Performance of Cultivars of Four Different Cucumber Types for Fresh-Market use in North Carolina

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Several different fruit types of cucumbers are used commercially for fresh-market consumption throughout the world. The major types used for field production are American slicers, Middle-Eastern beit alpha slicers and Japanese trellis slicers. Lately, American pickling cucumbers have been used for fresh consumption as consumers have discovered their thin skin, small seeds, and convenient size for use for today's small families.

Little has been written about the different fruit types of cucumber to define their characteristics or performance (1). The objective of this study was to evaluate the performance and determine the fruit characteristics of fresh-market cucumber types that have potential use in North Carolina.

Methods. A trial was run in 1985 to measure yield, quality and fruit characteristics of 10 cultivars of 4 different fruit types of cucumbers. The cultivars were planted in 3 m rows 1.5 m apart. The experiment design was a randomized complete block with 3 replications. The trial was planted 25 April and harvested 6 times (twice weekly) between 10 and 25 June. Standard cultural practices were used to control weeds, diseases and insects. Fruits were sorted into marketable and cull grades based on U.S. Department of Agriculture standards (but modified to allow for different fruit diameter).

Results. The major difference among the types was in fruit length, skin color and wartiness (Table 1). The beit alpha slicers were generally lightest in color, and the American slicers generally the darkest. The Japanese trellis cucumbers had large warts which tended to form ridges down the fruit surface. There were differences in yield and quality among cultivars within each of the fruit types. The beit alpha types were generally the highest yielding (Table 2).

There were also differences among the 4 cucumber fruit types for length:diameter ratio (LD). LD ratio was smallest for the pickles: 3.0; intermediate for the beit alpha and American slicers: 4.0; and longest for the Japanese trellis slicers: 6.0 (Table 2).

All types are suited for fresh-market production of cucumbers in the field, although consumers would have to be introduced to the beit alpha and Japanese trellis fruit types in the U.S. The Japanese trellis types would have fewer culls if grown on a trellis, since they tend to curve when grown on the ground.

Literature Cited

1. Anonymous. 1984. Modern cucumber technology. Asgrow Seed Co. Kalamazoo, Michigan.

Table 1. General fruit characteristics of 4 cucumber types for fresh-market production.

Fruit type	Shade of green	Color uniformity	Fruit skin		Fruit length
			Thickness	Surface	
American pickle	Lt.-Med.	Speckled	Medium	Warts	Short
Beit alpha	Light	Uniform	Thin	Hairs	Medium
American slicer	Dark	Uniform	Thick	Warts	Medium
Japanese trellis	Medium	Uniform	Thin	Ridges	Long

Table 2. Yield and fruit quality[z] of 10 cultivars from 4 different fruit types of cucumbers.[y]

Cultivar or line	Seed source	Marketable yield (Mg/ha)	Shape	Color	Seed-cell	Length (cm)	Length: diameter ratio
American Pickling							
Sumter	Asgrow Seed	34	8.0	5.0	6.7	14	2.8
Regal	Harris-Moran	74	6.7	7.3	7.0	16	3.1
Middle-Eastern Beit Alpha							
Amra	Nickerson	84	5.7	5.0	7.0	18	3.4
Lama	Asgrow Seed	76	6.0	6.3	4.0	18	3.4
Celebrity	Ferry-Morse	81	4.7	5.0	5.0	22	4.1
American Slicing							
Sprint 440	Asgrow Seed	70	7.0	8.3	7.0	19	3.6
Dasher II	PetoSeed	44	8.0	8.0	7.3	20	4.0
Japanese Trellis							
Tasty Time	Sakata Seed	73	5.7	7.3	6.0	26	5.2
Tasty Gift	Sakata Seed	64	5.7	7.7	8.0	32	6.8
Tasty Gem	Sakata Seed	28	7.0	7.3	9.0	29	6.7
LSD (5%)		17	2.0	1.5	2.1	4	1.0
CV (%)		20	21	15	26	13	16

[z]Quality scored 1 to 9 (Shape: 1=pointed, crooked; 5=tapered, curved; 9=blocky, straight. Seedcell: 1=extra large, 5=medium, 9=extra small. Color: 1=white, 5=medium green, 9=very dark green.)

[y]Data are means over 3 replications and 6 harvests.