

# LSU AgCenter 2019 Zucchini Variety Trial

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## Introduction

Eight varieties of zucchini (*Cucurbita pepo*) were evaluated in southeast and northwest Louisiana during the spring 2019 growing season. Plants were grown using plastic mulch and drip irrigation following standard practices outlined in the Southeastern U.S. Vegetable Crop Handbook. Plants were harvested 6 times at Covey Rise, the southeast location (Husser, LA) and 4 times at the Hill Farm Research Station, the northwest location (Homer, LA). Fruit were sorted into marketable and cull categories using USDA Agricultural Marketing Service Standards. Overall 'Elite' proved to be one of the best varieties planted in this trial, out producing both 'Esteem' and 'Dunja' but having comparable yields to the other trialed varieties.

Zucchini is grown throughout Louisiana. Farmers market zucchini direct to consumers, through outlets such as roadside markets, farmers' markets, individual grocery stores, and restaurants. In 2017, 129 acres of zucchini were grown with a gross farm value (GFV) of \$1,024,910 (LSU AgSummary). Commercial producers are continuously striving for optimal yields of high-quality fruit. Combining appropriate varieties with best management practices can influence yields. The two most prevalent zucchini diseases in Louisiana are zucchini yellow mosaic virus and cucumber mosaic virus. Because Louisiana growers face disease and virus pressure, eight cultivars were trialed as they have some level of disease resistance. Selected cultivars, seed companies, and disease/virus resistance are displayed in Table 1.

Table 1. Zucchini Varieties, Seed Companies, and Disease Resistance

Zucchini Variety	Seed Company	Disease Resistance
Esteem	Harris	PM, ZYMV, WMV, PRS
Spineless Perfection	Harris	PM, ZYMV, WMV
Payload	Harris	PM, ZYMV, WMV, CMV
Elite	Harris	N/A (control)
Dunja	Johnny's	PM, PRV, WMV, ZYMV
Tigress	Johnny's	PRV, WMV, ZYMV
Golden Glory	Johnny's	PM, WMV, ZYMV
Spineless Supreme	Johnny's	PM, CMV, WMV, ZYMV

PM= Powdery Mildew

ZYMV= Zucchini Yellow Mosaic Virus

WMV= Watermelon Mosaic Virus

PRS= Papaya Ringspot Virus

CMV= Cucumber Mosaic Virus

## Materials and Methods

This study was conducted in two locations, Covey Rise Farm in Husser, LA and at the Hill Farm Research Station in Homer, LA. The soil in the southern location was fine sandy loam and the soil in the northern location was characterized as silt loam. Seeds of all eight cultivars were sown on March 14, 2019. After germination, plants were watered daily for 5 minutes using a mist system and fertilized weekly for three weeks with a 200 ppm N solution (20N-20P-20K; Peter's Dublin, OH).

Zucchini transplants were planted by hand on April 12 in the southern location and April 19 in the northern location. Plots contained 10 plants at Covey Rise and 5 plants at Hill Farm. Each location had 3 replications of each zucchini variety. Plants were spaced 18 inches apart and planted in a single drill. At Covey Rise, the southern location, plastic mulch with drip irrigation was used. The northern location (Hill Farm Research Station) planted on bare rows and used an overhead center pivot sprinkler as necessary for irrigation. Plants at both locations were fertilized using recommendations from 2019 Southeastern U.S. Vegetable Crop Handbook. There was moderate insect pressure from leaf-footed bugs, stinkbugs, and cucumber beetles at both trial locations.

## Results and Discussion

Marketable zucchini fruit were defined as a zucchini 6-8 inches long and having no visible blemishes or signs of decay on the fruit. Zucchini were harvested once a week and were separated into marketable and unmarketable groups based on size and visual appearance. Both groups, marketable and cull, were weighed and counted. All varieties produced green fruit except 'Golden Glory', which produced a yellow zucchini fruit. Table 2 provides the average marketable yields both in weight and fruit number per harvest. It is important to remember that the plot sizes in the south location were larger, with 10 plants per plot versus 5 plants per plot in the northern location. The southern location was harvested 6 times compared to the northern location harvested 4 times. We are not comparing southern versus northern yields because the two trial sites were completely different in planting strategies, dates and number of times visited. It is also important when reflecting on this data to remember that this was a research study. Marketable yields could have been higher if the sites were harvested biweekly, as typically harvested on most Louisiana farms. Zucchini grow very large very quickly. Harvesting 2-3 times per week increases marketable yields simply because you do not lose excellent fruit to becoming too large in size. In the south Louisiana location, 'Elite' produced more marketable fruit per harvest than 'Spineless Perfection', 'Esteem' and 'Dunja', but was no different in marketable fruit number as compared to 'Tigress', 'Payload', 'Spineless Supreme' and 'Golden Glory'. 'Elite' also produced more marketable weight (lbs.) than both 'Esteem' and 'Dunja' in the south Louisiana location. However, 'Elite' did not differ in the average number of marketable pounds produced at each harvest when compared to the remaining trialed varieties in the southern location. North Louisiana had fewer plants in each plot and plants were not planted on plastic mulch with drip irrigation. Again, under these conditions, 'Elite' remained a top producer, producing more marketable fruit than both 'Esteem' and 'Dunja', but not more marketable fruit than any of the other trialed varieties. There were no differences in marketable weight produced in the varieties grown in the north Louisiana location.

Table 2. Average Zucchini Yields per Harvest in the 2019 Spring Season at two Louisiana Locations

Zucchini Variety	Marketable Fruit Number		Marketable Fruit Weight (lbs.)	
	South LA	North LA	South LA	North LA
<b>Elite</b>	16.7a	2.9ab	4.2a	0.9a
<b>Tigress</b>	15.8ab	3.8ab	3.9ab	1.3a
<b>Payload</b>	14.9ab	4.3ab	3.6abc	1.2a
<b>Spineless Supreme</b>	14.3abc	3.9ab	3.3a-d	0.9a
<b>Golden Glory</b>	14.1abc	2.4b	3.1bcd	0.6a
<b>Spineless Perfection</b>	13.3bcd	3.4ab	3.7abc	1.0a
<b>Esteem</b>	11.9cd	4.7a	2.9cd	1.4a
<b>Dunja</b>	11.3d	3.9ab	2.6d	1.2a

Statistics were completed using a SAS program with Duncan. Plot size was 10 plants per plot in the south Louisiana location with 6 harvest dates and 5 plants per plot in the north Louisiana location with 4 harvest dates. Numbers in columns with different letters are significant at  $p \leq 0.05$ .

Overall, we would recommend all varieties in this trial for commercial production in Louisiana. Even though 'Dunja' had the lowest yields in terms of number of marketable fruits produced in both locations, it remains a reliable producer with high quality fruit. As noted earlier, we expect all marketable yields to increase with harvests that are more frequent.

We would like to recognize Johnny's Seeds for donating the zucchini seeds for this variety trial.

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