Abstract ID: MRCBAS011

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Alleviation of Drought Stress by organic & inorganic nanoparticles in Plants: A review

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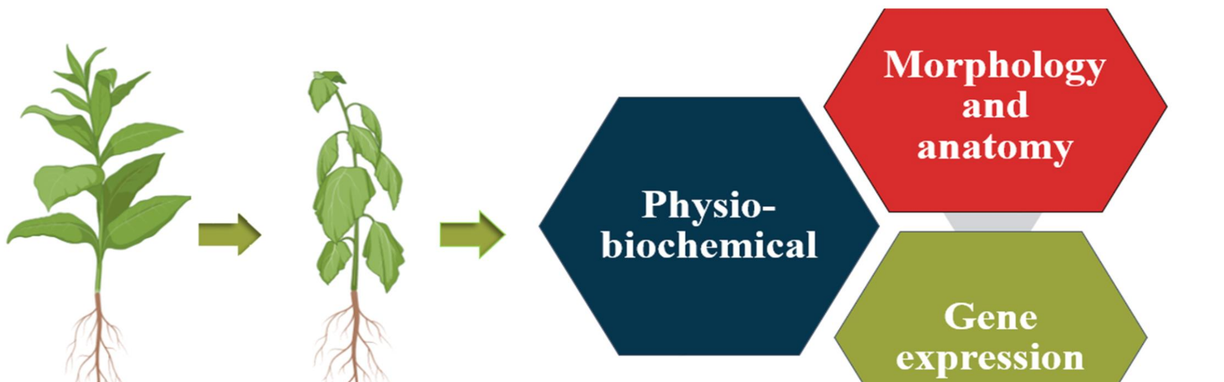
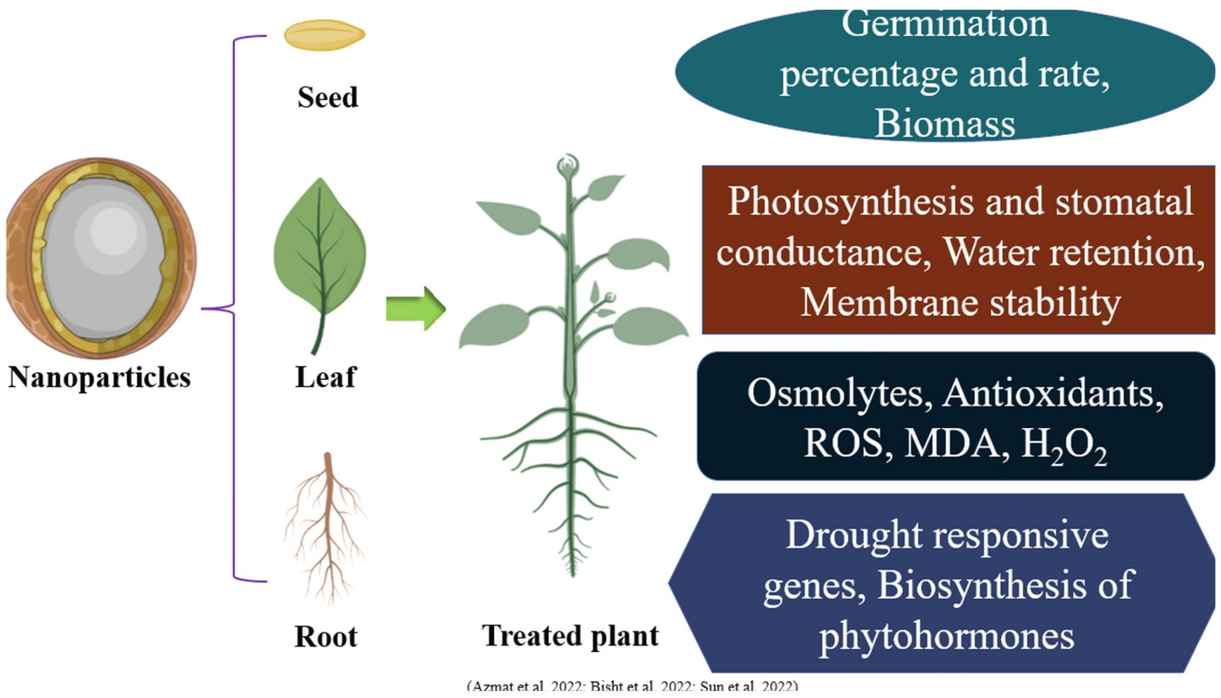
Introduction



