

Apisfero News n. 9 - August 2018

## Bee Varroa Scanner Thesis

July, 13 of 2018 - The thesis "Verification of an automatic system of varroas counting" has been presented at the [University of Turin - DISAFA](#). Candidate: Fabio Martino, Supervisor: Prof. Marco Porporato.

The thesis was based on the version 36 of BeeVS algorithm. The version currently in use is 41, which provide even better results than 36.

Here an excerpt of thesis final report: "the BeeVS system is a reliable tool for counting the varroas on the bottom board. In particular, if compared to the method of visual counting, it denotes high precision, and the result are repeatable.

Furthermore, manual visual counting proved to be less reliable, showing significant differences.

**The peculiarity of the BeeVS lies in eliminating the human factor in the counting process, consequently reducing the variability of the results and standardizing the data.**

With this in mind, it could be particularly suitable for monitoring, even on a large scale.

Being a digital system, the results of the scans, as well as being made available to the user, could be further processed to obtain, for example, heat maps infestation indices or forecasting models at the territorial level, in order to organize action plans based on secure data.

*On the apiary management level, knowing precisely the infestation level of the single colonies allows to carry out targeted containment actions, above all avoiding acaricidal treatments when not necessary and thus limiting the onset of resistance in varroa populations.*

***The BeeVS system could also be suitable for the application of the 'Regional Plan for the control of the Varroa destructor infestation' under the responsibility of the Veterinary Services, as its use does not require particular skills and experience in the field of beekeeping.***

*Logistically, the scanner is easily transportable and easy to use. [...]"*



Fig 1 - Discussion of the thesis of dr. Fabio Martino: "Verification of an automatic system of counting the varroas"

**The scientific validation by the University of Turin of the automatic counting through Bee Varroa Scanner makes us proud and rewards the long work of a year and a half by the whole team of researchers.**

## EurBee2018, we will be there

The scientific committee of [EurBee2018](#) has accepted the candidacy of Apisfero and DISAFA to present Varroa Counter from 18 to 20 September 2018 in Ghent, Belgium.

The poster will be presented on Thursday 20 September from 2 to 3 pm in the 'Bee Health' session on the Ledeganck space.



**Important Dates & Deadlines**

- ▶ EURBEE 8: 18-20 September 2018
- ▶ Notification of abstract acceptance: 4 June 2018
- ▶ Deadline early registration fee: 30 June 2018

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We are pleased to  
2018. This meeting  
The EurBee congre  
most important re  
venue for exchange  
EurBee has becom  
how they respond

Fig 2 - homepage of [www.eurbee2018.org](http://www.eurbee2018.org)

It will be an opportunity to present this innovative tool to the international scientific community, now arrived at the end of the prototyping phase.

The comparative study between visual counting and automatic counting conducted by the University of Turin - DISAFA and the perspective for a future development of the method for counting the varroa on the hive bottom board will be illustrated.

## BeeLIFE Project

June, 26 of 2018 - The vice president of BeeLIFE, Francesco Panella, has brought in Belgium a particular load, a Bee Varroa Scanner that will be used in the context of the European monitoring varroas project.

From the website:

“BeeLife is a solution-oriented non-profit organisation bringing together policy, science and field expertise on bee health and toxicology.”



Fig 3 - homepage of [www.bee-life.eu](http://www.bee-life.eu)

## Meeting with VETEA

July, 02 of 2018 –L'équipe [Apisfero](#) met the veterinarians and the Piedmont apistic associations for an information meeting on the automatic counting of the varroa at the [Centro Apistico Regionale](#). Under the responsibility of Dr.ssa Paola Mogliotti. **An important opportunity to understand the beekeeping problems and the organization of our Region. The discussion is open to all Piedmontese actors, beekeepers and associations. Together we can study the best practices and methodologies that can, in a concrete way, allow a territorial monitoring of the Varroasis at the regional level.**

Piedmont can become the first Italian Region to have a territorial mapping of the Varroa.



Fig 4 – Meeting at Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta - sede di Asti

## Meeting with Flemming of biavl.dk

July, 12 of 2018 – A meeting was held in Rome between Andrea Varesio di Apisfero and Flemming Vejsnaes from [Danish beekeepers association biavl.dk](http://Danish beekeepers association biavl.dk), Marco Pietropaoli e Giovanni Formato from [Istituto Zooprofilattico Sperimentale del Lazio e della Toscana "M.Aleandri"](http://Istituto Zooprofilattico Sperimentale del Lazio e della Toscana ), a public health control institution with a technical, administrative and managerial autonomy.

