

# Effect of Hydrogen Peroxide Pretreatment on Shade Tolerance in Maize (*Zea mays*)

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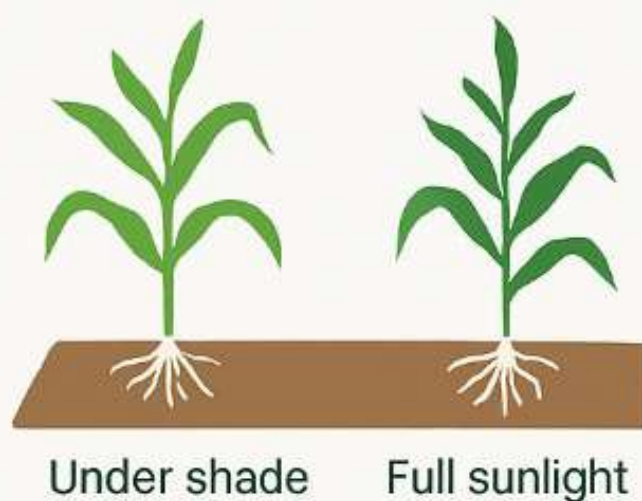
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## Introduction

Maize, a high-light requiring crop, experiences significant growth suppression under shade conditions often common in natural succession or agroforestry systems.

Hydrogen peroxide ( $H_2O_2$ ) is a key signaling molecule that can prime plants to tolerate abiotic stresses by activating antioxidant defense pathways.



## Key Findings

- Shade stress significantly reduces growth and physiological performance in maize.
- Pretreatment with 100  $\mu$ M and 200  $\mu$ M  $H_2O_2$  significantly enhances shade tolerance.
- Increase in antioxidant and osmolyte levels

## Conclusion

Seed priming with low concentrations of hydrogen peroxide is an effective, and low-cost method to improve shade tolerance in maize.

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Seed priming with low concentrations of hydrogen peroxide is an effective and low-cost method to improve shade tolerance.