

Reproductive Biology of *Uraria picta* (Fabaceae): A Vulnerable Medicinal Plant of India

Kanak Sahai and Krishna K. Rawat

Seed Biology Laboratory, CSIR-National Botanical Research Institute, Rana Pratap Bagh,
Lucknow 226 001, India

ABSTRACT

Reproductive biology of *Uraria picta* (Jacq.) Desv. ex DC., a vulnerable medicinal legume, was studied in detail including floral phenology, floral biology, fruit and seed set, breeding system and pollinator's activity. Various breeding experiments were conducted in the field to determine the self and geitonogamy+xenogamy pollination output and pollinator's role in pollination success. The study suggests that though *U. picta* exhibits a mixed mating system, self-pollinated (cleistogamous/autogamous) flowers produced less fruits/seeds per inflorescence. Some times herkogamy caused failure of spontaneous self-pollination. Fruit set was significantly reduced when insects were excluded. However, geitonogamy+xenogamy had increased fruit/seed set via external vector, which was required to expose concealed pistil and stamens and finally to transfer self pollen as well as geitonogamous/xenogamous pollen onto the stigma. Fragmented population of few individuals of *U. picta* exhibited low reproductive success in the wild. Insufficient pollination due to scarcity of suitable pollinator is probably the main cause, which is a big threat to its existence in the wild. In addition, the study suggests *Apis florea* a suitable pollinator for *U. picta*.

Key words: *Apis florea*, floral biology, herkogamy, cleistogamy, autogamy, xenogamy, geitonogamy

Author for correspondence: Kanak Sahai, e-mail: sahaikanak@rediffmail.com