PP-313 [Beekeeping Technology and Quality]

Beekeeping Flora in the “Bee Garden” Melliferous Flora Garden, Yunquera, (Málaga, Spain), in the Sierra de las Nieves National Park.

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Keywords: beekeeping flora, pollinators, conservation, biodiversity, environmental education, sustainable beekeeping, ecotourism

BACKGROUND / PURPOSE

The “Bee Garden” Melliferous Flora Garden, located in Yunquera (Málaga, Andalusia, Spain) within the Sierra de las Nieves National Park, is dedicated to the conservation and promotion of melliferous plants essential for pollinators. This study aims to characterize the beekeeping flora of the garden and highlight its importance for environmental awareness and education, as well as for raising awareness among tourists in the region.

METHODOLOGY

An inventory of the plant species present in the garden was conducted, evaluating their contribution to the bees' life cycle. Methods included direct observation and sample analysis to identify and classify the plants. Additionally, most visitors increased their knowledge of honey flora and recognized the need to protect pollinators after their visit to the garden.

PROBLEM DESCRIPTION

The decline of bee populations and other pollinators is a global concern affecting biodiversity and food production. Habitat loss and the reduction of food resources are key factors in this problem, compounded by the lack of public awareness about the importance of these insects.

Adopted beehives in the Melliferous Flora Garden and Information Point of the Sierra de las Nieves National Park near of *Abies pinsapo* (photos taken by the author).

RESULTS AND CONCLUSIONS

The results reveal a rich diversity of melliferous species in the garden, each providing vital resources at different times of the year. Key species such as rosemary, thyme and lavender are highlighted. This garden is not only a refuge for pollinators but also an educational tool for public and tourist awareness on the importance of conserving these spaces. Most visitors increased their knowledge of melliferous flora and recognized the need to protect pollinators after visiting the garden.

In addition, for this project, a herbarium and a plant seed collection have been created for educational and research purposes. The herbarium allows for the conservation and cataloging of samples of the main honey-producing and forest species in the area, facilitating the study of their morphology and their role in beekeeping and biodiversity conservation. The plant seed collection contributes to the propagation of native and honey-producing plants, ensuring the availability of resources for pollinators and supporting reforestation and environmental restoration projects. These initiatives strengthen the educational value of the space and consolidate the garden as a reference center for scientific outreach and environmental education. Photos taken by the author of the herbarium and plants from the Melliferous Flora Garden are shown, as well as the herbarium and plant seed collection websites:

https://beegardenmalaga.com/plantas-forestales/

https://beegardenmalaga.com/semillero/

Herbarium

Cistus albidus

Chestnut forest

Castanea sativa

Arbutus unedo and Plant Inventory of a Melliferous Flora Garden

Prunus avium

Salvia rosmarinus

Lavandula angustifolia

PRACTICAL IMPLICATIONS FOR BEEKEEPERS

Beekeepers can benefit from implementing similar gardens, fostering biodiversity and ensuring continuous food resources for their hives. Creating such spaces can help mitigate the effects of climate change and habitat loss, promoting the sustainability of bee populations and apicultural production. Moreover, melliferous flora gardens can attract ecotourism, providing an additional source of income and raising visitor awareness about the importance of pollinators.

ACKNOWLEDGMENT

We would like to thank everyone who supports this Honey Flora Garden project, whether by adopting a hive or tree or by visiting the Garden. We also thank those who collaborate in the "Pollinators in Málaga" Contest, a citizen science project that contributes to furthering our understanding of Málaga's biodiversity. In addition, we express our gratitude to all those who are working to combat the spread of the invasive *Vespa orientalis* in Andalusia and, more recently, the *Vespa velutina* detected in Alhaurín de la Torre (Málaga).

Adopted *Arbutus unedo*. (photograph taken by the author).

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Problem Description: The decline of bee populations and other pollinators is a global concern affecting biodiversity and food production. Habitat loss and the reduction of food resources are key factors in this problem, compounded by the lack of public awareness about the importance of these insects.

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Practical Implications for Beekeepers: Beekeepers can benefit from implementing similar gardens, fostering biodiversity and ensuring continuous food resources for their hives. Creating such spaces can help mitigate the effects of climate change and habitat loss, promoting the sustainability of bee populations and apicultural production. Moreover, melliferous flora gardens can attract ecotourism, providing an additional source of income and raising visitor awareness about the importance of pollinators.