Performance of Muskmelon Cultivars, Middle Tennessee Experiment Station, 2001

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Interpretative Summary

The muskmelon cultivars generally performed well in the trial. All cultivars produced high in numbers of fruit per acre. 'HMX7605' produced one of the larger fruit average weights. Fruit of 'HMX7605' and 'Veienna' had higher soluble solids than fruit of other cultivars. Most cultivars had moderate sutures and netting.

Introduction

Muskmelons are grown in limited commercial acreage in Middle Tennessee. This area with a somewhat dry and warm summer growing season is well adapted to muskmelon production. However, in some years, fruit shipping quality is poor. Producing muskmelons with consistent quality if a difficult task in many areas, and especially in the humid eastern United States. Inconsistent flavor among muskmelons appears to be a universal problem.

'Athena' Has been the predominate muskmelon cultivar in the Eastern United States for several years. The shipping market prefers a cultivar that has less suturing than 'Athena', but the excellent quality and flavor of 'Athena' fruit is an excellent characteristic of this cultivar. Melons with heavy netting and of 4 lb or larger are usually preferred for the shipping market. Local markets often prefer larger melons. Several cultivars other than 'Athena' are commercially available, but are grown in a very limited acreage in Tennessee. Many of the new cultivars have mildew tolerance. An experiment was conducted at the Middle Tennessee Experiment Station at Spring Hill in 2001 to evaluate performance of eight muskmelon cultivars.

Materials and Methods

The site was prepared for planting using conventional tillage in early May. Fertilizer was broadcast at 750 lb/A of 15-15-115 before final disking on May 16. Naptalam (Alanap) at 4.0 lb ai/A and bensulide (Prefar) at 6.0 lb ai/A were applied and soil incorporated for week control on May 18. Plot size was one row, 20 ft long and each row contained 20 plants or 10 hills of two plants/hill spaced 2-ft apart in the row. Rows were spaced six feet apart. Experimental plot design was a randomized complete block with four replications. Esfenvalerate (Asana) at 0.05 lb ai/A was applied eight times for insect control. Fungicides for disease control included azoxystrobin (Quadris) at 0.1 lb ai/A alternated with chlorothalonil (Bravo) at 2.0 lb ai/A applied with each insecticide application.

Five harvests were made between Aug. 14 and Sept. 12. Yields were recorded by

number and weight of marketable melons. Selected average size melons were measured for length, diameter, and flesh thickness. Melons were rated for netting, sutures, and appearance. Soluble solids were recorded with a hand held refractometer. All data were analyzed by Analysis of variance procedures. Means were separated by Duncan's multiple range tests at the 0.05 level of probability.

Results and Discussion

No significant differences were found in number of melons per acre (Table 1). All cultivars produced a high number of melons per acre. 'HMX7605' produced one of the heaviest melons, and average weight was 9.70 lb per melon. Usually, muskmelon cultivars that produce larger melons, produce fewer melons, but that was not apparent during this study. Desirable weight of muskmelons is at least 4 lb and melons in the 6 to 8 lb range are desirable for many local markets. Fruit of all cultivars averaged over 6 lb. No significant differences were found as to the length of the fruit produced. 'HMX7608' was among cultivars that had the largest fruit diameter.

Sutures are acceptable in many local markets, but are less desirable for the shipping market. 'Odyssey' has moderate to light sutures. None of the cultivars had heavy sutures, but 'HMX7605' and 'Athena' were among cultivars with the most sutures (Table 2). All cultivars were well netted which is desirable for most markets. Fruit of 'HMX7605' and 'Vienna' had were among cultivars with higher soluble solids. Soluble solids levels were acceptable for all cultivars. 'HMX7605' had the highest yield in tons per acre, while 'Minerva' had the lowest.

Table 1. Yield and fruit measurements of muskmelon cultivars evaluated at The University of Tennessee Middle Tennessee Experiment Station at Spring Hill, 2001.

Cultivar	Marketable yield no/A	Pounds per melon	Mellon length (in)	Melon diameter (in)	Flesh thickness (in)
Athena	12877 a[z]	7.3 cd	8.5 a	7.3 bc	1.66 abc
HMX5581	10527 a	7.7 bcd	9.4 a	8.0 ab	1.75 a
HMX7605	13250 a	9.7 a	9.2 a	8.2 a	1.50 cd
HMX7608	9438 a	8.6 b	9.7 a	8.5 a	1.72 ab
Minerva	9801 a	6.9 d	8.7 a	7.0 c	1.53 bcd

Odyssey	13340 a	7.4 cd	8.8 a	7.8 ab	1.60 abcd
Vienna	11072 a	7.8 bcd	8.7 a	7.6 abc	1.44 d
PXC221	11798 a	8.0 b	8.5 a	7.8 ab	1.53 bcd

[z]Means within a column followed by the same letter are not significantly different at the 0.05 level of probability. Duncan's multiple range tests.

Table 2. Fruit characteristics and yield in total tons per acre of muskmelon cultivars evaluated at The University of Tennessee Middle Tennessee Experiment Station at Spring Hill, 2001.

Cultivar	Netting rating[x]	Suture rating[x]	Appearance rating[x]	Soluble Solids[y]	Yield - tons/A	Seed Source
Athena	7.0 a	7.0 a	8.75 b	10.25 bc	46.5 bc	Rogers
HMX5581	7.5 a	5.5 ab	8.5 b	10.00 c	40.7 bc	Harris Moran
HMX7605	7.8 a	7.3 a	8.8 b	12.25 a	64.6 a	Harris Moran
HMX7608	6.0 a	6.3 a	10.0 a	10.25 bc	40.2 bc	Harris Moran
Minerva	7.5 a	6.5 a	8.8 b	10.13 bc	33.2 c	Rogers
Odyssey	6.8 a	3.8 b	9.5 ab	11.00 bc	49.5 b	Sunseed
Vienna	7.3 a	5.5 ab	8.3 b	11.38 ab	43.4 bc	Asgrow
PXC221	6.8 a	6.0 a	8.3 b	10.38 bc	46.7 bc	Siegers

[z]Means within a column followed by the same letter are not significantly different at the 0.05 level of probability. Duncan's multiple range tests.

[X]ratings on a scale of 1 to 10, 10 = heaviest netting, most sutures, best appearance.

[Y]soluble solids by hand held refractrometer.

This research represents one season's data and does not constitute recommendations. After sufficient data is collected over the appropriate number of seasons, final recommendations will be made through research and extension publications.