BeeNet and BEST
the Italian honey bee monitoring networks

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BeeNet

The BeeNet "beekeeping and environment" Italian monitoring network has been working from September 2011 and up to now 303 apiaries distributed in all Italian regions (i.e. 3,000 colonies) are involved. Each colony is checked 4 times per year (early Spring, late Spring-early Summer, late Summer-early Autumn, before Winter). In the first and third visit, samples of living bees are collected for pathological analysis as well as beebread for crude protein content analysis and pesticide residues.
The results of the monitoring network are published by means of periodic reports, available on the web site "SOS api" (www.reterurale.it/api).
In 2012 winter mortality was negatively correlated to the crude protein content found in beebread; furthermore, more than 50% of beebread samples were positive to at least one active ingredient. Varroa infection was directly correlated to ABPV and *N. ceranae* was present in all Italian regions while neither *N. apis* nor *N. apis/N. ceranae* co-infection were detected. DWV was present in 96.7% of the samples and in 40% of cases exceeded 10 million viral copies per bee.

Each dot in the figure above correspond to 1 apiary (10 colonies) involved in the BeeNet Project

BEST
Bee Emergency Service Team

The Bee Emergency Service Team (BEST) was recently developed within the framework of BeeNet and works in cooperation with Italian Veterinary Services. Its main goal is to study honey bee and colony losses events when the causes are difficult to identify and the phenomenon is still in action. BEST works all over Italy and field intervention, samples and data collection are scheduled in case of bee mortality reported by beekeepers.

