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Effect of gibberellic acid and thiourea on seed germination, growth and survival of papaya (*Carica papaya* L.) *cv*. Pusa nanha and Pusa delicious

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ABSTRACT : Papaya (*Carica papaya* L.) is mainly propagated through seeds and seedlings are raised in the nurseries before transplanting in to main field. The seeds are covered with sarcotesta, a whitish succulent and translucent material, which has been reported to delay germination. The freshly extracted seeds exhibit dormancy, when sown immediately and the dormancy can be broken by after-ripening by storage for a short period, but prolonged storage also results in poor germ inability. Treatment of seeds with growth regulators and certain chemicals has been found to break dormancy and improve the germination. A field experiment was carried out at Department of Horticulture, Sam Higginbottom Institute of Agriculture, Technology and Science, Allahabad. India during 2012-13. The experiment was laid out in randomized block design with 13 treatments in three replications on different cultivars. The treatments included soaking the seed in GA_3 (100, 200 and 300 ppm), and Thiourea (1000, 2000, and 3000) for 12 hr duration along with a control. The results revealed that maximum germination (86.66%), seedling height (26.13cm), number of leaves (14.83), stem diameter (10.36 mm), plant speared (24.25cm^2), survival percentage (84.61%) and minimum days required for completion of germination (15.33) were recorded in GA_3 at 200 ppm in *cv*. Pusa nanha, followed by seed treatment with GA_3 300 ppm in *cv*. Pusa nanha. The least values were recorded in the control.

Key Words: Papaya, seed treatment, germination, GA_3, and thiourea.