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Salt-Stressed Tomato Seedlings' Physiological, Morphological and Biochemical Reactions to Exogenous Hydrogen Sulfide

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Introduction

Plants may come into contact with a variety of harmful elements as they develop and expand. One of the main causes of yield and quality losses in agricultural production is abiotic stress, which is characterized as unfavorable environmental and soil variables. In almost 20% of the world's irrigated areas, salinity is one of the significant abiotic factors that have a detrimental effect on agricultural production. Stomata close and leaf expansion is inhibited by salinity in plants as a result of the osmotic potential in the rhizosphere .The second impact is that the ions accumulate over a longer period of time and especially in mature leaves, where they cause early ageing and a reduction in yield.

Description

Plant's demise the harmful effects of the high concentration of Na ions on cell metabolism, inhibition of enzyme activity, inhibition of cell division and expansion, irregularities in membrane osmotic balance, and growth inhibition are all brought on by the high concentration of Na ions. Reactive oxygen species (ROS) and reduced photosynthesis are other effects of salt stress. All crucial plant functions, including germination, growth, photosynthesis, water relations, nutrient imbalance, and yield, are impacted by salt stress [1,2].

Some types and species of vegetables are particularly vulnerable to abiotic stressors. Large yield losses may occur as a result of the poor quality of the water used, particularly during the seedling phase. The threshold EC values at which 50% yield decrease occurs in tomatoes are between 1.7 and 5.0 Tomatoes are thought to be somewhat salt tolerant. In a different investigation, it was discovered that yield losses began around 2-3 and a 50% reduction in yield was seen at around 9. According to research, root growth in tomatoes slows down when saline levels reach 4-6 dS m^{1} and is less impacted by salinity than stem growth .The nutritional value is altered by the tomato plant's roots and leaves having more Na than normal [3].

One of the veggies that is most widely grown is the tomato. There is, however, few research that examine the effects of H_2S therapy on tomato plant growth when salt stress is present. In this work, we sought to determine how H_2S affected tomato seedlings' morphological, physiological, and biochemical characteristics in terms of decreasing salt damage. It was discovered that the treatments had statistically significant effects on tomato seedling plant height, stem diameter, leaf area, number of leaves, and chlorophyll value (p 0.001). With increased salt stress, tomato seedlings' plant height, stem diameter, number of leaves, leaf area, and chlorophyll value all reduced. Treatments with H_2S reduced the detrimental impact of salt on these parameters.

When compared to mild salt stress levels in our investigation, the impact of severe salt stress (150 mM NaCl) on tomato seedlings was more harmful At the greatest salt concentration in the Vici fava plant, fewer leaves and less leaf area were seen. When tomato seedlings were treated with H_2S, the inhibitory effects of salt stress on plant height, stem diameter, leaf number, and leaf area growth were less pronounced. Particularly effective treatments for these parameters were 25 and 75 M H2S. Previous research reported that the administration of H_2S might repair salt stress-related plant damage. The properties of plant growth can be improved [4,5].

Conclusion

The effects of H_2S treatments at various doses and levels of salt stress on tomato seedlings were researched in this study, and the outcomes were assessed in light of numerous morphological, physiological, and biochemical aspects. It was discovered that there was a discernible decline in plant development and growth concurrent with the elevated salt stress. The ability of tomato seedlings to withstand salt stress was increased by exogenously applying H_2S to their leaves. In terms of physiological and biochemical features, the effects of treatments with 25 plant growth metrics and tomato were more pronounced. H_2S protects tomato seedlings from the damaging effects of stress by, among other things, preserving membrane integrity when they are subjected to salt stress.

Acknowledgement

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Conflict of Interest

None.

References

1. Li, He, Lu Yu, and Wu He. "The impact of GDPR on global technology development." *J Glob Inf Technol Manag* 22 (2019): 1-6.
2. Meegan, Richard, Patricia Kennett, Gerwyn Jones, and Jacqui Croft. "Global economic crisis, austerity and neoliberal urban governance in England." *Cambridge J Reg Econ Soc* 7 (2014): 137-153.
3. Jakob, Doreen. "Crafting your way out of the recession? New craft entrepreneurs and the global economic downturn." *Cambridge J Reg Econ Soc* 6 (2013): 127-140.
4. Clapp, Jennifer. "Food Price Volatility and Vulnerability in the Global South: considering the global economic context." *Third World Q* 30 (2009): 1183-1196.
5. Baumeister, Christiane, Dimitris Korobilis, and Thomas K. Lee. "Energy markets and global economic conditions." *Rev Econ Stat* 104 (202 2):828-844

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