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# Yield of Eight Summer Squash Varieties in Southwest Michigan

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## Objective:

To evaluate commercial potential of eight summer squash selections under southwest Michigan growing conditions.

## Summary:

The seven zucchini squash evaluated ranged in total yield from 1432 to 1798 half-bushels/acre. All seven entries were statistically similar in total yield, however differences were found in yield of small, medium, large, and cull fruit. Each entry has commercial potential in Southwest Michigan, especially if they have virus tolerance. One yellow squash (Blonde Beauty) was also in the trial but not included in statistical evaluation.

## Materials and Methods:

**Fertilizer:** Prior to planting nitrogen (15.5-0-0), potassium (0-0-60), sulfur (95%), and boron (10%) were broadcast and incorporated at 200, 180, 25 and 20 pounds/acre, respectively. After planting, 49 additional pounds of nitrogen was applied through the drip system as 28% nitrogen beginning 8 June and ending 20 July for a total nitrogen application of 80 pounds per acre.

**Planting:** All entries were direct seeded 27 May on plastic mulched, 6" high raised beds into which a drip tape was inserted at the time of bed shaping. Rows were spaced 5.5' on center with an in-row plant spacing of 2.0-feet providing 3960 plants/acre. The trial was planted as a completely randomized design with four replications and eight plants/replication. Two guard plants bordered each plot.

**Plant Care:** Plots were irrigated as needed and disease and insect pests controlled using commercially recommended cultural practices. Weeds were controlled using the black plastic and hand weeding between rows.

**Harvest and data collection:** Harvest was conducted 12 times between 6 and 31 July and fruit graded into small (6-inches and less), medium (6 to 8-inches), large (8 to 10-inches), and culls (crooked and poorly pollinated fruit). Harvests were conducted Monday, Wednesday, and Friday. Plots were picked on the small side on Friday to limit large and over size fruit on the Monday harvest. Blonde Beauty was excluded from the data when it was subjected to statistical analysis.

## Results and Discussion:

No statistical difference was found in total yield, however differences were found in the other traits evaluated (Table 1). Total yield ranged from 1432 for GN0070 to 1799 half-

bushels/acre for Spineless Beauty. There had to be a difference greater than 472 half-bushels to be statistically different. Such large amounts are common in field trials.

Traits that differed were yield of small, medium, large, and cull fruit. Yield of small fruit ranged from 953 for Tribute to 598 half-bushels for USAS17150. Three other entries: DG0484, SV3451YG, and Spineless Supreme were statistically similar to Tribute (Table 1) for small fruit yield. Medium fruit yield ranged from 392 for Spineless Beauty to 216 half-bushel for GN0070. Only GN0070 was statistically different from Spineless Beauty for medium fruit yield. Yield of large fruit ranged from 331 for USAS17150 to 93 half-bushels for GN0070. Three other varieties were statistically similar to USAS17150 for large fruit yield. Yield of cull fruit ranged from 470 for Spineless Beauty to 187 half-bushels/acre for Tribute. Tribute was the only variety that was statistically different in yield of cull fruit.

Representative samples of each entry are shown in Figures 1–4. Spineless Beauty is a cultivar popular to Southwest Michigan growers. Spineless Beauty has the color, yield, and plant type that is attractive to producers, brokers, and consumers. Spineless Beauty's drawback is that it is not tolerant to any virus diseases. Many growers will plant Spineless Beauty for early harvest, followed by a cultivar with greater virus tolerance for late season harvest when aphid vectors are more prevalent. Growers like Spineless Beauty's lighter color because it shows fewer skin abrasions than a darker skin variety. The lighter skin color of Spineless Beauty compared to the other entries is evident in Figure 1.

As mentioned, Spineless Beauty has no virus tolerance and neither does Blonde Beauty yellow squash. Both Spineless Supreme and Tribute have tolerance to several viral diseases. Other entries are advanced breeding lines and it is assumed they have some level of tolerance but that information was not made known to the authors of this study.

Table 1. Yield in half-bushels/acre of eight summer squash grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2020. Plant population was 3960 plants per acre. Numbers in bold are not statistically different from the highest number in that column.

Entry	Seed Source	Total Yield	Yield Small	Yield Medium	Yield Large	Yield Cull
<b>Spineless Beauty</b>	Syngenta	1799	730	<b>392</b>	<b>323</b>	<b>354</b>
<b>DG0484</b>	Syngenta	1751	<b>809</b>	<b>296</b>	<b>176</b>	<b>470</b>
<b>Spineless Supreme</b>	Syngenta	1715	<b>780</b>	<b>366</b>	<b>175</b>	<b>394</b>
<b>USAS17150</b>	USAS	1674	598	<b>305</b>	<b>331</b>	<b>440</b>
<b>SV3451YG</b>	Seminis	1555	<b>804</b>	<b>335</b>	113	<b>302</b>
<b>Tribute</b>	Harris Moran	1515	<b>953</b>	<b>287</b>	89	187
<b>GN0070</b>	Syngenta	1432	713	216	93	<b>409</b>
<b>Blonde Beauty</b>	Rupp	1198	810	183	0	205
	<b>lsd<sub>0.05</sub></b>	<b>NS</b>	<b>194</b>	<b>156</b>	<b>192</b>	<b>175</b>

Small (6-inches and less), medium (6 to 8-inches), large (8 to 10-inches), and culls (crooked and poorly pollinated fruit).



Figure 1. Eight summer squash grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2020. Bottom row left to right: SV3451YG, DG0484, GN0070, and Spineless Supreme. Top row left to right: Spineless Beauty, Tribute, USAS 17150, and Blonde Beauty.



Figure 2. Summer squash grown at the Southwest Michigan Research and Extension Center, Benton Harbor Michigan in 2020. Left to right: Spineless Beauty, DG0484, and Spineless Supreme.



Figure 3. Summer squash grown at the Southwest Michigan Research and Extension Center, Benton Harbor Michigan in 2020. Left to right: USAS17150, SV3451YG, and Tribute.



Figure 4. Summer squash grown at the Southwest Michigan Research and Extension Center, Benton Harbor Michigan in 2020. Left to right: GN0070 and Blonde Beauty.