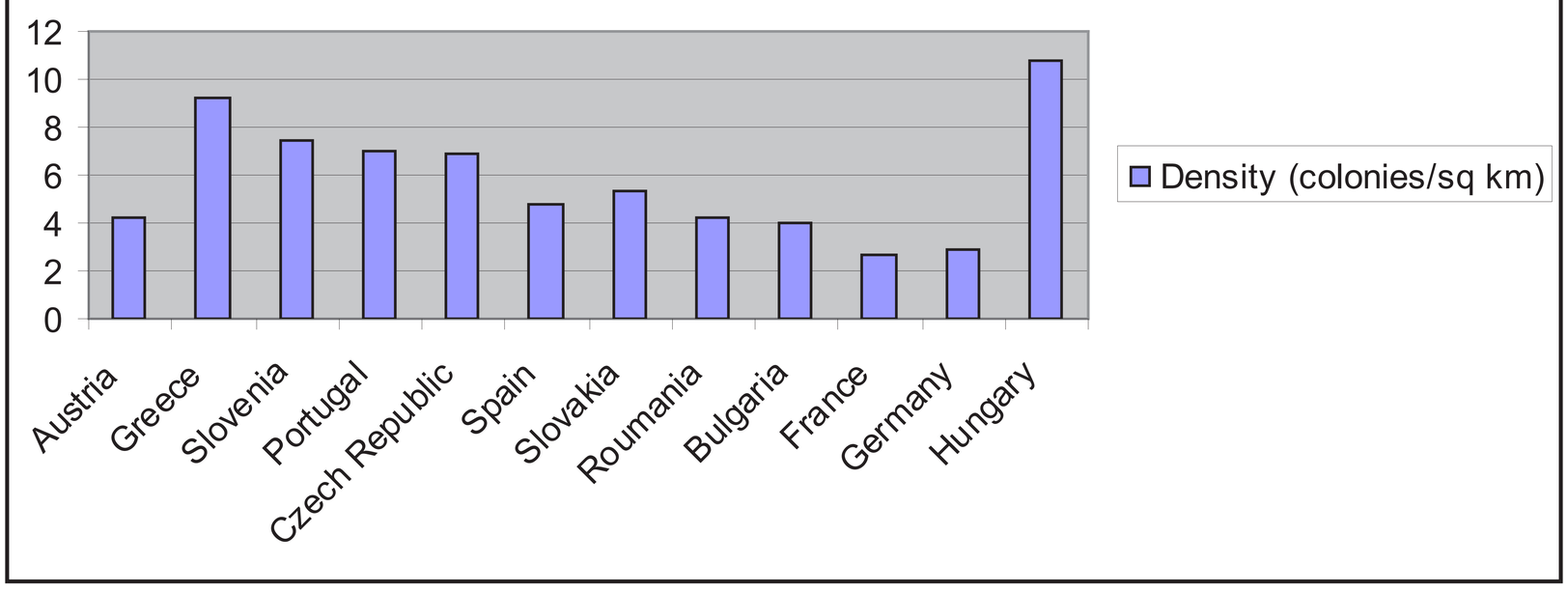
THE CAUSES OF BEE LOSSES AND ENVIRONMENTAL MONITORING IN HUNGARY 2007-2011

Beekeeping in Hungary becomes more and more popular. Beekeeping is mostly a part-time activity for many beekeepers which improves their incomes. The climate and soil conditions are favorable for beekeeping, also suitable for the agricultural production and to grow honey pasture plants (oilseed rape, sunflower, etc.). From the favorable natural endowments can not live out of the fact that the wild plants, for example the acacia, are a plentiful source of nectar for bees. Thanks to the circumstances the Hungarian honey export exceeded the average of 20.000 tons in the last then years.