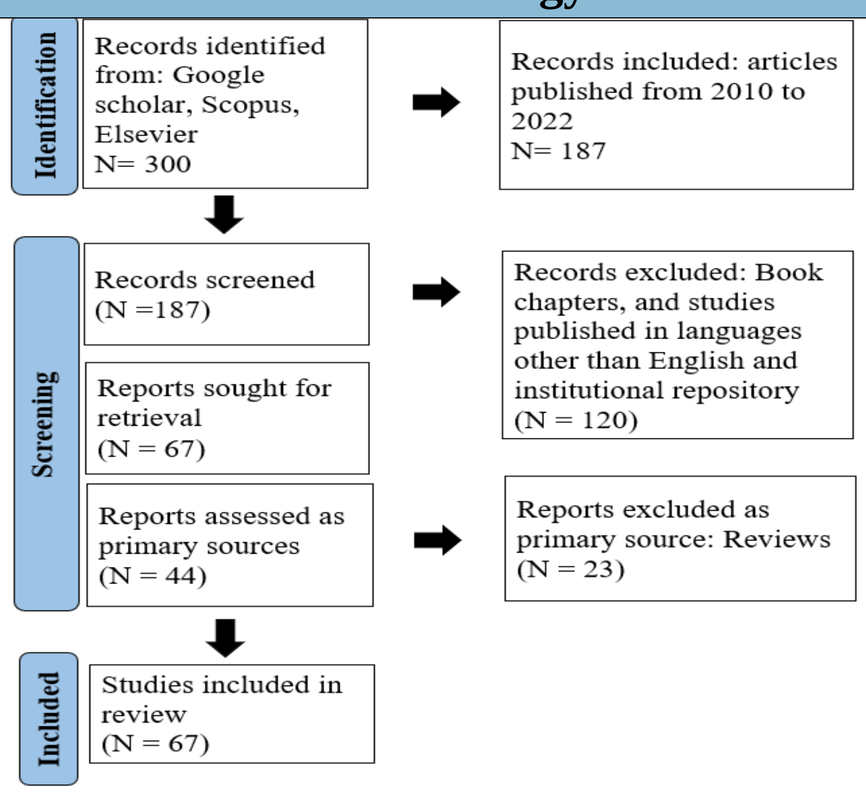


(Azmat et al. 2022; Bisht et al. 2022; Sun et al. 2022)

