Greenhouse Germination Study:

Solanum aethiopicum

'Gilo' Variety Trial

At The Evergreen Organic Farm

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Abstract

Solanum aethiopicum has the potential to become an equitable crop in the PNW climate, however, these varieties lack public data and horticultural research within this particular region.

Introduction

Method

In TESC Organic Farm's heated greenhouse, all of the eggplant varieties were seeded in separate, 72-cell trays on March 18, 2024. Trays were filled with soil using a pre-mixed soil blend: Black Gold® Natural & Organic Potting Mix. 60 seeds were placed in each tray, leaving two rows at the end of each tray empty. Morro Redondo, *Solanum aethiopicum,* was mistakenly seeded with 72 instead of 6o seeds. Seeds were placed in approximately 1/4 inch dibbled holes, topped with soil, and watered. To replicate this crop's Indigenous environment in hot climates, trays were placed on heat mats at ~65 degrees Fahrenheit. Seedlings were overhead watered daily, by hand. Beginning on day 7, soil and ambient temperature was recorded daily. Temperature records were not accounted for on days 1-2 due to lack of proper temperature probes. Soil temperature was recorded as an average between the four trays, measurements were recorded using a digital soil temperature meter. Air temperatures were determined using the temperature gauge located inside the greenhouse. On day 19, the germination emergence for each variety was collected. Emergence was determined by visible plant growth above the soil surface.

Results

Results were impacted by pest damage done by mice. The over-planted variety, Morro Redondo, *Solanum aethiopicum,* was the variety experiencing the most damage due to mice. While the foliage was completely damaged off many, new foliar growth was already observed during the week subsequent to the occurance of mice damage. The mice damage was ≤ the overall seed population of Morro Redondo, *Solanum aethiopicum*, 'Gilo'. In other words, 47.7% of the germinated sprouts of Morro Redondo, *Solanum aethiopicum*, 'Gilo' were damaged.

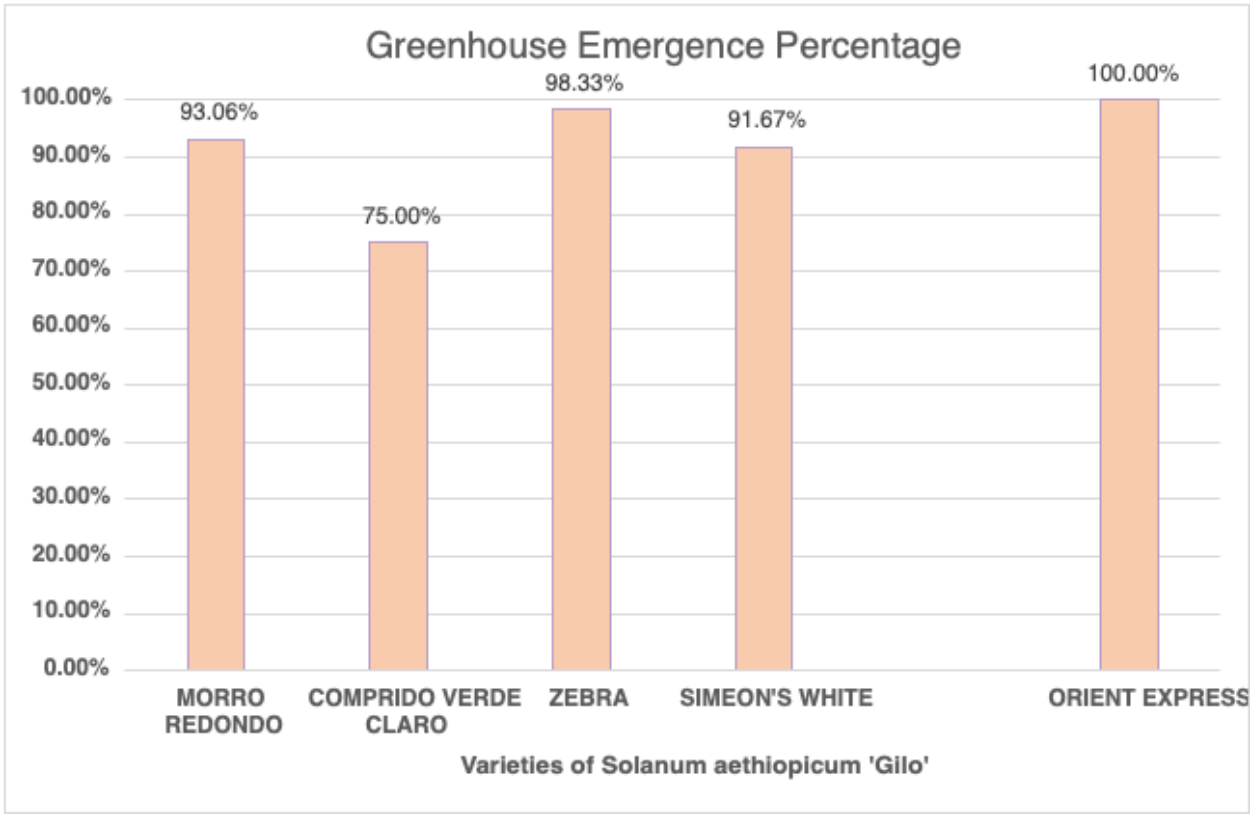
In *Table 1*, the percentage of emergence was calculated using the following formula:

$$\textbf{\% Emergence:} \quad = \frac{\#\ of\ Seeds\ Emerged}{\#\ of\ Seeds\ Planted} \times 100$$

Table 1: *Greenhouse Germination Emergence per* *Solanum aethiopicum Variety*

GREENHOUSE GERMINATION STUDY: *SOLANUM AETHIOPICUM* 'GILO' VARIETY TRIAL AT THE EVERGREEN ORGANIC FARM					
SOW DATE: 3/18/2024					
OBSERVATION DATE:	04/042024	PROVENANCE OF SEEDS	# OF SEEDS PLANTED	# OF SEEDS EMERGED	% EMERGENCE
SOLANUM AETHIOPICUM 'GILO' VARIETIES					
MORRO REDONDO		THRESH SEED COMPANY	72	67	93.06%
COMPRIDO VERDE CLARO		THRESH SEED COMPANY	60	45	75.00%
ZEBRA		NORTH CIRCLE SEEDS	60	59	98.33%
SIMEON'S WHITE		NORTH CIRCLE SEEDS	60	55	91.67%
CONTROL EGGPLANT VARIETY					
ORIENT EXPRESS		JOHNNY'S SELECTED SEED	25	25	100.00%

Graph 1: *Greenhouse Emergence Percentage per Solanum aethiopicum Variety*


Greenhouse Emergence Percentage
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
93.06%
75.00%
98.33%
91.67%
100.00%
MORRO REDONDO
COMPRIDO VERDE CLARO
ZEBRA
SIMEON'S WHITE
ORIENT EXPRESS
Varieties of Solanum aethiopicum 'Gilo'