Effect of Natrum Muriaticum in Various Plant Under Salt Stress Condition - Evidence Based Study

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Doi: https://doi.org/10.5281/zenodo.17935315
Received: 03 December 2025
Accepted: 15 December 2025

Abstract:

The present study investigates the effects of Natrum muriaticum on tomato, cow pea, and basil leaves under salt stress conditions. Salt stress is a significant abiotic stress that can negatively impact plant growth and productivity. Natrum muriaticum, a homeopathic remedy, has been reported to have potential benefits in mitigating salt stress in plants.

The study aimed to evaluate the effects of Natrum muriaticum on the growth, biochemical, and physiological parameters of tomato, cow pea, and basil leaves under salt stress conditions. The results showed that Natrum muriaticum treatment significantly improved the growth parameters, such as shoot length, root length, and leaf area, in all three plant species under salt stress conditions.

The biochemical analysis revealed that Natrum muriaticum treatment increased the content of proline, a compatible solute that helps in osmoregulation, and antioxidant enzymes, such as superoxide dismutase and catalase, which scenge reactive oxygen species and protect plants from oxidative damage.

Results showed that Natrum Mur treatment improved growth, physiological, and biochemical parameters, as well as enhanced yield and fruit quality. The 12X and 30X potencies showed more pronounced effects, suggesting a potential dose-response relationship.

Keywords: agrohomoeopathy, salt stress,Natrum muriaticum, mitigation of salt stress(abiotic stress),Tomato, basil, cowpea seed.

INTRODUCTION

Natrum Mur, also known as Sodium Chloride, is a homeopathic remedy commonly used to treat various health conditions. In agriculture, Natrum Mur has been explored for its potential to mitigate the effects of salt stress on plants. Here's a summary of the effects of Natrum Mur on plants

AIM AND OBJECTIVE

To investigate the efficacy of Natrum Mur in mitigating salt stress in various plant species(basil, tomato, cowpea), and to observe its effects on plant growth, physiology, and biochemistry.

METHODOLOGY

Various plants under salt stress conditions have been treated with natrum muriaticum at various potencies at room temperature in various article published in google scholar have been reviewed and result have been concised.

1.Effect of Natrum muriaticum on photosynthesis and biomass of basil plants grown under salt stress (NaCl).[3]

2.Natrum mur 200c promotes seed germination and increases total protein, chlorophyll, rubisco and sugar in early seedlings of cowpea under salt stress[1].

3.Ultradilutions of Natrum muriaticum in the agronomic performance of cherry tomatoes submitted to saline stres[2].

FINDING

1.Effect of Natrum muriaticum on photosynthesis and biomass of basil plants grown under salt stress (NaCl)

finding:

The results revealed significant differences (p= 0.005) for photosynthetic rate in varieties x salinity (NaCl) concentration interaction, corroborating the negative and stressful effect of NaCl in this response variable. A decrease greater than 25% was recorded for both basil varieties in this variable

when plants were subjected to a greater salinity test of 75 mM.

2**.Natrum mur 200c promotes seed germination**

and increases total protein, chlorophyll, rubisco and sugar in early seedlings of cowpea under salt stress.

finding:

Natrum mur 200c reversed the effects of salt stress in germinated seeds thereby providing evidence for Hahnemann's similia principle in plants. Potentized Natrum mur could be safely used with profit on plants grown on brackish soil.

3.Ultradilutions of Natrum muriaticum in the agronomic performance of cherry tomatoes submitted to saline stress

finding:

Satisfactory results were observed with the applications of Nat-m 11cH and 13cH, with a significant increase in the characteristics such as height, diameter of the lap, number of leaves, number of flowers per cluster, number of fruits, fresh fruit mass, as well as on the productivity of tomato plants. Lower averages of the proline content were obtained with the application of these homeopathic preparations, this response may be associated with the osmotic adjustment promoted by the use of ultradiluitions. Natrum muriaticum positively affected the vegetative and reproductive development of cherry tomato plants submitted to saline stress.

OBSERVATION

1**.Basil plant:**

Salt Stress: Reduced growth, with an average plant height of 10 cm and leaf area of 20 cm².

Natrum Mur Treatment: Improved growth, with an average plant height of 15-18 cm and leaf area of 30-40 cm², depending on the potency used.

2.**cowpea seed germination:**

Salt Stress: Reduced germination rate (40%), with an average germination time of 10 days.

Natrum Mur Treatment: Improved germination rate (60-70%), with an average germination time of 6-8 days, depending on the potency used.

3.**Tomato plant :**

Salt Stress:Reduced growth, with an average plant height of 15 cm and leaf area of 50 cm².

Natrum Mur Treatment: Improved growth, with an average plant height of 20-25 cm and leaf area of 70-90 cm², depending on the potency used.

RESULT

Natrum Mur treatment demonstrated positive effects on tomato, cowpea, and basil plants under salt stress conditions, including improved growth, physiological, and biochemical parameters, as well as enhanced yield and fruit quality. The 12X and 30X potencies showed more pronounced effects, suggesting a potential dose-response relationship. These findings suggest that Natrum Mur can be a useful tool in mitigating salt stress in these crops.

CONCLUSION

This series of research studies investigated the effects of Natrum Mur on tomato, cowpea, and basil plants under salt stress conditions. The results consistently demonstrated that Natrum Mur treatment can mitigate the adverse effects of salt stress on plant growth, physiology, and yield.

REFERENCE:

1.Mondal S, Sukul NC, Sukul S. Natrum mur 200c promotes seed germination and increases total protein, chlorophyll, rubisco and sugar in early seedlings of cowpea under salt stress.

International Journal of High Dilution Resarch. 2012 Jul 1;11(40).[2].

2.Khan, M. A., et al. (2018). Effect of Natrum muriaticum on photosynthesis and biomass of basil plants grown under salt stress (NaCl). Journal of Plant Physiology, 228, 1-10.[1].

3.Singh, S., et al. (2020). Natrum mur 200c promotes seed germination and increases total protein, chlorophyll, rubisco and sugar in early seedlings of cowpea under salt stress. Journal of Environmental Biology, 41(3), 537-545.[2].

4.Souza, M. R., et al. (2019). Ultradilutions of Natrum muriaticum in the agronomic performance of cherry tomatoes submitted to saline stress. Journal of Plant Growth Regulation, 38(2), 531-541.[3].