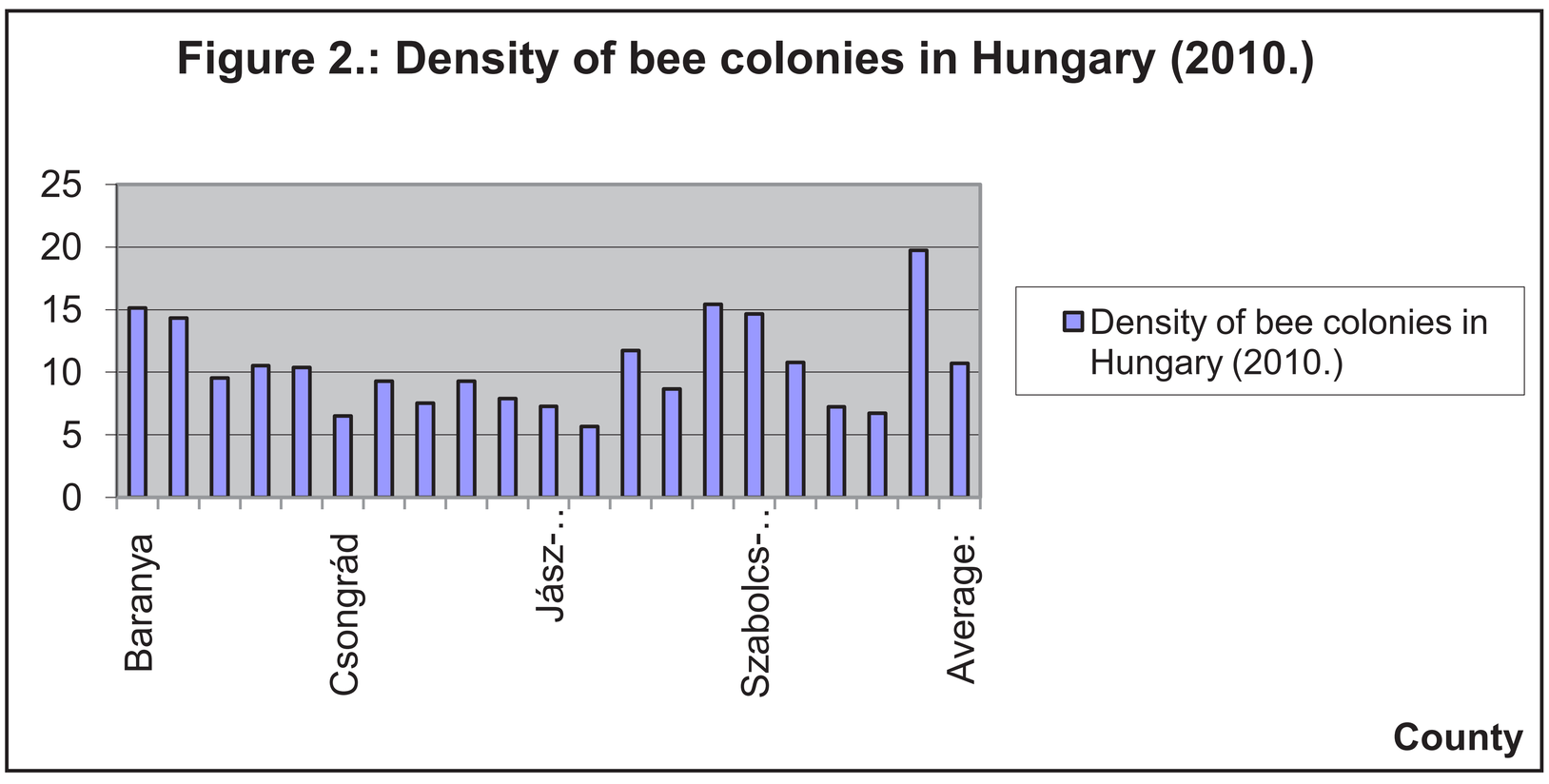
Figure 1. : Density of bee colonies in some EU country



The number of the bee colonies is 1 around million. The density is extraordinary high, the highest in the EU (figure 1.).

The geographical distribution of the bee colonies in some counties can be the double of the national average (figure 2.).

