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Unravelling the Maze of Pre-conditioning Treatments on Germination, Seedling Growth and Survival of *Callistephus chinensis* (L.) Nees

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Abstract—*Plants raised from primed seeds are known to show structural modifications at all three levels (root, stem, and leaf), improved germination and the better performance of plants is attributed to improved structural components cortical including vascular bundle thickness in leaf and increased pith cell area in stem. Subsequently, to scrutinize the impact of various priming methods on germination, seedling survival and growth of cv. Powder-puff of China aster newly introduced in Kashmir valley was undertaken at the Plant tissue Culture laboratory.*

Seeds were subjected to two treatment methods (3 hydro-priming and 2 halo-priming), constituting a total of six treatment combinations (P_0-P_5) in completely randomized design with four replications. The analysed variables were germination percentage, seedling survival percentage, seedling collar diameter, seedling fresh weight, shoot/root ratio and number of leaves per seedling.

The analysed data on influence of priming treatments on germination percentage is depicted that table that different priming agents are having significant influence on pre and post germination attributes. Significantly maximum germination percentage (87.50 %), seedling survival percentage (81.95), seedling fresh weight (0.0031g), seedling collar diameter (0.101 cm), number of leaves seedling^{-1} (7.01) and shoot-root ratio (1.044)was recorded in treatment P_5 (2 % KNO_3 18h) and minimum (42.50) in case of control (P_0) i.e. un-primed seeds.

Keywords*: seed, China aster, KNO_3, priming, growth, germination.*