2021 Gaston County Pumpkin Cultigen Yield Evaluation

(Sandcastle Farm)

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Principal Investigator

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Cultural Practices

The trial was hosted at Sandcastle Farm in Dallas, NC. Seed was planted into bare ground with overhead irrigation. Wheat straw was laid between rows following germination.

Acknowledgements

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Disclaimer

These results have not been published and presents data from the Gaston County cultigen study conducted during the summer of 2021. The reliability of this information is specific to limited input operations within Gaston County and was designed to increase county agent knowledge on the crop. Although these results may aid in future decision making of Gaston County farmers, it is not to be their only resource to utilize.

Introduction

Gaston County has planned to host its 7th annual Somethin' Pumpkin event in October of 2021. This is an event that is designed to allow consumers to gain a deeper connection with a crop that our state ranks in the top 5 for production within our nation. Despite the crops popularity amongst consumers and growers within our state, a majority of pumpkin production occurs in the western and eastern portions of our state. With the increased interest of consumers within Gaston County in pumpkins, in part due to the Somethin' Pumpkin event; we chose 2021 as the year to evaluate the crop for local growers that may be interested in its potential. 2021 is the first year that a pumpkin crop has been evaluated in Gaston County. With no scientific evidence of observed challenges for growing pumpkins in Gaston County the 2021 evaluation was designed to set a baseline of challenges presented to growing within our region. With the guidance of an expert at North Carolina State University 20 cultigens were selected for this evaluation, 5 miniatures, 5 small, 5 medium and 5 novelty types. Yield was the primary evaluation focus of this study, with observation of challenges for future production being a desired outcome.

Materials and Methods

20 cultigens were selected to be evaluated and placed in a randomized block design with four replications. Each plot measured 20 feet long with 10 feet allowed for in-row space. Based on spacing recommendation some plots were planted 5 plants spaced 4 foot apart, and others 10 plants spaced 2 foot apart. All plots were hand sown June 22, 2021. An evaluation of germination was conducted 1 and 2 weeks following planting. Limitations arose with the amount of seed needed for replanting a few of the varieties that did not have successful germination. Rather than reseeding the cultigens that the investigator had on hand, the investigator chose to record the germination success of each plot. The field was plowed one week before planting, nitrogen and potassium were broadcast and incorporated at 62lbs/acre N and 180lbs acre K. Plants were side dressed the first week of August with a 45lbs/acre N. Clorothalonil was applied at label rate for the crop every 7-14 days. No insecticides were sprayed but pest pressure was observed. Before germination glyphosate was sprayed to clean row middles. Row middles were covered with wheat straw before side dressing in August No pre-emergent herbicides were utilized in row middles before or after mulching, allowing for weed pressure to be observed. Earlier maturing varieties were harvested on September 10, 2021 (80days), later maturing varieties were harvested on September 17, 2021 (87days). Yield per acre data was calculated by utilizing the 200ft^2 area of each plot. A representative sample was weighed (all of the crop if less than 10 fruit harvested) to calculate for average weight. All marketable fruit were harvested and counted in order to generate the marketable fruit total.

Results

Cultigens will be addressed in this section by how they were grouped in the study based on their predicted average weight outcomes. Fruit rot and pickleworm damage effected the outcomes of this evaluation. If rot or excessive damage occurred the fruits were omitted from the evaluation.

Miniature

Five entries were evaluated in this class. Gold Dust was the smallest fruit in this class at an average .4lbs/fruit. Jack Sprat was the largest fruit in this class with an average fruit weight of 2.4lbs/fruit. Gold Dust had the highest number of marketable fruit per acre. Orangita outperformed the others in tons/acre yielding 2.79 tons. Jack Sprat had germination complications in this trial and would have benefited from a replanting.

Novelty

Five entries were evaluated in this class. Casperita was the smallest fruit in this class averaging .7lbs/fruit. The largest pumpkin in this class was Flat Stacker which boasted the heaviest weight in this evaluation averaging 15.6lbs/fruit. Casperita produced the highest number of marketable fruit per acre. Flat Stacker yielded the highest tonnage per acre with 11.9.

