Maps of pollen diversity and protein content based on beebread sampled all over Italy.

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It is commonly agreed that bee/colony losses have often multifactorial nature.
It was evidenced in laboratory studies that the toxicity of some pesticides varied significantly according to the protein content in the diet provided to the bees. Thus, the nutritional status is one of the important factors influencing bee resistance to pesticides. It is therefore hypothesised that in certain vegetational circumstances which supply low-diversity and low-protein pollen, honey bee colonies are less resistant to stressors (including pesticides) than in those environments where both the pollen diversity and its protein content is higher.

It would be very useful to have available a pollen-quality-map, a valuable tool to individuate advantageous and detrimental areas from the apistic point of view. These two terms indicate those areas which, due to high or low (respectively) pollen quality offered by the environment, make the colonies more or low resistant to eventual stressors. Thus the beekeeper would be able to adopt mitigation measures to limit the negative effects of the other factors (pesticides, low nectar flow, unfavourable climatic conditions) which, in case of bad nutritional status, could produce damage.

In the present research we have collected beebread from the apiaries of the BEENET project all over Italy. The samples were subject to the analysis of the pollen spectrum in order to define pollen diversity. Contemporaneously, the analyses of nutritional quality (% proteins) were carried out. In some of the samples, residues of agrochemicals were also searched. Beebread was preferred instead of curbicular pollen because, while the latter normally reflects the pollen supply in the environment in the moment of collection, the former is a combination of pollens collected through a long period of time.

The present contribution reports the spatial distribution of data obtained from the first year of the study. The project will continue and in the next future, the spatial and temporal trends will be elaborated.