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The genotoxic potential of two heavy metals in inbred lines of maize (Zea mays L.)

Prashant KUMAR RAI[1], Girjesh KUMAR[2]

[1]Plant Genetics Laboratory, Department of Botany, University of Allahabad, Allahabad-211002, U.P. - INDIA

[2]Department of Botany, University of Allahabad, Allahabad-211002, U.P. - INDIA

Abstract: The genotoxic effects of 2 heavy metals (mercury chloride and cadmium chloride) on the gametic cells of 6 inbred lines of maize were tested in terms of cytological abnormalities. Meiosis was normal under control conditions. During the treatments with mercury and cadmium there was a concentration-dependent increase in meiotic abnormalities in all the inbred lines. A wide spectrum of chromosomal aberrations in the treated sets was stickiness, followed by laggards, bridges, scattering, precocious movement, fragments, etc. Maximum chromosomal anomalies were observed in inbred line CM-142 in both the treatment sets of heavy metals. Compared to $CdCl_2$, $HgCl_2$ induced more chromosomal damage in all the inbreds. Of the 6 inbreds examined during the present investigation, CM-138 was the most tolerant to both heavy metals, while CM-142 was the least resistant.

Key words: Zea mays, inbreds, mercury, cadmium, chromosomal anomalies

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