Prof. Flemming was able to see the BeeVS working and verifying its usefulness. Another useful piece for the construction of a network of European beekeeping relationships in the scientific field.



### FLEMMING VEJSNÆS

- Consultant at Danish Beekeepers Association
- Biologist (M.Sc.). University of Aarhus, Denmark
- Specialized on varroa treatment and international beekeeping

Fig 5 – From the [www.biavl.dk](http://www.biavl.dk) website

## Speech at BeeWeek2018

June 27 of 2018 – European Parliament (Bruxelles), In the context of [Week End at European Parliament](http://Week End at European Parliament) dedicated to the problems of European beekeeping, Michael Rubinigg, scientific manager of the Austrian beekeepers' federation Biene Österreich has presented the theme of *Crowd-sourced data collection platforms on parasite and diseases for beekeepers*. In this context he hypothesize the use of the technology developed by Apisfero for the monitoring of large-scale varroa as possible: *New techniques and medicinal products to help beekeepers facing bee health problems*.



Fig 6 - Dr. Michael Rubinigg at BeeWeek2018

## Software update to launch list scanning

We have contacted all the BeeVS users in Italy, Austria and Belgium, and we have proceeded remotely to update the software. In some cases, for those who had not used the BeeVS, we proceeded with the first scan.

**We remind everyone that the free scans must be completed by the year 2018.**

Now you can launch the scans by selecting the hives directly from the remote control, without having to select the hives through the use of the camera that frames the QRcode.

This mode is designed especially for delayed scans in the laboratory but can be useful also in the field

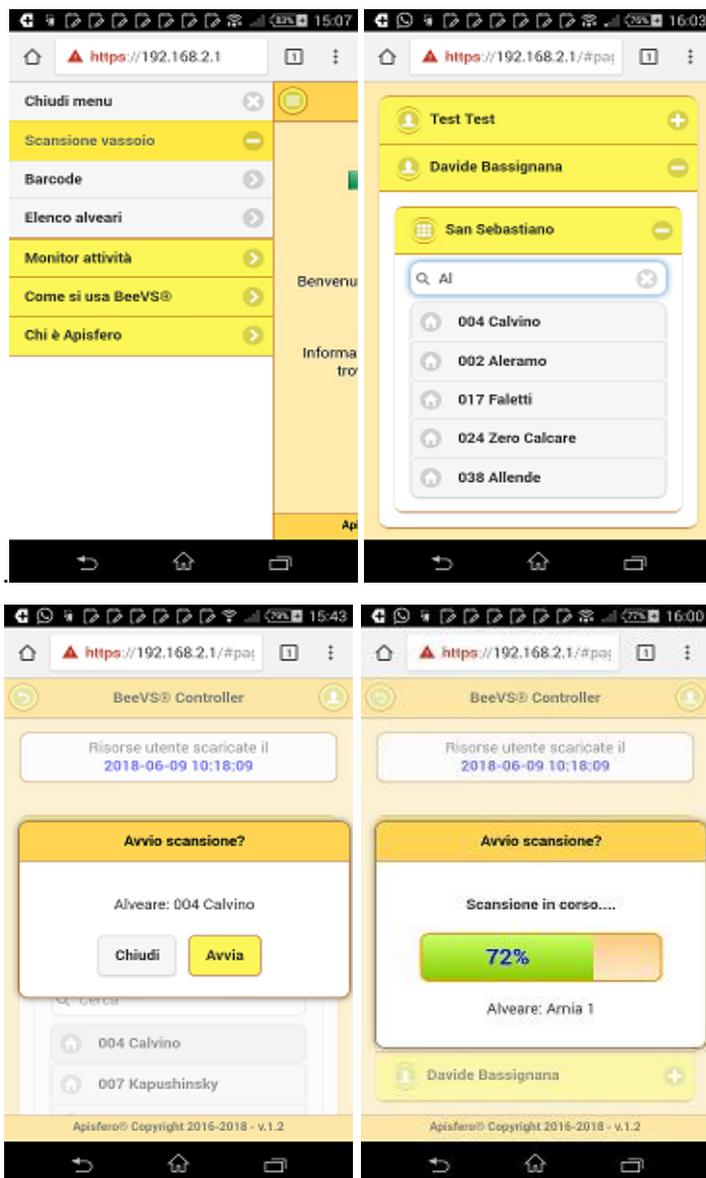


Fig 7 - Launch scan from list through List hives and selection of the hive

**Now Beekeepers can send sticky sheets and use the BeeVS as a scanning service. Therefore, they will not need to be equipped with the BeeVS, which will be able to remain at the bee retailer or the association affiliated with Apisfero and equipped with BeeVS.**

## The village sage

Mail of Davide Bassignana at Apisfero association meeting 2018.