Figure 2.: Density of bee colonies in Hungary (2010.)



Bee losses are well known in Hungary. During the last 30 years the Hungarian beekeeping sector faced several times bee losses which exceeded 30 %. Starting with 2007 the Hungarian Beekeepers Association coordinates the investigation of bee losses. The assessment of damages and the exploration of bee losses are run under the framework of the environmental monitoring system. Sampling was done according to a uniform protocol by the beekeeping advisors who visited 400 apiaries. Samples were examined in accredited laboratories from both chemical and pathological point of view. The large density of bee colonies makes more difficult the solution of the problem. Figure 3. presents the level of Varroa and Nosema infection of the sampled apiaries during the past period.

Figure 4 illustrates that in an experimental apiary we can not exempt the bee colonies from mites during the six weeks treatment either. The examinations also covered the incorrect dosage of the acaricids, and another technology mistakes that led to bee losses.

The incorrect plant protection activities led also to bee losses and promoted the sanction of the farmers that caused the damages. The largest damages were caused by several ingredients: chlorpiriphos, cypermethrin, dimetoate, lambda-cyhalothrin. In our opinion the plant-protection activities do not rise to significant bee losses, which were observed in 1987, 1997, and 2007.

During our work, we studied with the effect of the neo-nicotinoid type pesticides. According to our experiences these ingredients do not raise serious problems in the honey production.

Figure 3.: The value of the Varroa and Nosema infection of the bee colonies in the sampled apiaries (2007-2011)

