

Floral Monitoring and Biophysics parameters as a tool to beekeepers installation decision

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SECTION: NATURAL RESOURCES MANAGEMENT AND MONITORING

Beekeeping offers a great development potential, as a source of food, as a nutritional complement and also as raw material provider to several activities. Moreover, biodiversity improvement conservation, incentive for retention of natural habitats and an ideal activity for forest conservation programmes are important factors associated with this activity.

Honey is a natural sweet product that is produced in almost all Portuguese Regions. Honeys from certain areas are preferred mainly because of their sensory characteristics, which are related to their floral origin. The pollen and nectar variability influences the honey flavour and determines its commercial quality.

The aims of this work are: geographical identification of existing apiaries in the central region of Portugal; identification and quantification of floral sources; characterization of honey (sensory and physico-chemical); construction of thematic maps supporting the new hives installation, predicting the honey characteristics.

This methodology has been applied in a Portuguese studied area (Vila Velha de Ródão). A first identification of the apiaries allowed the establishment of the potential zones to future beekeepers installation (Lidónio *et al.*, 2009) (Figure 1). In order to complete the previous information, it is in progress the identification and quantification of species for apiculture interest as well as the honey physical and chemical characterization.

Potential apiculture development characterization has been mapped using the following attributes: surrounding area for 200 vegetation units (Forestry zones, agricultural zones and bush zones); slopes warm temperate (warm and very hot); the surrounding area, about 200m, around the water lines and water points; surrounding feeding apiary area (50m diameter); urban admissible legal boundary (100 m diameter for each apiary). It was also considered, the shading maps because of its importance on hive production and bee behaviour. Shading values considered favourable are between 0 and 127. A methodological procedure was developed, aiming the potential beekeeping map construction. Identification of favourable areas, for future beekeepers apiaries installation, will be possible in result of this study.

In many Portuguese regions some beekeepers transport their hives, according to the floral sources development in order to reach regions where the production of some species is higher, allowing the improvement of some crop pollinization, for a specific month. Vila Velha de Rodão area, about 10885ha, presents excellent conditions for proper development of beekeeping.

It is well documented that the pollen quality and variability, influences the honey flavour and quality (Anjos *et al.*, 2009). The studied region is limited by the major watercourses and their respective valleys and steep slopes. Predominantly those uncultivated land, presents high biodiversity with high beekeeping potential. Some of the most important species present in this region are, *Lavandula pedunculata* (Miller) Cav., *Cistus ladanifer* L., *Rosmarinus officinalis* L., *Erica umbellata* L., *Erica*

australis L., *Erica lusitanica*, *Calluna vulgaris* (L.) Hull, *Retama sphaerocarpa* (L.) Boiss., *Echium plantagineum* L., *Genista triacanthos* Brot., *Quercus rotundifolia* Lam, *Quercus pyrenaica* Willd., *Cytisus multiflorus* (L'Hér.) Sweet and *Cytisus striatus* (Hill) Rothm, *Arbutus unedo* L., *Eucalyptus globulus* Labill. and *Juniperus oxycedrus* L. (Almeida, 2004; Carvalhinho, 2004; Monteiro, 2003).

In future works, iso-quality mapping, for beekeeping potential characterization, will be concluded, for central Portugal. This will allow the beekeepers installation optimization and support a honey production sustainable management.

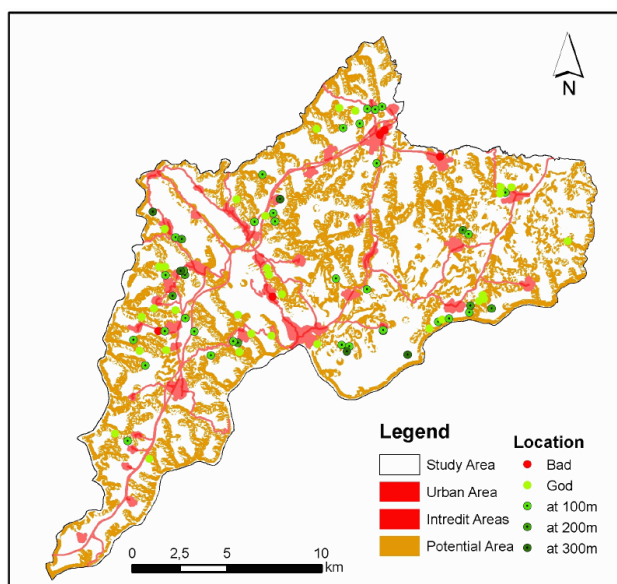


Figure 1: Potential zones to beekeepers installations.

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