

Cytogenetics and reproductive output of two species of *Artemisia* L. inhabiting NW Himalayas

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ABSTRACT

Present study is based upon two species of *Artemisia* i.e. *Artemisia nilagirica* (C.B. Clarke) Pamp. and *Artemisia scoparia* Walst & Kit. which form populations including a wide range of altitude (332-1705 masl) in regions which fall in lower Himalayan ranges of Jammu i.e. Jammu, Rajouri, Kud, Poonch and Bhandarwah. The two species differ with respect to their sex expression as well as meiotic system. Plants of *A. nilagirica* are gynomonoecious while that of *A. scoparia* are functionally monoecious. While *A. nilagirica* is highly complex cytologically and capable of generating variations both through its meiotic system as well as breeding system; all the populations of *A. scoparia* (Jammu, Rajouri and Kud) are cytologically stable diploids with $2n=16$. Among five populations of *A. nilagirica* (Jammu, Rajouri, Kud, Poonch and Bhandarwah) investigated, four cytotypes could be identified ($2n=18, 32, 34$ and 54). Although the chromosomal changes have an effect upon the seed set in this species in the form of reduced percentage of healthy seeds; little amount of variability that survives and adapts is maintained and ramified asexually through rootstock. The presence of flexible meiotic system has helped *A. nilagirica* to expand its range and spread in diverse habitats.

Keywords: *Artemisia*, gynomonoecious, cytology, flexible, chromosome