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BeeNet and BEST: the Italian 'beekeeping and environment' projects

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The BeeNet 'beekeeping and environment' 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 first results (2012) show that winter mortality is negatively correlated to the crude protein content found in beebread and that more than 50% of beebread samples were positive to at least one active ingredient. In addition, *Varroa* infection was directly correlated to ABPV and *Nosema 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. The Bee Emergency Service Team (BEST) was recently developed within the framework of BeeNet. Its main goal is to study honeybee 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. In 2013, 72 reports have been received from the North (42), South (20) and Centre (10) of Italy. Preliminary results show that the main cause of mortality were pesticides (15), while diseases and pathogens-pesticides interaction caused bee/colony losses in 2 and 3 cases, respectively. To conclude, BeeNet and BEST together provide the rare opportunity to compare by time and space all the main parameters connected to honeybee health, and provide insights on the actual causes of bee losses.