Small

Five entries were evaluated in this class. Cinnamon Girl PMR was the smallest pumpkin of this class averaging 2.4lbs/fruit. Neon was the largest cultigen evaluated in this class averaging 8lbs/fruit. Pick-a-Pie yielded the most fruit per acre. Bisbee Gold recorded the largest tonnage with 5.17 tons per acre. Kakai was a variety that had germination complications and may have benefited from re planting.

Medium

Five entries were evaluated from this class. Gold Standard was the smallest in this class averaging 7.9lbs/fruit. The largest pumpkin evaluated in the medium class was Kratos which averaged 12.4lbs/fruit. Gold Standard

outperformed the others for fruit total and tonnage with 7.96 tons/acre. All cultigens in this class experienced complications with germination. Seed on hand was limited for these varieties and created a scenario where there was an inability for plant back.

Variety	Plants Germinated	Marketable Fruit Total	Average Weight/Fruit	Marketable Fruit/ Acre	Tons/Acre
Gold Dust	(28/40) 70%	139	0.4lbs	7,569	1.51
Crunchkin	(29/40) 72.5%	76	0.5lbs	4,138	1.03
Orangita	(32/40) 80%	128	0.8lbs.	6,970	2.79
Kandy Korn Plus	(30/40) 75%	73	0.9lbs	3,975	1.79
Jack Sprat*	(13/20) 65%	19	2.4lbs	1,035	1.24
Casperita	(35/40) 87.5%	178	0.7lbs	9,692	3.39
Moonbeam	(15/20) 75%	22	6.8lbs	1,198	4.07
Blaze	(34/40) 85%	133	2.1lbs.	7,242	7.6
Flat Stacker	(18/20) 90%	28	15.6lbs.	1,525	11.9
Black Cat	(36/40) 90%	168	1.3lbs	9,148	5.95
Pick-a-Pie	(15/20) 75%	60	2.7lbs	3,267	4.41
Kakai*	(10/20) 50%	7	4.9lbs	381	0.93
Neon	(15/20) 75%	23	8.0lbs	1,252	5
Bisbee Gold	(15/20) 75%	50	3.8lbs	2,723	5.17
Cinnamon Girl PMR	(18/20) 90%	57	2.4lbs	3,104	3.76
Jack of All Trades*	(9/20) 45%	15	11.1lbs	817	4.53
Orange Sunrise*	(7/20) 35%	5	11.1lbs	272	1.51
Magic Wand*	(7/20) 35%	6	8.7lbs	327	1.42
Kratos*	(8/20) 40%	9	12.4lbs	490	3.04
Gold Standard	(18/20) 90%	37	7.9lbs	2,015	7.96

*Signifies inadequate germination for accurate evaluation

Conclusions

Going forward there needs to be a realization for Gaston County growers considering pumpkin production of the proper pest management strategies. Insect scouting is necessary, there was a high percentage of plants observed in this evaluation with squash vine borer damage, as well as numerous fruit with pickleworm. Weeds remained manageable for a time with wheat straw applied to row middles. A pre-emergent application is recommended for those considering pumpkin production at larger scales. Earlier maturing cultivars seemed to produce fruit to predicted size. Stunting due to squash vine borer and the need of an earlier harvest date due to pest pressure may have resulted in average fruit weights and yields outside the range of what was expected. Overall this was a learning experience for our County Extension office and we now have a better understanding of the challenges pumpkin growing may present those looking to grow the crop in the future.


Gold Dust (Rupp)
Gold Dust


Crunchkin (HM)
Crunchkin


Orangita (Rupp)
Orangita


Kandy Korn Plus
(Sakata)
Kandy
Korn Plus


Jack Sprat (Sakata)
Jack Sprat


Casperita
(Rupp)
Casperita


Moon Beam
(Rupp)
Moon Beam


Blaze
(Johnny's Seeds)
Blaze


Flat Stacker
(Rupp)
Flat Stacker


Black Cat
(Rupp)
Black Cat


Pick-A-Pie (Rupp)
Pick-a-Pie


Kakai
(Johnny's Seeds)
Kakai


Neon (Rupp)
Neon


Bisbee Gold (Rupp)
Bisbee Gold


Cinnamon Girl PMR
(Johnny's Seeds)
Cinnamon
Girl PMR

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