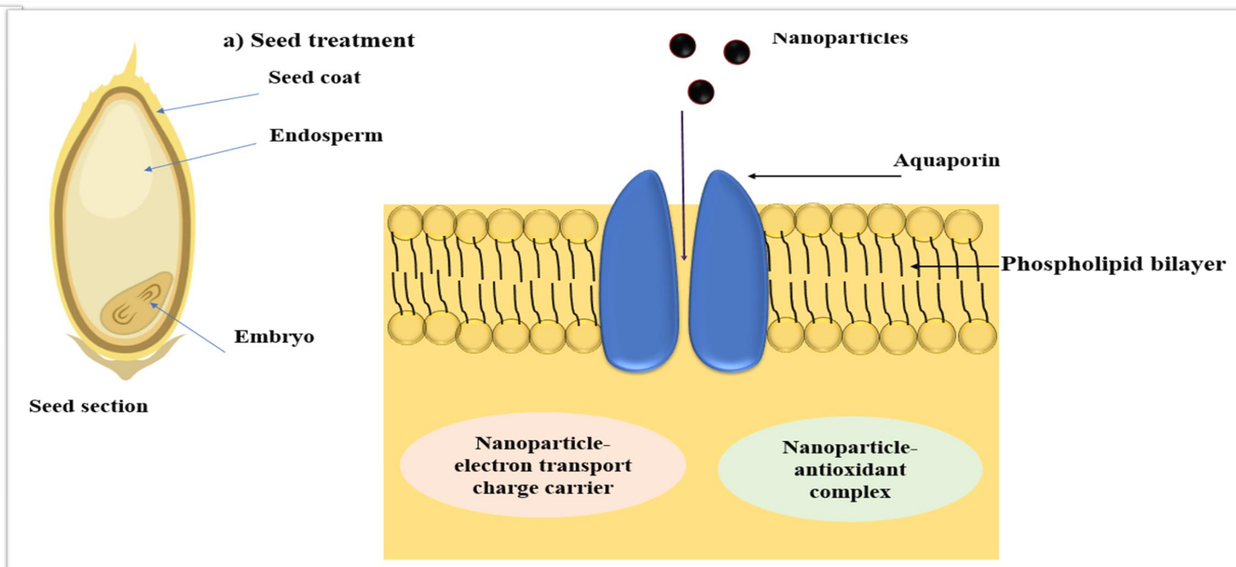
Aim

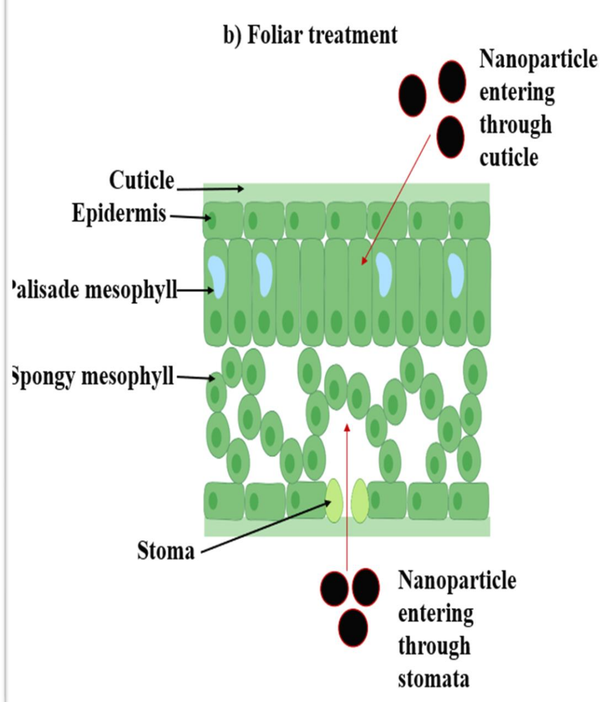
Understanding the mechanism of uptake of nanoparticles by the plants system through different method of exposure and nanoparticle induced physio-biochemical and molecular changes under drought stress.

