

COPPER AND CADMIUM SULPHIDE NANOPARTICLES CAN INDUCE MACROMUTATION IN *NIGELLA SATIVA* L. (BLACK CUMIN)

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Abstract: Dry seeds (moisture content: 5.0%) of *Nigella sativa* L. (Family: Ranunculaceae; common name- black cumin, spice of commerce with immense therapeutic uses) are exposed to chemically synthesized copper (Cu) and cadmium sulphide (CdS) nanoparticles (NPs) at the doses of 0.25, 0.50 and 1.00 µg/ml for 3 and 6 h durations. EMS (ethyl methanesulphonate-0.25, 0.50 and 1.00%, 3 and 6 h durations) and gamma irradiations (25, 50, 100, 200 and 300 Gy; ⁶⁰Co source) are used as positive control. The objective of the work is to foresee whether NPs can induce stable phenotypic mutation. The present communication highlights macromutation types and frequency, mutagenic efficiency and effectiveness and meiotic chromosome behaviour in treated materials and suggests the efficacy if NPs in inducing mutation in *N. sativa* and crop improvement.

Keywords: Cu- and CdS-NPs, Macromutants, Meiotic analysis, Mutagenic efficiency and effectiveness, *Nigella sativa*

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