

The potential economic value of pollinators in crops. Increased public awareness and urban Beekeeping.

Gil, J.^{1,2}, and Dixon, L.³

¹ Abejas y Miel, Soc. Coop. And. - C/ Madroño, 3 (Nave 1) Pol. Ind. La Huerta, Casabermeja, 29160 Málaga (Spain) - Tel.-Fax: 952718542- email: abejasymiel@abejasymiel.com
² Asociación Malagueña de Apicultores - Museo de la Miel - C. Pósito, 1, Colmenar, 29170 Málaga (Spain) - Tel.-Fax: 952718030 - email: mielmalaga@mielmalaga.com
³ London Beekeepers Association / Urban Beekeeping - 6, Clarion House, St Anne's Court, London W1F 0BA (U.K.) - Tel. 07952 960424 - email: luke@urbanbeekeeping.co.uk

Resumen

Las abejas y otros polinizadores contribuyen de manera importante a la agricultura y el medio ambiente a través de la polinización de cultivos y plantas silvestres. El declive de las poblaciones de polinizadores, ha sido claramente documentado en varios ámbitos del mundo, debido a varios factores, siendo el principal el uso excesivo de pesticidas. Por lo que se hace necesario aumentar la conciencia de la importancia de las abejas, para ello los gobiernos deben apoyar al sector, siendo de gran ayuda, permitir y fomentar la apicultura en las ciudades, convirtiéndose en un fenómeno social, con gran impacto educativo y medioambiental, donde ya ha sido legalizada, como Londres, Nueva York, París y Berlín.

Introduction and justification

-After analyzing various articles and studies on the pollination, the main reason this work is to make some reflections about the importance of pollinators in the environment, especially of the species *Apis mellifera*, and identify strategies for dissemination.

-To raise awareness of the importance of bees, the government should support the sector, and should allow and encourage beekeeping in cities. Urban beekeeping is vital environmentally, economically, and educationally. It is vital to sustaining the complex biodiversity of towns and cities. Yet keeping bees in cities is still illegal in some countries. What started as an interest of a few has turned into a full-blown social phenomenon, in cities such as London, New York, Paris and Berlin. It is important that the phenomenon spreads to other cities in the world.

Material and method

Different literature has been consulted, as well as contact with associations of beekeepers, scientists and beekeepers from different countries.

Results and Discussion

Economical value of insect pollination services per annum in the world:

- Reaches € 153 billion.
- Represents 9.5% of the value of agricultural production for human consumption in 2005.

Importance of honey bee pollinators

- 80% Of crop plants pollinated by the honeybee.
- It is accompanied by cooperation of 20000 species of wild bees around the world.

Honey bees (*Apis mellifera*) and other pollinators make vital contributions to agriculture and the environment through the pollination of cultivated crops and wild plants. The decline of pollinator populations, has now been clearly documented in several areas of the world, due to several factors, mainly is due to excessive use of pesticide.



Effect of pesticide abuse

So it is necessary the introduction of pollinators in crops, it has great impact on other countries, but it has still a minority interest in Spain. In addition, beekeepers and farmers need to recognize and assess the market potential of bees in energy crops such as sunflower, soybean and rapeseed, which would have great interest due to fossil fuel crisis.

The value of bees in the almond crop is a great example of diversity recognition

- For good pollination scientists recommend 5 to 8 hives per 2.47 acre.
- The yield on the production is considered to € 1000 per hive introduced. U.S.

- Is the first producer of almonds, with 80% of world production.
- In California there is approximately an area of 741,000 acres, required under recommendations 1,500,000 beehives.
- The rental value of a hive in the U.S. (Trayner, J. 2007) is:
 - In 1973, about 10 €
 - In 2007, the rental value is greater than 100 €

Spain
It is the 2nd production company with approximately 1,358,500 acres, according to the recommendations required 2,750,000 beehives. Currently, in Spain on the rare occasions that the farmer pays the rent, the value of a hive is 10-15 € (Egea, J. 2010).



Beehives pollinate almond, cherry and avocado in Spain

In some regions of Chile, beekeepers earn more than 50% of their income from pollination services. Demand exceeds supply. In New Zealand the demand for honey bee pollination has increased exponentially.

Pollination by honey bees is a profitable business. And a growing one. The growth depends on education and awareness. This can be driven by beekeepers themselves with support from the public sector and scientific research.

Strategies and practices to increase social awareness of the importance of bees include:

- Pollination registers to match beekeepers to farmers as happens in the US: <http://pollinators.iabin.net>
- Further research on pollination. Governments should support more to beekeeping, for example in the United States two recent bills have been introduced, the Pollinator Protection Act (2007) and the Pollinator Habitat Protection Act (2007), that will provide funding for research and protection for bees.
- Dissemination of information about beekeeping to the general public through talks, fairs, colleges, routes and museums, for example the Honey Museum of Malaga (www.museodelamiel.com)



Honey Route in Málaga (Museum, honey packing industry and initiation course on beekeeping)

Increased support to the International Pollinators Initiative, whose website is www.internationalpollinatorsinitiative.org

Legalization of urban beekeeping in those places it is still forbidden.



Beehives in roof parking Lancaster Hotel 4 * London (London). Observation hive in the Natural History Museum, London, in which bees fly freely in the Wildlife Garden and its surroundings.

Create an international honey bee day, similar to the US National Honey Bee Day: <http://www.nationalhoneybeeday.net/>

Supporting urban beekeeping. Beekeeping in the city makes many people aware of the importance of the honeybee. See what is happening in London: www.urbanbeekeeping.co.uk



Beehives in roof and national hive with home made hive stand for stability against wind

Conclusions

There is a need for greater dissemination of the benefits of the honey bee to a wider public, especially in those countries which have little or no urban beekeeping and poor relationships between farmers and beekeepers.

Implementation of some or all of these strategies and practices could improve significantly the chance of halting the decline of bees and the essential ecosystem service they provide.

Main bibliography

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