Overview

Malta's native honey bee is *Apis mellifera ruttneri*, named after Professor Friedrich Ruttner.

This bee subspecies of relatively black colour is more closely related to the North African (*Apis mellifera intermissa)* than to the European bee subspecies. The *Apis mellifera ruttneri* has evolved and adapted superbly to the environment and harsh climatic conditions of the Maltese Islands. It also defends itself supremely well against local pests like wasps and hornets. Furthermore, astonishingly, solely by natural selection, colonies have exhibited some resistance to Varroa to a certain extent.

***Hive of Apis mellifera ruttneri*, photo by Dr. Per Kryger (2015)**

Despite possessing these incomparable and beneficial traits, some beekeepers are still opting in favour of the importation of non-native honey bees and are threatening the conservation of this unique bee.

Moreover, recently a Sicilian apiculturist brought 445 nucleus foreign bee colonies to our islands to produce queen bees for export. Such intensive beekeeping will ultimately result in the total hybridisation of our already small and critical native bee genetic pool, apart from increasing the risk for spread of diseases and competition for the already limited foraging area available.

Beekeeping in Malta is one of our oldest traditions. In fact the Greeks and Romans called our island *Melite* which derives from the Greek word *meli* meaning honey. If things don't take a drastic turn for the better soon though, part of our apicultural heritage will end up as history as our native bee will be lost forever.

The Ruttneri Conservancy Project

Despite facing an uphill struggle, some concerned and enthusiastic Maltese beekeepers, namely Mr. Thomas Galea, got in touch with SmartBees (a collaborative research project on bees across Europe) and in collaboration are setting in motion a strategic plan to protect the *Apis mellifera ruttneri*. Our main goal is to safeguard this endangered and unique bee species and ultimately ensuring the maintenance of our already limited biodiversity.

Samples of adult honey bees from colonies in different apiaries throughout Malta were collected and analysed. Despite skepticism by the majority of locals that the native bee was still existent and not 'contaminated' by imported bees, results have so far revealed the contrary.

To our relief and encouragement, results of the characterisation of mitochondrial DNA from these set of samples proved that *Apis mellifera ruttneri* is still dominantly prevalent in our islands.

***Close up of Apis mellifera ruttneri*, photo by Dr. Per Kryger (2015)**

Another study was also conducted in 2014 by researcher Ms. Sheryl Sammut, (M.Sc graduate) on the "Determination of the genetic status of the local honey bee *Apis mellifera ruttneri*", under the supervision of Dr. Marion Zammit Mangion (senior lecturer of Physiology and Biochemistry at the University of Malta) and Dr. David Mifsud (senior lecturer of Rural Science and Food Systems at the University of Malta). Results obtained from this study confirmed that the Maltese bee *Apis mellifera ruttneri* is different from that of Sicily and it is more related to the North African bee both morphologically and genetically. Thus confirming the previous studies conducted by Ws Sheppard, McArias, A. Grech and Md Meixner in 1997. These are very positive results and will be published very soon.

Notwithstanding this though, it was established that the population of our native bee species is at its most critical point and therefore requires immediate attention for conservation.

The visit of SmartBees experts Dr. Aleksandar Uzunov and Dr. Marina Meixner has provided a timely morale boost for local beekeepers and further motivated and invigorated them to unite for this cause.

A training event for local beekeepers was organised on Sunday 6th March 2016 by the expertise of Dr. Aleksandar Uzunov and Dr. Marina Meixner, who were supported by local beekeeper and project co-ordinator Mr. Thomas Galea, committee member of the Malta Beekeeping Association.

The training for the beekeepers willing to take part in this breeding program included interesting theoretical presentations and practical in-field demonstrations of breeding and selection methods. As recommended by SmartBees, testing stations will be set up across the Maltese islands to conserve the population of the local bees while developing tools for safeguarding future populations by improving certain traits and increasing the frequencies of the valuable traits in the local bee populations.

Training event set up by SmartBees, photos by Darryl Grech & Thomas Galea (2016)

Breeders have also been instructed to follow a performance testing protocol as established by SmartBees. SmartBees breeding strategy has already proven to be very successful and adjustment of the testing methods will be allowed to suit our islands' local conditions. These techniques will allow the *Apis mellifera ruttneri* to be adapted and enhanced to suit the needs of local beekeepers and most importantly enabling this breed's preservation through its utilisation.

The next crucial step being evaluated is assessing which *Apis mellifera ruttneri* queens will be selected to start this breeding program. Following this, the location of where these testing stations will be set up will be identified to ensure that they are evenly spread across the islands.

We are also working on our list of supporters for this project both locally and worldwide. Their backing is extremely valuable to our initiative. Up until now renowned organisations such as 'Slow Food Foundation for Biodiversity', 'Bees for Development', 'Bee or Not to be' and the 'Bumblebee Conservation Trust' have expressed their support and joined our cause and more are expected to follow suit in the very near future.

Against all odds, together, with sheer hard work and determination, we will prevail and this project can be a success

Our Objectives

- Providing appropriate training to local beekeepers to improve knowledge on understanding and undertaking and sustainable apiculture.
- Encouraging new beekeepers to start with *Apis mellifera ruttneri* native bee subspecies.
- Maintaining biodiversity and safeguarding the existing *Apis mellifera ruttneri* bee subspecies.
- Increasing the number of healthy colonies of the Maltese native bee.
- Improving certain traits and characteristics of *Apis mellifera ruttneri* by selection to enhance its reputation among beekeepers.
- Promoting the local bee species among beekeepers.
- Having a readily available stock of *Apis melliferi ruttneri* queens for marketing to sustain the local demand.
- Recognising the *Apis mellifera ruttneri* by scientific evidence and certifying the breed (pedigree).
- Working on developing a policy on control of the importation of foreign bee species to our islands to preserve our indigenous species.

***Apis mellifera ruttneri* is more than just a bee, it is OUR bee!**

Authors

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