

Introduction

Water stress has been an increasingly relevant topic for crop irrigation. Specifically, Salinity affecting plant development starting from germination to reproductive development; while producing ion toxicity, osmotic stress, nutrient deficiency and oxidative stress on plants (Shrivastava and Kumar 2015).

Background

- Increase Soil Salinization is having adverse affect on crop production
- Initial reduction in shoot growth is due to loss of cellular turgor pressure and hormonal signals generated by the roots (Aziz et al 2008)

Hypothesis

Control mint plants will have more root production after 2 weeks compared to the salt, drought and overwatered mint.

Works Cited

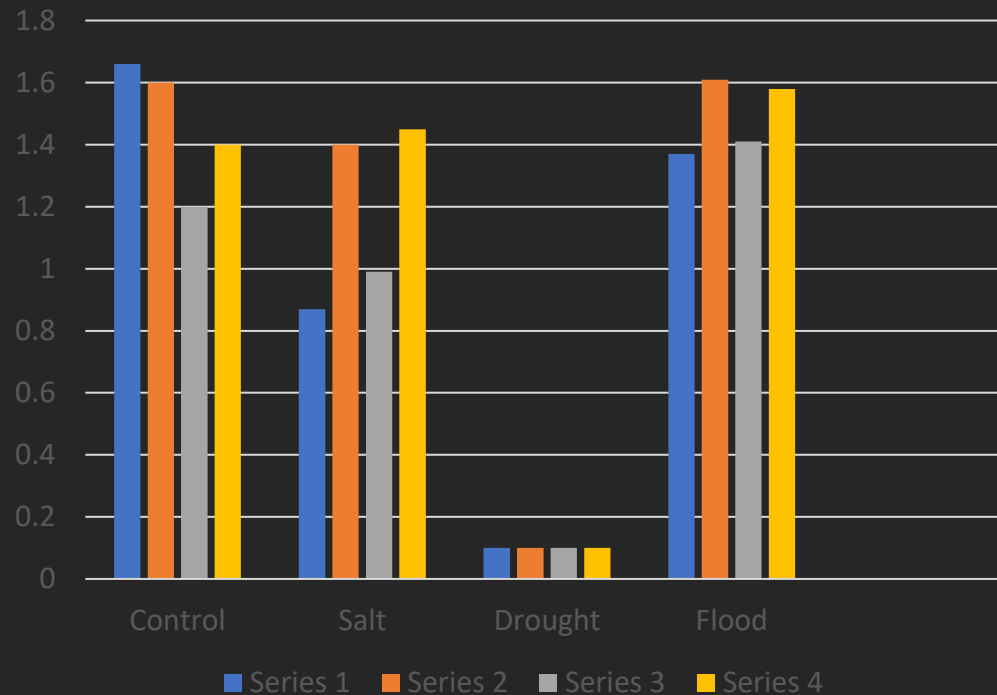
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Water Stress affecting Mint Cutting Propagation

Mint Root Mass



Control

Salt

Drought

Flood

METHODS

1. Four (4) cuttings per group were taken from the stock plant and dipped in CloneX to develop roots.
2. Two (2) Weeks later plant data was recorded, and treatment began
3. Saline Mixture was created using 4g of NaCl in 1L of tap water
4. Control and Saline were irrigated every 2 days with 30mL
5. Drought plants never received irrigation and flood plants received 60mL every day
6. Plant Data was recorded at the end of treatment
7. Roots were washed, final root weight, and length were compared to control.

RESULTS

Variable	Plant 1	Plant 2	Plant 3	Plant 4
Control	1.66g	1.60g	1.20g	1.40g
Salt	0.87g	1.40g	0.99g	1.45g
Drought	<1g	<1g	<1g	<1g
Flood	1.37g	1.61g	1.41g	1.58g

Take Home

Based on my findings, Mint crops seem to have some tolerance to high saline irrigation. The data provided could help commercial growers that plan to establish root cuttings in high saline soil or less than optimal irrigation.