

MORPHOLOGICAL AND CYTOLOGICAL STUDIES IN *NIGELLA SATIVA* L. AND *N. DAMASCENA* L. (RANUNCULACEAE)

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Abstract: *Nigella sativa* L. (black cumin; potential herb with immense therapeutic uses apart from its spice yielding property; cultivated variety – *Persian Jewels*) and *Nigella damascena* L. (commonly known as ‘love-in-a-mist’, grown in gardens throughout temperate region of the world; cultivated variety – *Miss Jekyll blue* obtained from Sutton and Sons’, Kolkata and an accession 0016287 obtained from Royal Botanical Garden, Kew, London) members of the family Ranunculaceae were grown in the Experimental field plots of Department of Botany, Kalyani University (Nadia, West Bengal plains, latitude 22°50’ to 24°11’ N, longitude 88°09’ to 88°48’ E, elevation 48 ft. above sea level, sandy loamy soil) for three consecutive years as rabi crop. The plant types were described and Kew accession was found to be unique and better adaptive than that of Sutton samples of *N. damascena*. Morphometric (plant height, primary and total branches/plant, capsule/plant, capsule length, seta/capsule, filled seeds/capsule, seed weight/plant as well as capsule and flower sterilities) and meiotic (mean chromosome association/cell at metaphase I, bivalent configurations, chiasma/nucleus, anaphase I segregation and pollen fertility) parameters were assessed in the plant types and statistical analysis (χ^2 -test of heterogeneity and Student t-test) of the accumulated data revealed significant variations among/between plant types for most of the traits. Results indicated the possibility of efficient breeding between species/accessions for enhancing gene pool of *Nigella*.

Keywords: Efficient breeding, Meiosis, Morphometric traits, *Nigella damascena*, *Nigella sativa*.

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