

GROWING MIRACLE FRUIT (*SYNSEPALUM DULCIFICUM*) IN TENNESSEE

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ABSTRACT

Currently, the consumption of sugar-sweetened beverages (SSBs) is the largest main source of daily energy and added sugar intake in the united states diet. Miracle fruit, also known as miracle berry is a plant known for years by the people of West Africa, Asia and other tropical countries. Because of its health benefits, this miracle fruit is now known to be a natural sweetener, which is also rich in antioxidants and vitamins. This berry has a unique glycoprotein called miraculin that hinders the tongue’s perception to identify sour food or drink as sweet. Once this berry is eaten, its mucilaginous pulp has the ability to cause sour or bitter foods or drinks to taste extremely sweet with the intensity to decrease over time. The objective of this study is (1) to introduce the miracle fruit as a natural sweetener alternative to the people of Tennessee, (2) to grow the plant in the greenhouse, harvest the berry and perform a tasting panel and (3) introduce miracle fruit as an alternative cash crop for small scale farmers in Tennessee. According to some studies, patients who are on a bitter course of medicine, those who prefer all natural and organic foods, chemotherapy patients, people with appetite and diabetics issues may benefit from this berry.

Keywords: Miracle fruit, Natural sweetener, Tennessee

INTRODUCTION

Due to the rise in health issues emerging from sugar and sugar substitutes consumption, the food industry is under pressure by the regulators to reduce the sugar content in their products (food standards agency, 2008; nestle, 2013). It is important to understand that our body uses glucose (sugar) as a source of energy, therefore we should focus more on eating whole foods filled with a nutritional value than foods with added sugars and syrups (Hartman, J., 2020). According to the university of Tennessee at Knoxville, several research studies have indicated that excess sugar consumption in particular sugar-sweetened beverages is a contributor to childhood and adult obesity. In the year 2016, almost 40% of adults in the U.S. Were affected by obesity. Between the year 1990 and 2016, the adult obesity rate in Tennessee tripled from 11% to about 35% respectively. During the year 1970 and 2000, high fructose corn syrup (HFCS) became the main sweetener in soft drinks as well as a common ingredient in processed foods. In the year 1999, Americans consumed an average of 60 pounds of HFCS each year and more than 400 calories per day in excess sugar (UT Knoxville, 2019). Furthermore, according to Wilken & Satiroff, 2012, a pilot study was conducted on cancer patients to determine whether the consumption of miracle fruit supplement would improve any chemotherapy associated with taste changes after they had eaten their regular foods, which resulted in poor nutrition in patients and possibly reduce the quality of life. However, results indicated that the miraculin found in the fruit has the ability to transform acidic foods to taste sweet or improved the taste by either masking or improving the taste of the food.

OBJECTIVE

- ☐ To introduce the miracle fruit as a natural sweetener alternative to the people of Tennessee,
- ☐ To grow the plant in the greenhouse, harvest the berry and perform a tasting panel and
- ☐ Introduce miracle fruit as an alternative cash crop for small scale farmers in Tennessee.

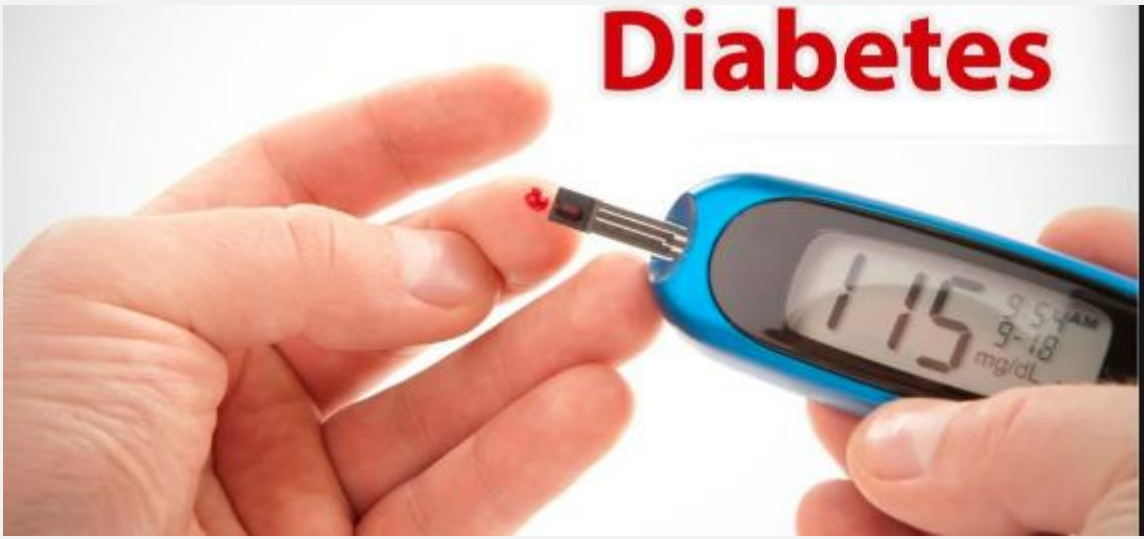
MATERIALS AND METHODS

Twenty (20) miracle fruit plants were ordered in a 2 gallon container. Miracle-Gro potting mix will be added. Peter’s 20-20-20 general purpose water soluble fertilizer with micronutrients will be applied. Once a month, 1 level teaspoon of osmocote fertilizer will be scattered on the soil except in November and December when it start getting cold. As plant mature and start to fruit, apply one fourth cup of fertilizer immediately fruit is picked until November

Mature Height:	2-3 ft.
Mature Width:	1-2 ft.
Sunlight:	Full-Partial
Growth Rate:	Slow
Harvest Time:	May-October
Year to Bear:	Can Fruit the 1st Year!
Botanical Name:	<i>Synsepalum dulcificum</i>



Add fertilizer as needed in the summer months



CONCLUSION

In response to the awareness due to the rise in health issues emerging from sugar and sugar substitutes consumption, consumers are being encouraged to reduce the intake of sugars to either natural low calorie or zero calorie alternative. Therefore, the need to introduce miracle fruit as sweetener to the people of Tennessee with a potential of agricultural sustainability, desirable taste qualities with a high score in a variety of metrics such as taste, safety, stability, solubility, cost, patentability and cost.

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ACKNOWLEDGMENT

This study was funded by the USDA Cooperative Research and Extension.