Determining the Availability of Pollen Sources for Honeybees on Deciduous Fruit Farms in Summer

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Honeybees are essential for pollination of deciduous fruit crops and honey production. Globally, in the context of food security, there has been increasing attention to the survival and sustainability of honeybee populations. This project investigated the availability and sources of pollen collected by honeybees on a deciduous fruit farm in the Piket Bo-berg area, Western Cape Province, South Africa, during the summer months in 2017 and 2018 when there is little or no rainfall. Pollen was harvested from nine managed honeybee colonies, in three different situations, and identified by comparison with pollen samples obtained from plants growing in the vicinity, and a pollen library established. The mass and relative percentage contributions of different pollen sources were determined. The dominant sources of pollen in 2017 were Eucalyptus cladocalyx (Sugar Gum) and the exotic weed species Hypochoeris radicata (False Dandelion). During the exceptionally dry summer of 2018, when there was a reduced availability of sugar gum and agricultural weeds, there was a dramatic reduction in pollen mass. The study concluded that sugar gum and agricultural weeds played an essential role in sustaining honeybee colonies during dry summer months. These results were aligned with similar outcomes elsewhere in the world. The removal of sugar gums and the eradication of agricultural weeds would have a devastating effect on colony sustainability, effecting fruit production, food security and the economy. Remedial action is required to ensure that suitable flowering plants are available to address honeybee pollen requirements.

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