“Individuality today has more power than pluralism. This predominant "ingredient" is not enough to meet the challenges that have been facing humans for several years, I am referring, for example, to global problems such as peak oil, climate change or loss of biodiversity. The super man is here now and has a potentially destructive force.

If humanity, as a sum of individuals, is the cause of global problems, the solution can only come from the evolution of man. From those human antibodies which, endowed with a plural sensibility, feel the urgency of changing direction.

The social organization of honey bees is an example to strive for meeting today's challenges. And the mathematics that allows them to save wax and space to accumulate energy reserves leads us to understand how it is completely natural what we are doing in the Apisfero, that is using computer science and electronics to do what we cannot do alone.

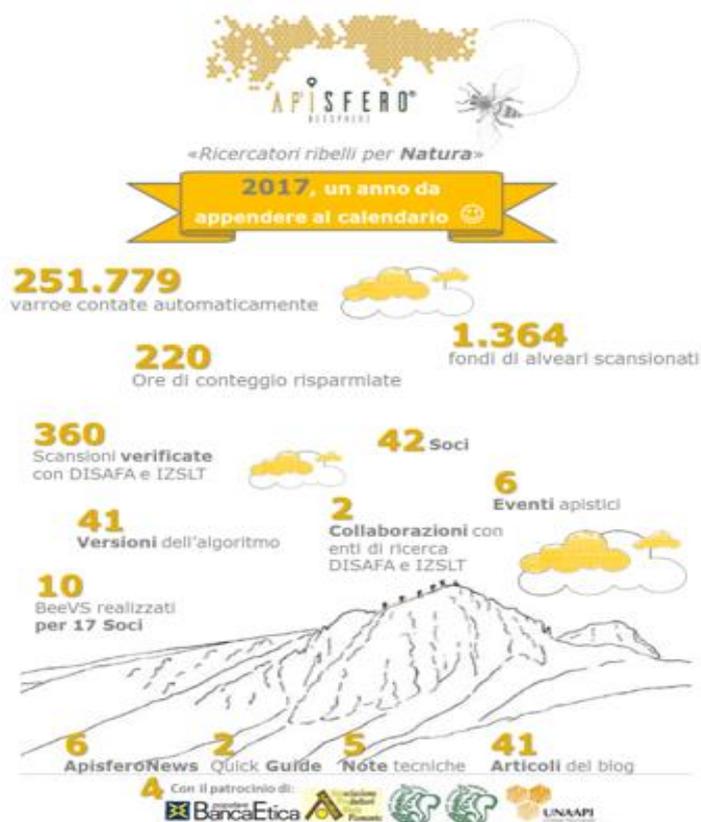
We have succeeded in transferring to the silicon world the knowledge accumulated by generations of homo sapiens and today we are witnessing a new era in which machines acquire intelligence, that is, an ability to express complex reasoning. The man-machine relationship has influenced humanity by touching the deepest strings, the fears are exorcised by Matrix, 2001 A Space Odyssey, the new Little Red Riding Hoods that help us to face the bad wolf. I would like to be the bearer of a modern fairy tale with a positive vision of the future that we are building here today, together.

The silicon brain can contain the knowledge coming from so many separate brains that could and can communicate slowly and partially through speech, gaze, touch and some electro-chemical communication.

If computers could be gifted with intelligence, starting from such a vast library, perhaps they could help man to do what he is not able to express socially: how to face and solve the global problems that he himself created. Perhaps one day computers will be able to elaborate a thought that is the result of a huge collective knowledge. A thought that can illuminate the action of man, who knows how to broaden his gaze, that can help him to add another fundamental ingredient: we.

This role was once reserved in Africa to village sage.”

## The 2017 number



Perhaps the most significant number is 6500: the volunteer hours of Andrea, Davide, Gianluca and Maurizio.