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DROUGHT AFFECTS NECTAR AVAILABILITY TO POLLINATORS IN *Cucurbita Pepo* L.

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ABSTRACT

Floral nectar is a highly energetic secretion, widely found in angiosperms and consumed by several groups of pollinators, being the trophic resource that most frequently mediates plant-animal interactions. Changes in abiotic factors can affect nectar characteristics, influencing pollinator attraction and behaviour and, consequently, the maintenance of plant-pollinator interactions.

We investigated whether changes in rainfall, as predicted by the IPCC (AR-6), affect the floral nectar production and the abundance of this trophic resource to pollinating bees of *Cucurbita pepo* L. in an agricultural scenario.

We submitted 60 plants to one of two treatments: [Control] average natural rainfall in Botucatu-Brazil during the period in which this crop is cultivated and [Drought] simulating periods of extreme drought. We investigated the effects of the treatments on nectar production including its volume, concentration, and the amount of sugar per flower and per plant. Additionally, we estimated the resource abundance in an agricultural scenario, using data on the caloric supply per hectare.

We verified a decrease in nectar production per flower and per plant, as the number of flowers per plant was also reduced in drought treatment. The drought treatment reduced the caloric offer available to floral visitors from 1.32 t to 71 kg per hectare. Changes in trophic resource supply can alter pollinator attraction and decrease visitation in cultivated areas, negatively affecting the *C. pepo* fruit production. Furthermore, lower food availability can change pollinator feeding patterns impairing the maintenance of their local populations. Thus, potentializing the decline in zucchini production.

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