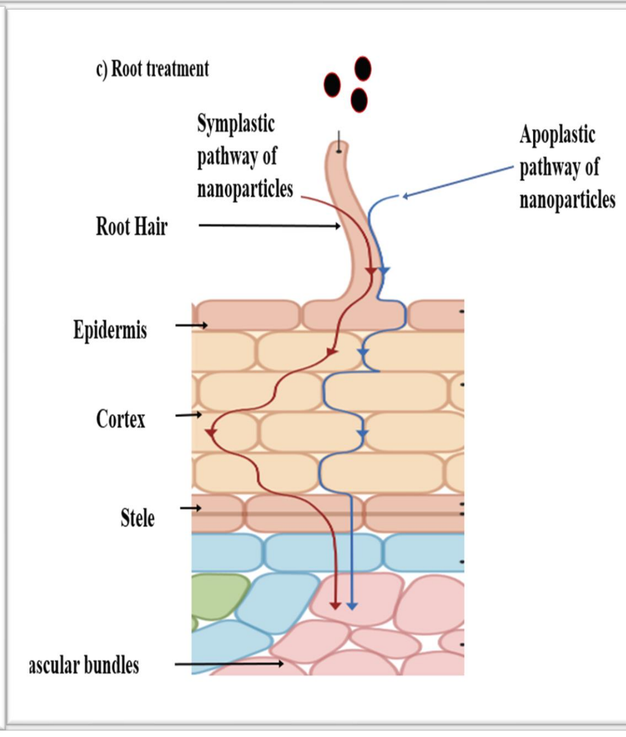
Methodology

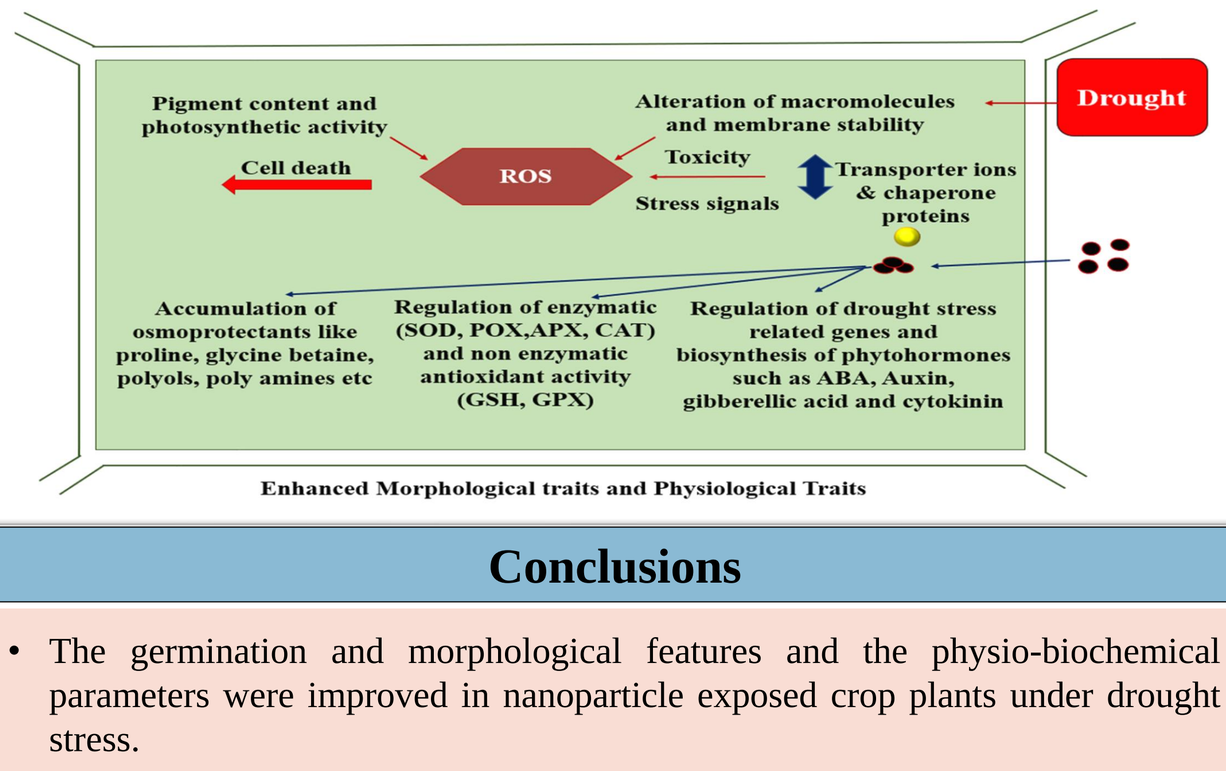


Results









Conclusions

- The germination and morphological features and the physio-biochemical parameters were improved in nanoparticle exposed crop plants under drought stress.
- The signaling pathways related to the biosynthesis of phytohormones and osmoprotectants were upregulated during the drought due to nanoparticle exposure.
- The precise mechanisms underlying nanoparticle transportation and its effects at the molecular level in drought-stressed crops still remain unknown.
- A better understanding of mechanisms of uptake, plant-nanoparticle interactions, compartmentalization and its beneficial role, are crucial to fill the knowledge gap and mitigate drought stress for sustainable crop productivity.

References

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Acknowledgements

We thank Manipal Academy of Higher Education (MAHE), Manipal School of Life Sciences (MSLS) and DBT Builder grant for the infrastructure and facilities. The authors (HKC, AK, TSA) are grateful to MAHE for Dr. TMA Pai Ph.D. fellowship. We are grateful to Prof. B. S. Satish Rao, Director, Manipal School of Life Sciences, MAHE, for his encouragement and support. We thank our DAC members, Dr. Padmalatha S. Rai, Dr. Krishna K Mahato, Dr. Shama Prasada, Dr. Vidhu Sankar Babu and Dr. Roopa Nayak for their suggestions. We would like to thank Mrs. Shashikala T. and Mrs Usha for their experimental assistance.

Presented at MRC-23, Manipal Academy of Higher Education, Manipal