Fruit Vegetable Seed Varieties Suited for the USVI Farm to School Program

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INTRODUCTION

The purpose of this study was to find the best non-GMO speciality crop seeds available for conditions in the United States Virgin Islands (USVI) to be used in the Farm to School program and beyond. Four professional farms within the Virgin Islands' Farmers Alliance (VIFA) evaluated both familiar and non-familiar seed varieties for productivity, disease resistance, and heat resistance. Results showed that some crop varieties vastly outperformed others. Findings may help farmers and gardeners across the Caribbean region be more successful and sustainable.

VIFA Farmers Roy Rodgers, Leroy Peets, Phillip Titre, Nate Olive, & Brian McCullough

VIFA is a USVI non-profit created by farmers to:

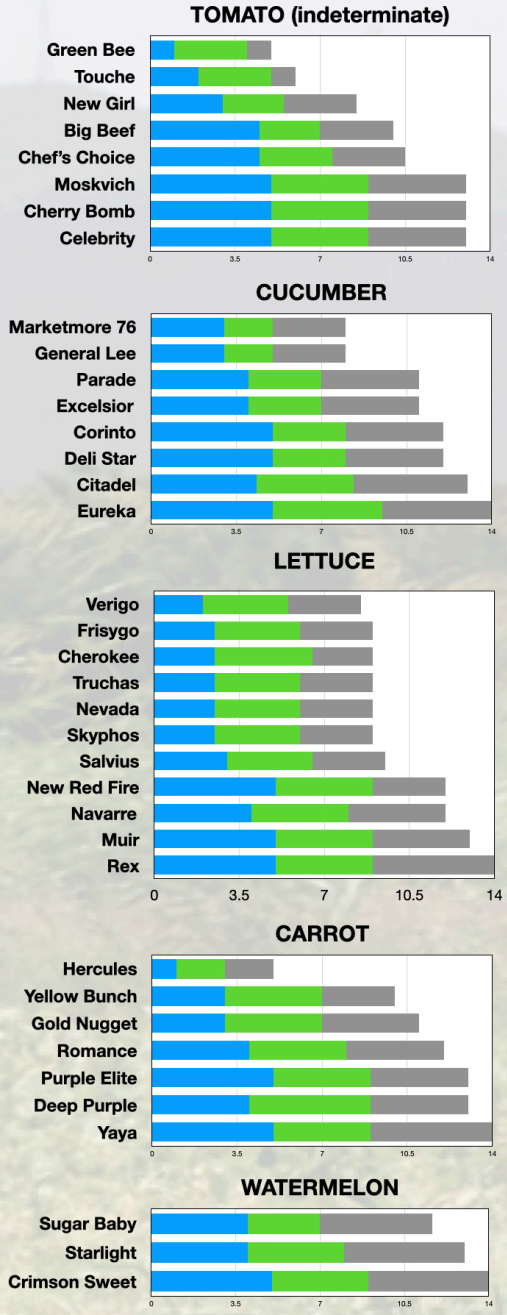
- Be an inclusive voice for island farmers and farm families
- Educate about farming and sustainability practices
- Ensure a future of growth in the agriculture industry

BACKGROUND

Food producers in the USVI are challenged to deliver a "stateside" diet locally while growing in subtropical conditions that are not suited for many vegetable cultivars. The USVI Farm to School program demands consistent amounts of high quality nutritious foods that our children will eat. No winter means that heat is more of a factor on production and pest/disease pressures may be amplified.

METHODOLOGY

- 37 seed varieties were compared across 4 farms on St. Croix over 2 years 2020-2022.
- Production methods included field grown, high tunnel, hydroponic, and certified organic.
- Crops types included tomato, cucumber, carrot, watermelon, and lettuce.
- Data were recorded weekly on plant growth, disease & pest presence, and production.
- Farmers rated tested varieties with known favorite varieties on a Likert scale of 1-5 (low to high).
- Productivity, disease & heat resistance were compared.

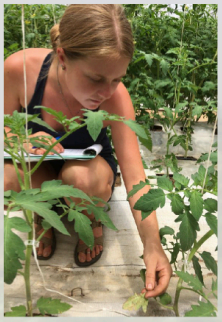


ACKNOWLEDGEMENTS

Experimental seeds provided by Johnny's Selected Seeds. Trial farms included Rodger's Farm, New Breed Farm, Tropics Hydroponics Farm, and Ridge to Reef Farm. Special thanks to data collectors Betsy Schaeffer & Elizabeth Gallo, and grant writer Faye Petree. Funded by the Sustainable Agriculture Research & Education Producer Grant program from the United States Department of Agriculture.

RESULTS

Variety rating indexes combined scores on production, disease, and heat resistance for a top score range of 15. Figures (left) show overall index performance of each seed type, with clear favorites. Varieties performed similarly across farms and production methods. Generally, experimental seeds did not perform as well as varieties already favored by farmers. However, some exhibited beneficial traits such as marketability and flavor. Top performers were Celebrity (tomato), Eureka (cucumber), Rex (lettuce-hydroponic), Muir (lettuce; ground or hydroponic), Yaya (carrot), and Crimson Sweet (watermelon).



Elizabeth Gallo, Ridge to Reef data collector

Dr. Amy Dreves, UVI Entomologist /Mentor

CONCLUSIONS

This study identified some of the best non-GMO vegetable seed varieties for use in the USVI and neighboring subtropical islands. It also confirmed that existing farmers are key knowledge holders for what works in specific growing conditions. The type of production method was not as influential as expected on crop results. This study was limited in that more plot replicates were not possible due to COVID-19 staffing shortages. Farm management factors vary widely and may have more impact on crop success than seed variety. More varieties of watermelons should be tested for suitability and sustainability, as well as other vegetable types.

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