



# DEVELOPING EUROPEAN STANDARDS FOR BEE POLLEN AND ROYAL JELLY: QUALITY, SAFETY AND AUTHENTICITY (APIFRESH)



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## INTRODUCTION

APIFRESH (Fig. 1), is an EC funded project designed to provide European beekeepers with the legal and technological resources necessary to better determine the origin, quality and healthy compounds of bee pollen and royal jelly (Fig 2). The ultimate objective will be to improve the competitiveness of the European beekeeping sector.

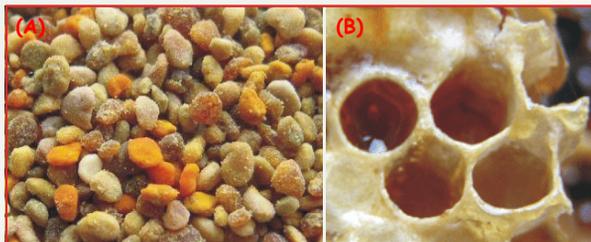


Figure 2. Bee pollen (A) and royal jelly (B)

## SAMPLING

As a first step in that direction we plan to collect and analyze bee pollen and royal jelly samples from the most important production areas in Europe (Fig 3). Next, we intend to develop a set of good practice guidelines aimed at improving the procedures for the collection, packaging, transportation and selling of bee pollen and royal jelly products. Finally, we will propose a new quality standard with the aim to lay the foundations of future European regulations. This quality standard will include the developed good practice guidelines as well as the definition of the technical aids necessary to certify the quality and origin of bee products.

Figure 1

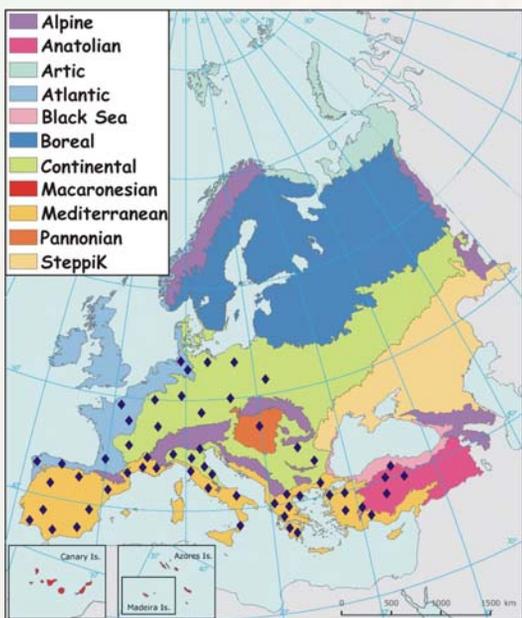
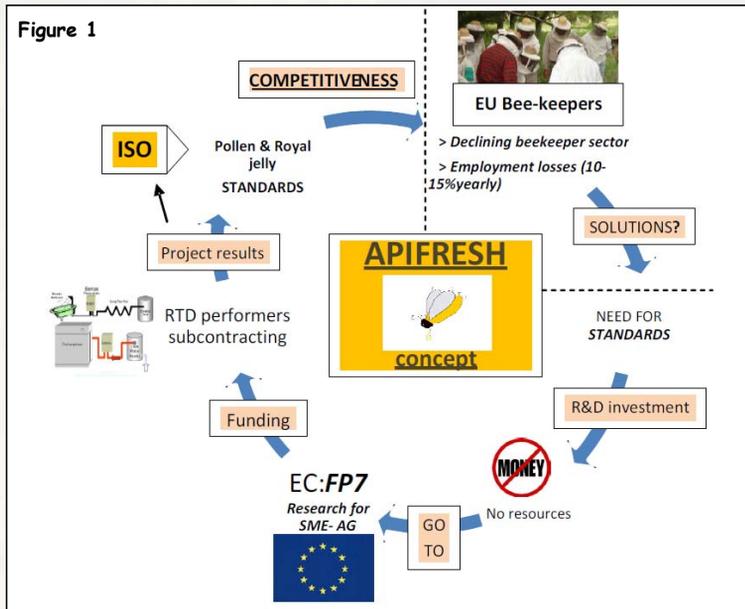


Figure 3. Biogeographical European regions and location of bee pollen samples.

## SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND WORK PLAN (Fig.4)

The benefits to the European Beekeeping sector will be the following:

- Determining standardized methodologies in order to create European quality standards, including: analytical methods to determine sensory properties, bacterial load, water content, chemical composition (fat, proteins, carbohydrates), presence of pesticides and heavy metals.
- Identifying healthy compounds present in pollen and royal jelly through techniques for measuring bio-active components, antioxidants, sterols, flavonoids, polyphenols.
- Developing a precise methodology for the determination of pollen authenticity (geographical and botanical) through PCR technique and the creation of a genetic database.
- Developing a low cost Decision Support System based on Artificial Intelligence to reduce the time required for pollen recognition.

## THE APIFRESH CONSORTIUM

It is composed of Beekeeping Associations, research institutions and industrial organizations from five different European countries.



European Professional Beekeepers Association

Federação Nacional dos Apicultores de Portugal

Figure 4. APIFRESH Work Plan