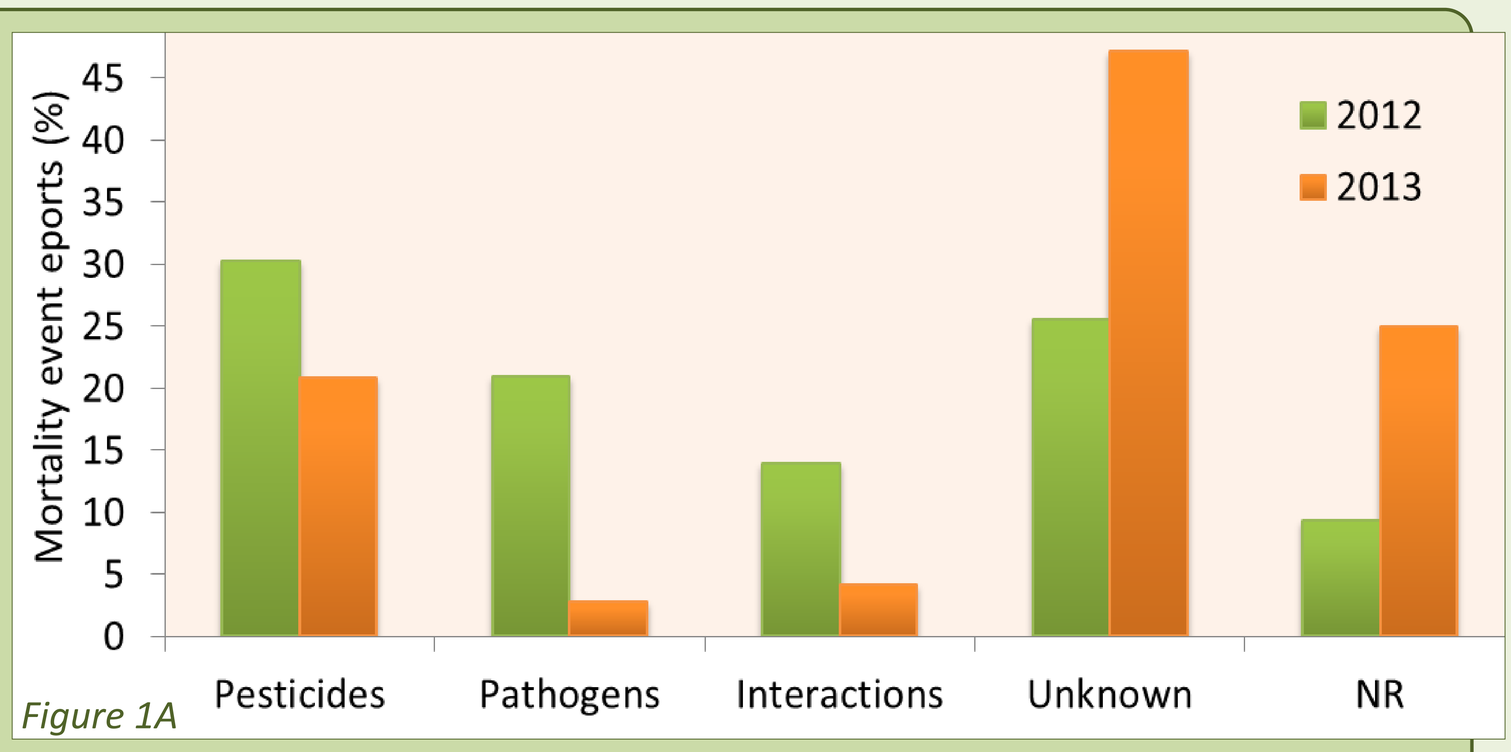

Figure 1A

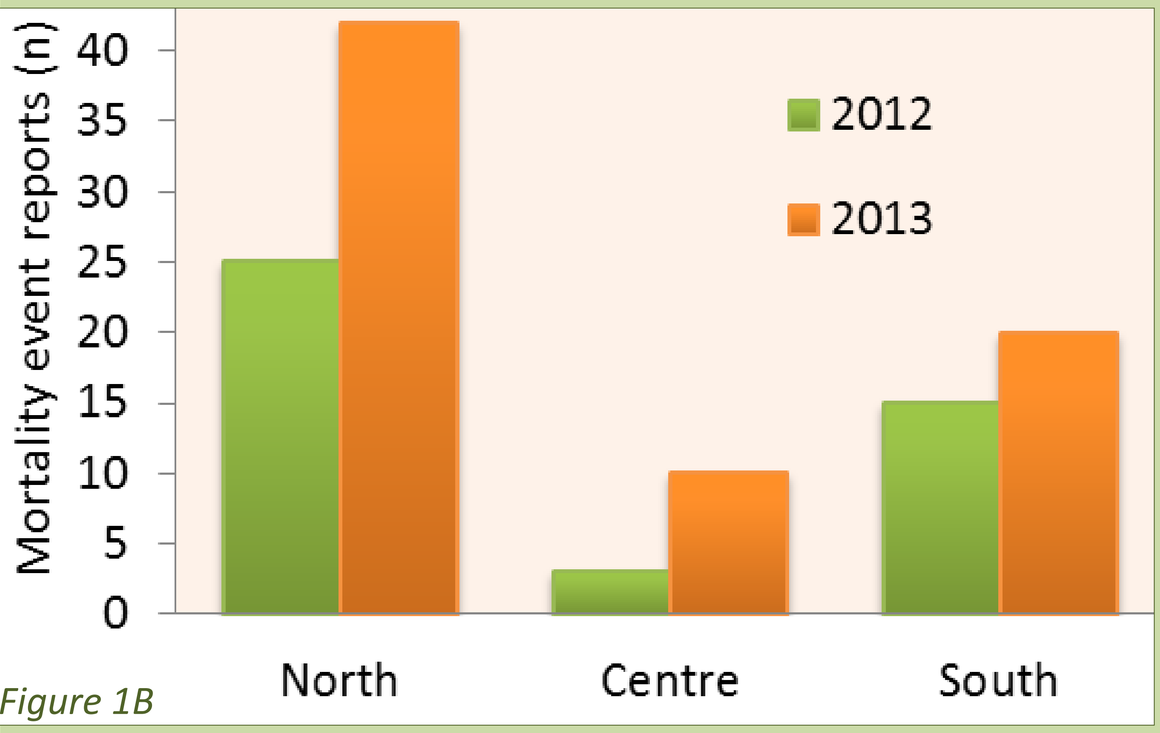

Figure 1B

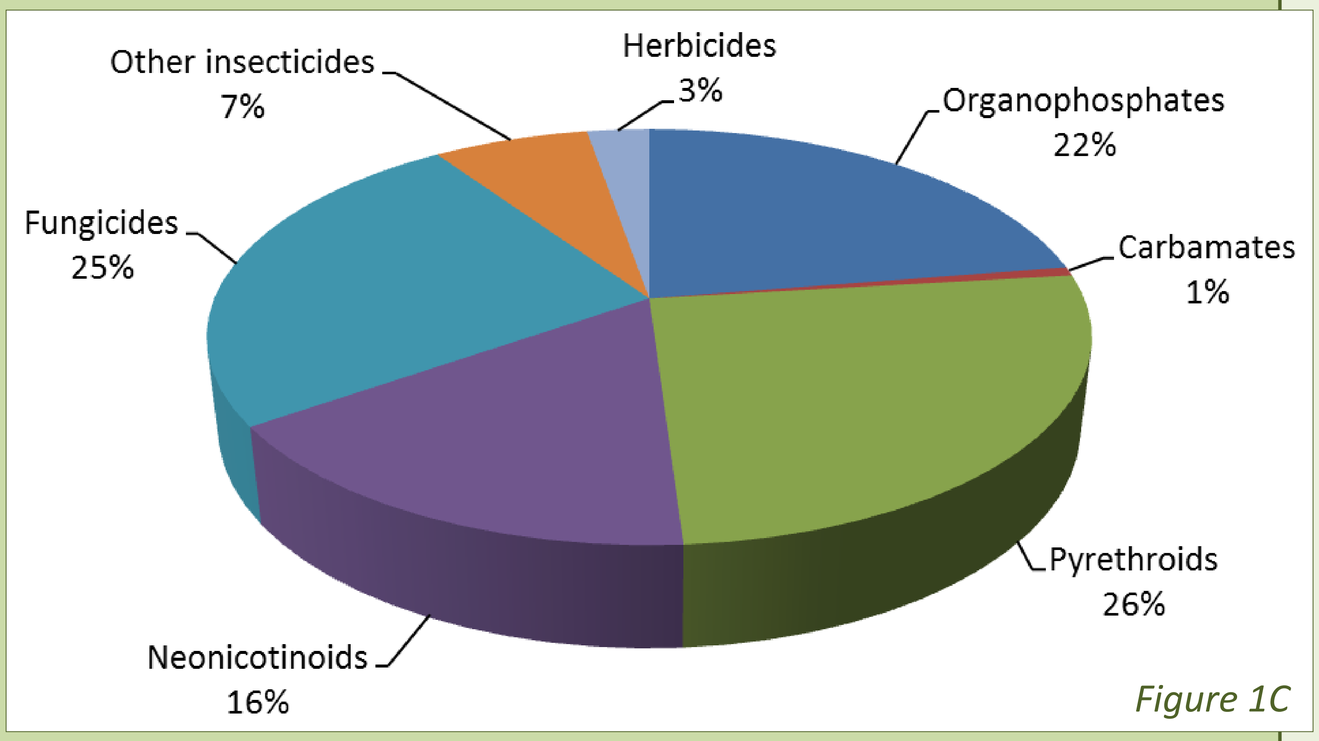

Figure 1C

In 2012 and 2013, mortality event reports were more frequently submitted in Northern Italy (Fig. 1B).
According to the anamnesis, specific chemical and pathological analysis were carried out to identify the reason of the mortality event. In 2012 and 2013, the main known cause of mortality were pesticides (Fig. 1A). Pyrethroids were the most frequent pesticide group found, followed by fungicides, organophosphates and neonicotinoids (Fig. 1C)