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# Effect of Seed priming on Osmolytes Accumulation and Antioxidant Enzymes under Drought stress in Wheat

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***Abstract***

Drought is one of the most important abiotic stresses that negatively influences plant growth and development. It is an important yield-decreasing factor in winter wheat (Triticum aestivum L.). Osmotic stress is also one of the consequences of drought stress. Polyethylene glycol (PEG) is most commonly used to create osmotic stress in plants. Among various strategies, seed priming is low cost, easy and low risk approach to improve the abiotic stress tolerance in crop plants.

The present research work was carried out with a view to evaluate the effect of some seed priming methods *viz*. Hydropriming, Halopriming, Osmopriming and Hormonal priming for 12 hours at room temperature on accumulation of osmolytes (proline and glycine betaine) and activity of antioxidant enzymes (SOD and POX) under PEG 6000 induced osmotic stress at two level (2% and 5% stress level). Determination of Proline content and Glycine betaine, Activity of Antioxidant enzymes *viz.* Superoxide dismutase (SOD) and Peroxidase (POX) were analyzed in primed and non-primed wheat seedlings. It was found that all seed priming method except Hormonal priming (50 ppm Salicylic acid) failed to germinate and grown but other three priming methods were resulted in better improvement in accumulation of osmolytes and antioxidant enzymes activity than Non-primed wheat seedlings. Amongst all seed priming methods Osmopriming with Ascorbic acid (2 mM) was showed best results at both stress level (2% and 5% PEG 6000 stress level.)

***Biography:***

Jaybhaye Siddhant Gahininath has completed Bachelor of Science in Agricultural Sciences (4yr) at Mahatma Phule Agricultural University, Rahuri, India.

He has also Completed 4 months Dissertation project on “Abiotic stress management in crops using sustainable agricultural practices” and currently pursuing Master of Science in Agriculture (specialised in: Plant Biotechnology) at Vasantrao Naik Marathwada Agricultural University, Parbhani, India