



## RESEARCH PAPER

# Effect of seed priming and foliar application of thiourea for mitigating water stress in wheat (*Triticum aestivum* L.)

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**Abstract :** Field research entitled “Effect of seed priming and foliar application of Thiourea for mitigating water stress in wheat (*Triticum aestivum* L.)” was conducted to find out the impact of water stress on phenology, the effect of seed priming and foliar application of thiourea on growth and productivity of wheat. The experiment consisted of sixteen treatment combinations comprising four levels of water stress (i) Normal sowing- no water stress (ii) Normal sowing- water stress at flag leaf (iii). Late sowing- no water stress and iv. Late sowing- water stress at flag leaf) and four levels of thiourea application (i) Water spray (ii) Seed treatment with 500 ppm (iii) Seed treatment with 500 ppm + Foliar spray 1000 ppm (iv) Seed treatment with 500 ppm + Foliar spray of 2000 ppm). Combination of these treatments were evaluated under split plot design with four replications. The water stress at flag leaf stage was imposed by skipping irrigation at 50 days after sowing. Water stress significantly reduced the plant height, spike length, spikelet ear<sup>-1</sup>, grains per spike and 1000-grain weight of wheat variety HI-1634 (Pusa Ahilya). Water stress at flag leaf stage caused in reduction of grain yield by 4.3% under normal sown- no water stress (4177 kg ha<sup>-1</sup>) and 22.1% under late sown- no water stress (3129 kg ha<sup>-1</sup>). Similar trends were also observed with respect to straw and biological yields. Water stress at flag leaf stage fetched lower 5481<sup>1</sup> / ha and 25536<sup>1</sup> ha under normal and late sown wheat. The maximum heat use efficiency of 2.8 and 7.2 kg ha<sup>-1</sup>/ °C Day was recorded under normal sown wheat with no water stress. The foliar application of thiourea 2000 ppm + seed treatment with 500 ppm thiourea produced significantly maximum growth and yield parameters of wheat. However, the foliar application of thiourea 1000 ppm + seed treatment with 500 ppm thiourea fetched maximum net return.

**Key Words :** Wheat, Thiourea, Seed priming, Water stress, Yield, Net return

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