ABSTRACT

The Western Ghats of peninsular India is a hot spot of biodiversity equally matched with tradition of rich indigenous knowledge. *Rotula aquatica* Lour. (Boraginaceae) is a medicinally important and overexploited riparian herb which has its natural habitat in the riverbeds. The present investigation was carried out in rivers of Kerala, to generate baseline data and inputs for the conservation of this valuable herb. After the systematic revision, *Rotula* was ascribed to, Kingdom: Plantae, Phylum: Tracheophyta, Class: Magnoliopsida, Order: Boraginales, Family: Boraginaceae, Genus: *Rotula*, Species: *R. aquatica* Lour. and *R. henryi* Jaison Joseph and V.T Antony *sp. nov*. Ethnobotanical information on *R. aquatica* shows that it is very effective in curing kidney stones, a major disorder all over the world. Over-exploitation of *R. aquatica* for ethnomedicine and ingredient in various ayurvedic formulations is a major threat to this valuable herb. The tribal communities in Kerala engaged in collecting non wood forest products emphatically reported that *R. aquatica* has become non available in their localities due to massive exploitation as a unique remedy for kidney stones. Adulteration in *R. aquatica* root is therefore practiced in crude drug shops. According to IUCN, the threat status of *R. aquatica* is not clear, as it belongs to the data deficient category. A total of 2741 km length of river beds surveyed in Kerala, *R. aquatica* populations occur only in 21.42 % and local extinction up to 36.59%. It has been observed that this species is locally extinct in Manimala river. The targeted exploitation and other anthropogenic interventions directly affected the existence and regeneration of this species. *R. aquatica* possesses bisexual flowers, self pollination and cross pollination do occur and there is no evidence of self incompatibility or absence of pollinators. Seed production is high and viability is higher up to 74.66%. Fruit/seeds are dispersed through hydrochory. Natural vegetative propagation takes place when trailing branches produces roots at their axillary bud leading to new daughter clump. Phytochemical comparison of stem and root proposes the substitute use of stem instead of roots, and destruction of plant during root excavation can be reduced. Population loss by anthropogenic interventions and overexploitation can be restored by reintroduction of seedlings and vegetative propagules on riverbeds to avoid its possible extinction in future.