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## Naked Seeded Pumpkin Variety Trial Report

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# 2019 Naked Seeded Pumpkin Variety Trial

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In 2019 seven varieties of naked seeded pumpkin (*Cucurbita pepo* subsp. *pepo*) were evaluated for suitability for production in Rhode Island. This trial was conducted in collaboration with local farmer Alby Brandon, who is considering commercial production of pumpkin seeds as a value-added product for the snack food market.

## Methods

The varieties and seed sources are listed in table 1. All seeds were started in plug trays in the greenhouse on May 13 and transplanted into the field June 5-7. Germination losses exceeded 20% on some varieties despite starting in the plug trays in soilless media. Pumpkins were transplanted into black plastic covered raised beds with 12 inches between plants in the row. Fertilizer was incorporated into the raised beds and applied through fertigation following standard recommendations for squash. Striped cucumber beetles were found feeding in the crop on June 10. Plants in infested plots were sprayed with Sevin XR and all plots were covered with Agribon-19 supported on wire hoops to prevent additional beetle feeding and infection with bacterial wilt. Covers were removed when pumpkins began to flower.

| Variety                  | Source                  |
|--------------------------|-------------------------|
| <b>Camillo (HSC 209)</b> | Seedway                 |
| <b>HSC 151</b>           | Seedway                 |
| <b>Kakai</b>             | Johnny's Selected Seeds |
| <b>Pie Pita</b>          | High Mowing Seeds       |
| <b>Naked Bear</b>        | Johnny's Selected Seeds |
| <b>Lady Godiva</b>       | Harris Seeds            |
| <b>NH 2020</b>           | Dr. Brent Loy, UNH      |

**Table 1. Entries included in the trial, and sources. Many varieties are available from multiple vendors.**

Each plot consisted of two beds 5 ft apart on center, with 25 plants per bed and 50 plants per plot. The experiment was a randomized block design with four replications. Plants were counted three weeks after transplanting and yield data were adjusted to compensate for plots with fewer than 50 surviving plants. The center 20 feet of each plot (approx. 40 plants) were harvested on August 29, 119 days after seeding. All varieties were fully mature. Data were collected at harvest on fruit yield and number of fruits per plot. Two fruits from each plot were randomly selected for seed extraction. These fruit were stored under ambient conditions for approximately one month before extraction; a significant number of fruits rotted during storage. Remaining fruits were weighed and seed were extracted, washed, and dried at 104°F in a forced-air dryer. Dried seeds were weighed. No

differences were noted in disease resistance between varieties, but all plants had begun to senesce due to maturity by the time cucurbit diseases became problematic on the farm. Data were analyzed with ANOVA and Fischer's Least Significant Difference.

## Results

Varieties exhibited significant differences for yield, number of fruit, fruit weight, seed weight, and seed weight as a percent of fruit weight. Varieties did not differ in the number of rotten fruit or fruit with sprouted or rotten seed. As expected the large-fruited varieties had the highest yields by weight, while the small-fruited varieties had the largest yields by count. HSC 151 had the most weight overall at 234 lbs per plot, but was similar to Camillo and Kakai. Pie Pita averaged 70 fruit per plot, significantly more fruit than all other varieties. Fruit weight was just under 2 kg for the small fruited varieties. The large-fruited varieties were more variable, with Lady Godiva having the largest fruit at 7.6 kg, and HSC 151 was a close second at 7.3 kg. The large-fruited pumpkins also produced more seed per fruit; HSC 151 and Camillo were highest at 91 and 89 g, respectively. This was significantly more than any of the small-fruited varieties, which ranged from 51 g to 48 g. However, seed made up a greater percentage of the fruit weight in the small-fruited pumpkins. Naked Bear and Pie Pita fruits were 5% seed by weight, more than any other variety. Total yield per plot and percent seed by weight were used to predict seed yield per plot; Pie Pita was most productive at 6.8 lbs. HSC 151, Camillo, and Naked Bear were statistically similar. At the spacing used in this study Pie Pita has the potential to produce 1500 lbs of seed per acre.

## Conclusions

Under the conditions in this trial Pie Pita was the most productive variety. HSC 151 and Camillo were close seconds, and would be preferable if seed is to be extracted by hand, since they produce more seed per fruit. Germination and establishment are likely to be challenging with naked seeded pumpkins, particularly when using untreated seed. A margin of at least 20% is recommended for transplant production.

## Acknowledgements

Seed was donated by the companies and breeders listed in table 1. The trial was funded by the Rhode Island Agricultural Experiment Station and Rhode Island Cooperative Extension. Thanks to Abby McLeod, Fari Gheshm, Gabrielle Torphy and Tim Sherman for help with field work and seed extraction.

