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Cover: Stripe-necked Mongoose *Urva vitticollis* in poster colours, adapted from photograph by Ashni Dhawale, by Pooja Ramdas Patil.



Kukumseri: a home to *Colchicum luteum* Baker (Colchicaceae), a rare and endangered medicinal herb

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Colchicum luteum Baker (Colchicaceae) commonly known as Hirantutiya (Hindi), Hiranyatutha (Sanskrit), Suranjantalkh (Urdu), and Kukum (locally) is an important medicinal herb, used in various traditional herbal medicine systems (Ayurveda, Siddha, Unani) (Rather et al. 2022). The species contains alkaloids including, colchicine & democolcine which have anti-mitotic properties and used for the treatment of solid tumors and leukemia (Ondra et al. 1995; Yue et al. 2010). *C. luteum* also reported to have analgesic, anti-inflammatory, antimicrobial, aphrodisiac, carminative, laxative & wound healing properties, and especially useful in gout, rheumatism and Alzheimer disease (Aisen et al. 2001; Javed et al. 2005; Rather et al. 2022). The said effects have been well proven in various studies through animal models (Ahmad et al. 2006; Akbar 2020)

Colchicum luteum is found in the Hindu Kush-Himalayan region and has very restricted distribution, endemic to certain places only, and considered as a rare species (CAMP report 2010; Rather et al. 2022). The habitat specificity; requirement of low temperature, less relative humidity and specific soil types for growth are being the reasons for their restricted distribution among others. Besides its restricted distribution and rarity, the indiscriminate over-exploitation for medicinal use has further endangered the survival and has been categorized as an endangered plant species (CAMP

report 2010). In Indian Himalayan region (IHR) *C. luteum* has only been reported from certain places of Kashmir and Himachal Pradesh (Ved et al. 2003). The literature revealed, lack of systematic studies on diversity and distribution of *C. luteum*, the available data being either subjective or ethnobotanical. Further, the absence of species in detailed reports/ works on flora of the area including, flora of Lahaul-Spiti (Aswal & Mehrotra 1994) confirm the same. Rather et al. (2022) also observed the lack of information regarding distribution and population size of *C. luteum* from Kashmir Himalaya.

Therefore, to explore the distribution and population size of *C. luteum* in Lahaul, Himachal Pradesh, India, a survey was conducted during March–April, 2021 and 2022. The species was found on open moist slopes between 2,650–3,000 m elevation (Images 1 & 2). The species appeared soon after the melting of the snow in March and were the earliest plants to flower during spring, completing the growth cycle (vegetative, flowering, and seed set) within two to three months (March–May). During this period of the year the area remains mostly snow bound, less accessible, and has poor vegetation due to unfavorable or cold weather conditions. Thus, due to above listed facts (habitat specificity, rare and endangered population status and comparatively very short life cycle during unusual period of the year) people rarely visit the places and/

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Images 1 & 2. *Colchicum luteum* in its natural habitat in Lahaul, Himachal Pradesh. © Rajender Kumar Sharma.

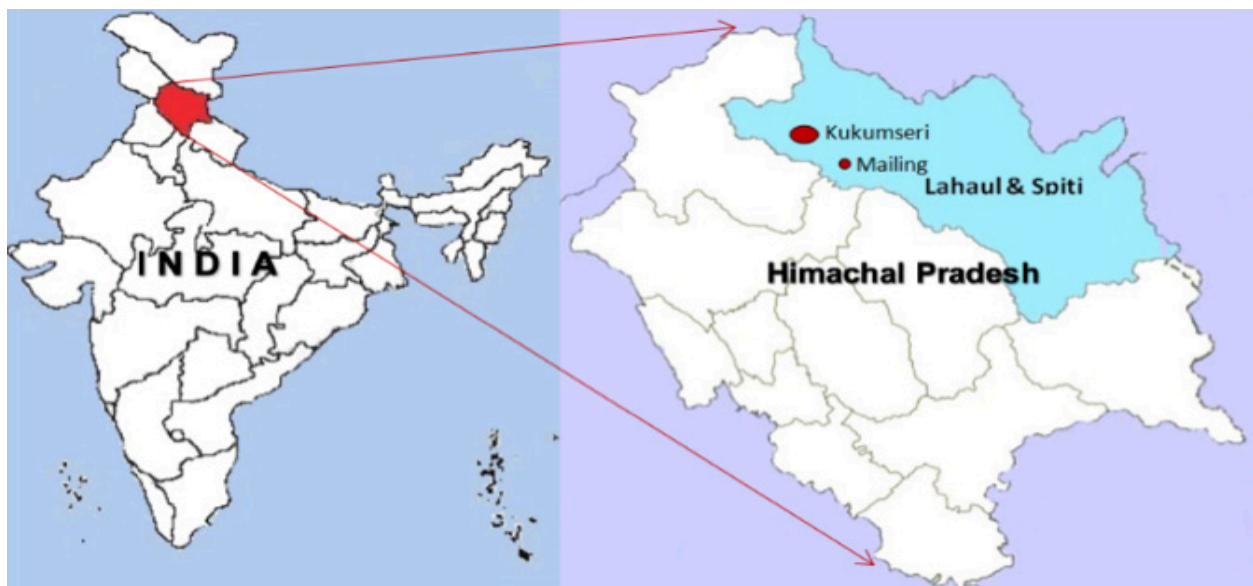


Figure 1. Locations of *Colchicum luteum* population in Lahaul, Himachal Pradesh, India.

or notice the species during the said period. Therefore, despite the importance of this elite genotype (Wagh et al. 2015), the species has been poorly investigated.

In the present study area, the species were recorded at two locations: Mailing (32.605°N, 76.934°E, 2,925 m elevation) and Kukumseri (32.698°N, 76.687°E, 2675 m elevation) (Figure 1 & Image 3). The observed species density in Mailing and Kukumseri was 6.4 ± 5.7 and $3.08 \pm 4.15/m^2$, respectively, determined by counting the total number of individuals of a species in all quadrants (1×1 m, each), and divided by total

number of quadrants studied. The extent of occurrence (EOO) of species in Kukumseri region was found higher than the Mailing. In Mailing, the species were only distributed in an area of about three Km². The distribution of species only to a certain specific place seems due to the requirement of specific soil condition, and the latter need to be explored. Very interestingly, it was observed that one location (Kukumseri) has been named after the species (*Colchicum luteum*) where, 'Kukum' means *Colchicum luteum* and 'Seri' means field. Thus, 'Kukumseri' means, the field of *Colchicum luteum*.



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Images 3. A view of habitat of *Colchicum luteum* population at Kukumseri in Lahaul, Himachal Pradesh, India.

Furthermore, the location justifies its name due to the presence of a reasonably large number of species in the area. Recently, huge destruction of natural habitat (4.2 ha) in Kukumseri, has been done for the opening of Krishi Vigyan Kendra (2.6 ha) and College campus (1.6 ha). The latter would have been avoided considering the restricted distribution, habitat specificity, rarity, endangered status and medicinal/economic importance of *C. luteum*.

The information reported here will be of immense help to locate and visit the places at appropriate period of the year for studies, aimed at propagation, cultivation, and conservation of the species. Further, such data plays crucial role while assessing the population status of the species.

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