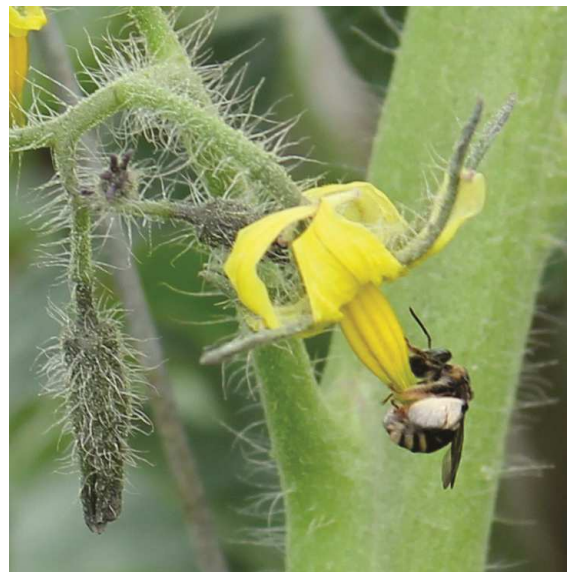


NATIVE BEES POLLINATE TOMATO FLOWERS AND INCREASE FRUIT PRODUCTION

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The tomato plant has a specific relationship with native pollinators because the form of its flowers is adapted to buzz pollination carried out by some pollen-gatherer bees that vibrate their indirect flight muscles to obtain that floral resource. The absence and the low density of these bees in tomato fields can lead to pollination deficits for crop. The aim of this study is to demonstrate that open tomato flowers, probably visited by native pollinator, have greater pollen load on their stigma than unvisited flowers. Another objective is to show that this great pollen load increases fruit production. We selected crops of the Italian tomato cultivar in areas of the State of Goiás, Brazil. Thirty seven plants of three crops each had one inflorescence bagged in the field. Bagged and non-bagged flowers had their stigmas collected and the amount of pollen on their surfaces was quantified. For the comparison of fruit production, we monitored bagged and not-bagged inflorescences and after 40 days, their fruits were counted, weighed, measured and had their seeds counted. The amount of pollen grains on the stigma of flowers available to pollinators was higher than that on the stigma of bagged flowers. On average, fruit production was larger in not-bagged inflorescences than in bagged inflorescences. In addition, not-bagged flowers produced heavier fruits than did bagged flowers. There was a significant difference in the number of seeds between treatments, with significantly more seeds in the non-bagged fruit. Our results show that native bees buzz-pollinate tomato flowers, increasing the pollen load on their stigma

and consequently fruit production and quality.



Exomalopsis sp. (above) and *Eulaema nigrita* (bellow) pollinating a tomato flower in Goiás – Brazil.