The Biology of Temu Lawak (*Curcuma xanthorrhiza* Roxb.)

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ABSTRACT

This review is based on the study on the Indonesian *Curcuma* species initiated in 1973 aiming at understanding more about the biology of temu lawak. It covers several aspects of the plants, such as taxonomy, morphology, distribution, flowering behavior and cytology. The data, however, have been updated from time to time as new information become available. Most authors placed temu lawak in the subgenus Eucurcuma of the Section Exantha indicating that it produces lateral inflorescences. Morphologically, it is the most robust species both concerning upper ground (stems, leaves and inflorescences size) und under ground (rhizomes and bulbs) parts. It is believe to be native of Indonesia, frequently found naturalized in teak forests in Java, although the exact place of origin is not known for sure. It is commonly found and ground in Java and to some extent also in Bali. Its existence outside the island is strongly linked to the movement/migration of the Javanese, or perhaps also Sundanese, to the islands (Sumatera, Kalimantan, Sulawesi, Maluku, Papua, and Nusa Tenggara. It is now cultivated in large scale or in house yards almost through out the country. It is a triploid species with $2n = 3x = 63$ explaining its sterility state at the same time indicates that it may be a product of natural hybridization between a diploid and a tetraploid parents. Anthesis happens from 03.00 to 07.00 local (West Indonesian) time which is relatively late compare to a few other related species. Two species of bee namely, *Amegilla elegans and A. buruensis* were observed to be actively visiting the flowers suggested that they might be the pollinating agents. However because of sterility no seeds were produced. In conclusion, many interesting data and information on temu lawak were gathered, but further study, apart from its medical properties, is still needed for example its genetic variation, physiology and ecology. Those may be required to lay a foundation for the developing appropriate technology for its cultivation

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