

Asian hive bee *Apis cerana* as potential global genetic resource - VERMA Laiq Ram

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Asia is the richest region in the world in honey bee species diversity. The native Asian hive bee, *Apis cerana* is counter part of *Apis mellifera* in this region. Our research group has successfully identify three sub-species, namely; *Apis cerana cerana*, *Apis cerana himalaya*, and *Apis cerana indica* and these correspond to geographic distribution in the north-west, north-east Himalayas and sub-tropical Asia respectively. Amongst these, some geographic ecotypes of *Apis cerana cerana* match *Apis mellifera* in commercial value and have spectacular potentials for further genetic improvement by selective breeding and molecular research.

Extensive research by our group reveals that *Apis cerana* offers several comparative advantages over *Apis mellifera* as pollinator. These include initiation of early foraging at lower temperatures, longer foraging hours, shorter flight range, no competition for food and nesting sites with other bee species, co-evolution with native crops , more suitable for glass house pollination, better searching ability for sparse floral resources. Moreover this bee species is more docile and industrious in nature, less prone to attacks of wasps, and a high level of resistance to nosema disease and parasitic mites. *Apis cerana* can coexist with other native bee species and require little chemical treatment of colonies to control epidemics.

However, as yet, this native bee species has not become popular amongst beekeepers because of several behavioral characteristics. These include their frequent swarming and absconding, their tendency to rob, their production of a large number of laying workers, and their lower honey yields. These negative traits show eco-geographical variations depending upon the sub-species/geo-ecotypes and management efficiency of the beekeepers and are amenable through basic and action research.