

Assessing the influences of bee's (Hymenoptera: Apidae) floral preference on cashew (Anacardiaceae) agronomics performances in Côte d'Ivoire.

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1 ABSTRACT

This study aimed to assess the influence of bees' floral preference on cashew agronomics performances in Côte d'Ivoire. Therefore, a sampling design with a total of 40 cashew trees preferred by bees and 40 trees that were not preferred by bees was established in 4 main producing regions. In addition, bees' foragers and agronomics performances of trees were sampled. As results, a total of 46 bee' species with a foraging activity of 4 ± 0.32 visits per minute were observed. *Apis mellifera* (60% of visits, with 2.27 ± 0.17 of visitors per minute) followed by *Meliponula bocandei* (23% of visits with 0.91 ± 0.18 of visits per minute) contributes significantly to the reproduction of cashew trees, compare to the 44 other bees' species (17% of visits; with an activity of 0.69 ± 0.03 of visitors per minute). The preferred trees recorded 40.54 ± 0.57 kg of nuts per tree, with 18.39 ± 0.48 fruits per inflorescence, including $37.12 \pm 0.4\%$ of useful kernel per raw nut (yield ratio of 65.45 ± 0.66 pound of useful kernel). Conversely, the non-preferred trees obtained 5.24 ± 0.44 kg of nuts per tree, with 1.7 ± 0.21 fruits per inflorescence, including $28.69 \pm 0.65\%$ of useful kernel per raw nut (50.6 ± 1.15 pound of useful kernel). Hence, the foraging preference of these two Apidae significantly increased the fruiting rate ($83.7 \pm 0.01\%$), the yields ($87.08 \pm 0.0\%$), and the kernel rate ($22.68 \pm 1.76\%$) in raw cashew nuts. Based in these results, we suggest the foraging preference of *Apis mellifera* as good indicator of high-yielding cashew plants. Moreover, we suggests combination of apicultural and meliponicultrual in cashew farming to boost the yields and farmers livelihoods.