	Real Serrano	S	20.4 a	1.1b	4.4 bcd	0.9 e
12	Seminis 5633	S	15.3 abcd	0.5 b	3.7 d	1.0 de
13	Seminis 5816	J	15.4 abcd	3.6 a	4.0 d	1.8 bc
14	Sequoia	P	9.1 d	1.1 b	5.1 bcd	3.0 a
15	Soundwave	J	20.7 a	0.6 b	4.2 cd	1.9 b
16	Teca F1	P	15.0 abcd	2.1 ab	5.2 bcd	3.0 a
17	Teniente	J	12.7 cd	0.7 b	3.8 d	1.5 bcd
18	Unicorn	J	13.1 bcd	0.9 b	5.6 bc	2.0 b
P value			**<0.0001**	**0.0017**	**<0.0001**	**<0.0001**

[i]B = Banana Pepper

[ii]P = Pasilla

[iii]J = Jalapeno

[iv]S = Serrano

[v]Means followed by the same letter are not significantly different based on Tukey's honest significant difference test at 95%.

Conclusion

The Spring 2024 pepper variety trial in Grady County, Georgia, showed significant differences among cultivars. 'Pathfinder,' 'Real Serrano,' and 'Soundwave' produced the highest marketable yields, while 'Sequoia' yielded the lowest. 'Blazing Banana' had the longest fruit, and pasilla cultivars produced the widest fruits. 'Seminis 5816' recorded the highest unmarketable weight, indicating quality concerns. Overall, 'Pathfinder,' 'Real Serrano,' and 'Soundwave' appear most promising for spring pepper production in southern Georgia.