

BEE POLLEN FLAVONOID/PHENOLIC CHARACTERIZATION IN DIFFERENT FLOWERING PERIODS

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Bee pollen (pollen collected by bees) is a very rich functional food that can be used as supplement or investigated as potential for new drugs.

Some of the main biological components are phenolic acid derivatives and polyphenolic compounds, predominantly flavonoid glycosides. These substances with important physiological and pharmacological activities are research targets as antioxidants, anti-aging, anti-cancer, anti-inflammatory and anti-atherosclerosis, among others.

For all this potential it is important to have an accurate method for floral identification and a full idea about the main species for each country.

In order to assess the choice made by honey bees all over the time two apiaries in the region of Beira Interior were selected for evaluation of the variance of floral pollen sources used by them in three different flowering periods.

Bee pollen was collected with appropriate pollen traps placed at the hive entrance.

The identification of the *taxa* was carried out by melissopalynology adapted technique and HPLC/DAD profiles of flavonoid/phenolic acid derivatives (Campos *et al*, 1997 and Campos *et al*, 2003).

Using the database already available in the Pharmacognosy Laboratory of Coimbra University it was possible to identify some bee pollens collected in the selected samples previously analyzed by melissopalynology for preliminary results. There are two species which flavonoid/phenolic acid profiles have not been identified in the referred database. With these studies it was possible to characterize and integrate these plants and the respective HPLC/DAD profiles in the above cited database.

To contribute for a future quality control of this product, a preliminary study was done in order to evaluate the potentiality of calibration model between the results of HPLC/DAD for flavonoid/phenolic acid and the spectra acquired with FTIR-ATR spectroscopy supported by the previously results obtained by Anjos *et al* (2012).

Keywords: pollen, flavonoid/phenolic acid, HPLC/DAD, FTIR-ATR

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