

Impact of a single *Amegilla calens* (Hymenoptera: Apidae) flower visit on *Solanum melongena* (Solanaceae), Black Beauty variety at Dourga-Maroua (Far North, Cameroon)

Saliou Saidou^{1*}, Auguste Pharaon Mbianda², Nadine Esther Otiobo Atibita², Joseph Blaise Pando¹ Fernand-Nestor Tchuenguem Fohouo³ and Joseph Lebel Tamesse⁴

¹University of Maroua, Higher Teachers' Training College, Laboratory of Life and Earth Sciences, P.Box 55 Maroua Cameroon

²University of Douala, Faculty of Sciences, Laboratory of Sciences Biology, PBox 24157 Douala, Cameroon

³University of Ngaoundéré, Faculty of Sciences, Laboratory of Applied Zoology, PBox 454 Ngaoundéré, Cameroon

⁴University of Yaoundé I, Higher Teachers' Training College, Laboratory of Zoology, PBox 47 Yaoundé, Cameroon

*Corresponding author email: saliouaidou723@gmail.com; Tel.: (+237)695185885

Key words: *Solanum melongena*, flowers, *Amegilla calens*, pollination, yields

Submitted 12/10/2024, Published online on 31st January 2025 in the [Journal of Animal and Plant Sciences \(J. Anim. Plant Sci.\) ISSN 2071 – 7024](#)

1 ABSTRACT

To assess the impact of the wild bee, *Amegilla calens*, on *Solanum melongena* yields, its foraging and pollinating activities were examined in Dourga-Maroua for two years, July-December 2022 and June-November 2023. Observations were made on 300 flowers every year divided in two treatments: the first with flowers protected (100), uncovered then rebagged without any visit and the second, flowers protected (200), uncovered when flowers were opened, to permit a single *A. calens* visit in 2022. Then, the process is renewed in 2023. The wild bee's seasonal rhythm of activity, its foraging behaviour on flowers and its pollination efficiency on yields were evaluated. Results showed that, *A. calens* foraged flowers on *S. melongena* from 8 am to 3 pm, with peak activity between 8-9 am. On *S. melongena* flowers, wild bee *A. calens* intensely and exclusively foraged pollen. The mean abundance forager per flower was 1 ($n = 136$; $s = 0$), the foraging speed was 14.24 flowers/min ($n = 102$; $s = 13.91$) and the duration of visits was 4.91 s ($n = 91$; $s = 2.8$) to collect pollen. *Amegilla calens* is an effective pollinator, it shakes flowers, and this movement could facilitate the liberation of pollen by anthers, for the optimal occupation of the stigma and of course their visits increase yield. Through its pollination efficiency on *S. melongena*, *A. calens* has increased the fruiting rate by 17.95 %, number of seeds/fruits by 10.65% and the percentage of normal seeds by 4.59%. Conservation of *A. calens* nests close to *S. melongena* fields could be recommended to boost fruit and seed production in the area.