

Pollination efficiency of *Apis mellifera* (Hymenoptera: Apidae) on *Jatropha curcas* (Euphorbiaceae) and its impact on yields in Maroua (Cameroon)

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Keywords: *Apis mellifera*, *Jatropha curcas*, Maroua, pollination, yields.

Submitted 11/11/2024, Published online on 31st January 2025 in the [Journal of Animal and Plant Sciences \(J. Anim. Plant Sci.\) ISSN 2071 – 7024](#)

1 ABSTRACT

Jatropha curcas L. 1753 is a plant from the Euphorbiaceae family capable of restoring soil and solving certain health problems. This work was carried out from June to July in 2022 and 2023 to assess the impact of *Apis mellifera* bees on fruit and seed yields of *J. curcas* in Maroua. In 2022, 60 flower bouquets left in free pollination constituting treatment 1; treatment 2, 60 floral bouquets isolated from insect visits; treatment 3, 60 flowers protected and open for a single visit from *A. mellifera*; treatment 4 consisting of 60 flowers isolated from insect visits, discovered and reprotected without visit. In 2023, the 1', 2', 3' and 4' treatments are the repeats of the first four treatments, respectively. The foraging behaviour of this bee, its pollinating efficiency on fruiting rate, the number of seeds per fruit and the percentage of normal seeds were evaluated. The results show that out of 13 insect species recorded on *J. curcas* flowers, *A. mellifera* comes in first place in 2022 and 2023 with 34.74% and 53.10% of visits respectively. This bee collects nectar heavily and pollen weakly. Through its pollinating efficiency, this bee has promoted a significant increase in the fruiting rate by 100%, the percentage of the average number of seeds per capsule by 20.27% and the percentage of normal seeds by 14.68%. The installation of honeybee hive close to *J. curcas* populations is recommended to improve capsule production, seed quality and honey yield.