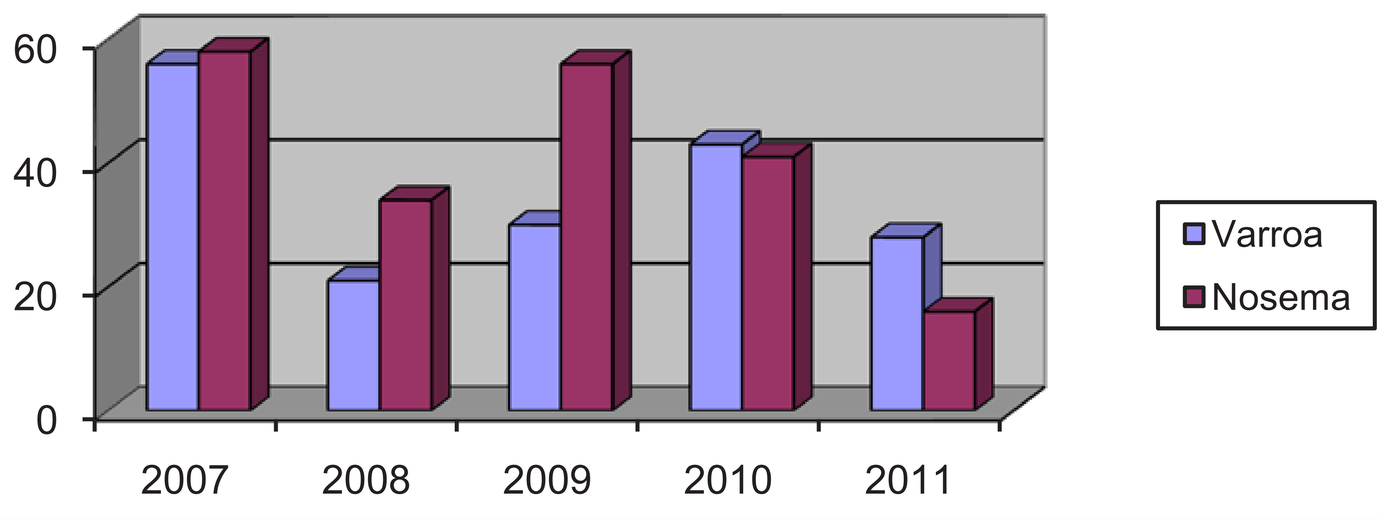
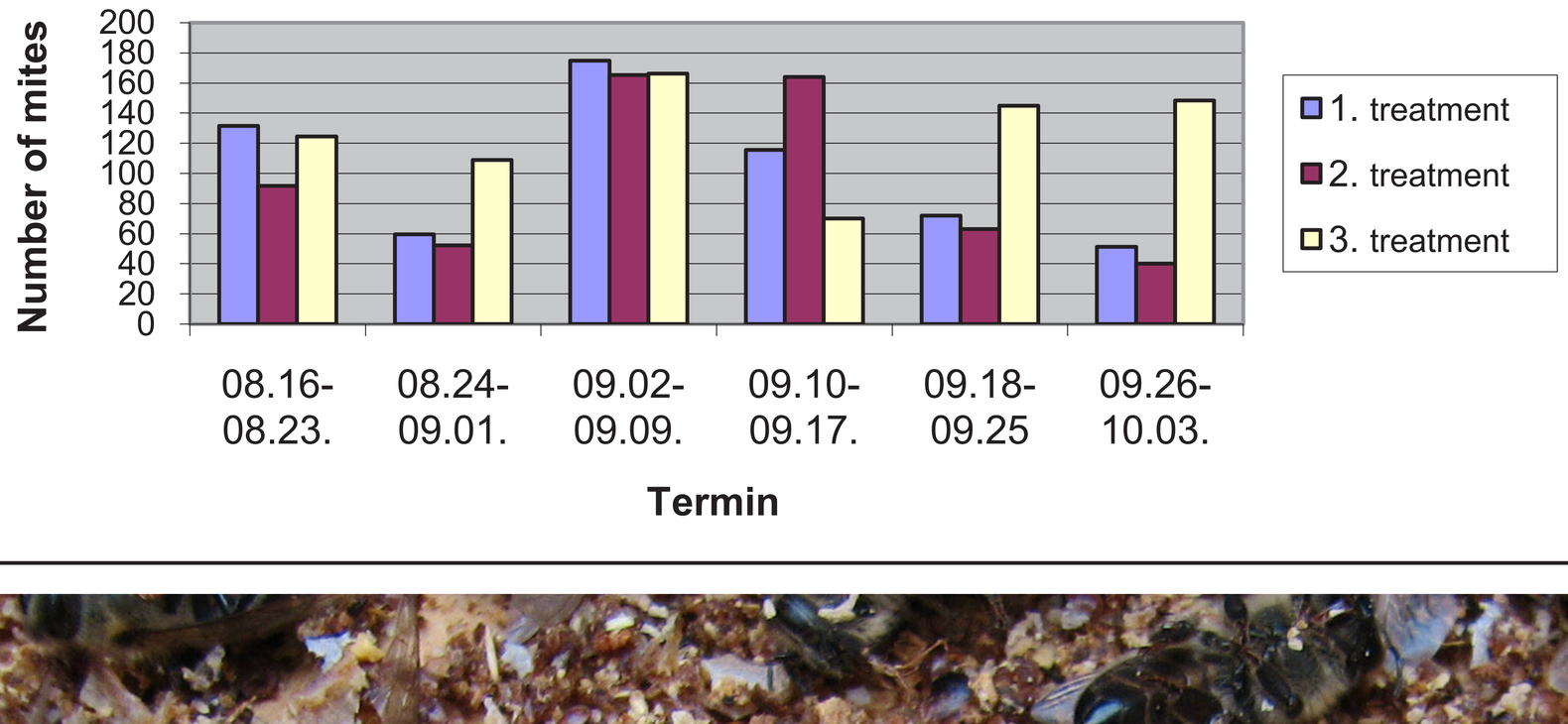


Figure 4.:The number of the mites in the point of view of the treatments (2008)



The aim of the above researches was to clarify the reasons of the bee losses in Hungary. The examinations costs were covered in the first year (2007) from the payments of the beekeepers, later the Hungarian monitoring research was financed by the Hungarian National Beekeeping Program, which is supported by the European Union and the Hungarian Government.

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