



# II Workshop de la Sociedad Latinoamericana de Investigación en Abejas

**30 de julio - 1 de agosto 2018**

Instituto de Investigaciones Biológicas  
Clemente Estable  
Montevideo, Uruguay

Organizan:



Auspician:



Apoyan:





## REPORT OF ACTIVITIES

On July 31 and August 1, 2018, the II Workshop of the Latin American Society for Bee Research (SOLATINA) took place at the Institute for Biological Research Clemente Estable (IIBCE), in Montevideo, Uruguay. The workshop gathered around 80 Latin-American researchers from Argentina, Brazil, Bolivia, Cuba, Chile, Mexico, Peru and Uruguay; as well as invited researchers from Canada, France and Italy; to participate in different conferences and discussion forums.

This meeting was organized by SOLATINA's Steering Committee in coordination with a Local Organizing Committee (B. Branchiccela, L. Castelli, D. Arredondo, C. Invernizzi, C. Rossini and K. Antunez). The following organizations generously supported the event: the Eva Crane Trust, the Foundation for the Progress of Chemistry (FUNDAQUIM), the Uruguayan Commission for Scientific Research (CSIC) and the Ministry of Industry, Energy, and Mining of Uruguay (MIEM). Additional support was provided by The University of the Republic (Faculty of Science, Faculty of Chemistry, and Faculty of Veterinary Medicine); the Ministry of Livestock, Agriculture and Fisheries of Uruguay (MGAP); the Honorary Commission for the Development of Apiculture (CHDA), the Uruguayan Apicultural Society (SAU) and the National Institute for Agricultural Research (INIA).

As part of this workshop two prominent bee researchers were invited to give plenary lectures. Dr. Ernesto Guzman Novoa, from the University of Guelph, Canada, gave the lecture entitled: "Effects of exposure to sub-lethal doses of neonicotinoids and *Varroa destructor* on honey bee health and behavior". Dr. Marcelo Aizen, CONICET researcher from the University of Comahue, Argentina, gave a lecture on "The Impact of Introduced Bees in Latin America".

Five round-table discussions were also held each one following the priority research areas covered by SOLATINA's working groups. The following is a brief summary of the topics discussed in each round-table, their conclusions, and planned activities.

### Diversity and Biology

Chairs: Dr. Carolina Morales and M.Sc. Estela Santos

Dr. Antonio Saraiva from the Research Center on Biodiversity and Computer Science (Biocomp, University of São Paulo) presented the conference: "Information systems (IS) on pollinators and pollination: the experiences in Brazil, and the perspectives and potential to expand them through Latin America". This lecture gave rise to a rich discussion on the need to implement standardized IS tools in the Latin American countries.

The proposed work plan is as follows:

- Perform a diagnosis of the progress made in the digitization and online publication of pollinator collections in each of the countries involved. Work, using this information, towards the implementation/adoption of the IS tools developed by Brazil in Latin America as a whole (LA). Contact researcher: Carolina Morales [moralesc@comahue-conicet.gob.ar](mailto:moralesc@comahue-conicet.gob.ar).
- Contribute to the expansion of pre-existing IS tools well established in Brazil, such as the Online Pollen Catalogues Network (RCPol). Contact researcher: Antonio Saraiva



[saraiva@usp.br](mailto:saraiva@usp.br).

- Participate of a citizen science initiative aimed at monitoring pollinator diversity, with an App that is currently in the last stages of development at the University of São Paulo. Contact researcher: Antonio Saraiva [saraiva@usp.br](mailto:saraiva@usp.br).
- Collaborate with the Brazilian Network of Plant-pollinator Interactions (REBIPP). Contact researcher: Antonio Saraiva [saraiva@usp.br](mailto:saraiva@usp.br).

### **Monitoring of colony losses**

Chairs: Dr. Fabrice Requier and Dr. Karina Antúnez

Dr. Requier presented the results of the first project completed by this group which were recently reported in the Journal of Apicultural Research (Trends in beekeeping and honey bee colony losses in Latin America, Requier et al., 2018). The preliminary results of the follow up project: "The first Latin America wide survey to monitor honey bee and stingless bee colony losses during 2016-2017"; were also presented.

The proposed work plan is as follows:

- Structure, coordinate, and conduct a new regional survey with a wider seasonal coverage for 2017-2018. This new survey would include summer (from October 2017 to April 2018) and winter (from April to October 2018) as opposed to only winter. The survey will be available on October 1<sup>st</sup>, 2018 and responses will be collected in each participating country until March 1<sup>st</sup>, 2019. Contact researcher: Dr. Fabrice Requier [frequier@unrn.edu.ar](mailto:frequier@unrn.edu.ar).
- Develop different extension strategies to spread the results of the surveys to beekeepers and the general public, through media such as: YouTube, Facebook, flyers, or PowerPoint presentations. Contact researchers: Carolina Morales [moralesc@comahue-conicet.gob.ar](mailto:moralesc@comahue-conicet.gob.ar) and Daniela Arredondo [danielarpapiol@gmail.com](mailto:danielarpapiol@gmail.com).
- Summarize the current results in a manuscript and submit for publication. Contact researcher: Fabrice Requier [frequier@unrn.edu.ar](mailto:frequier@unrn.edu.ar).

### **Pests and pathogens**

Chairs: Mag. Belén Branchiccela and Dr. Natalia Bulacio

This large group was divided into 4 subgroups, each with a distinctive line of work. The work plan for each subgroup is outlined below:

#### **1. *Varroa destructor***

- Estimate damage thresholds for *V. destructor* in different countries / regions. Contact researcher: Agostina Giacobino [giacobino.agostina@inta.gob.ar](mailto:giacobino.agostina@inta.gob.ar).
- Evaluate the effectiveness and extent of the use of screened bottom boards for the control of *V. destructor*. Contact researcher: Ciro Invernizzi [cirobee@gmail.com](mailto:cirobee@gmail.com).



## 2. *Aethina tumida*

- Develop a standardized regional protocol for *A. tumida* monitoring in bees (*A. mellifera* and native bees) that would include the use of sentinel hives. This protocol will allow the early detection of the beetle in the region. Contact researcher: Natalia Bulacio [bulacio.natalia@inta.gob.ar](mailto:bulacio.natalia@inta.gob.ar).
- Generate a fact-sheet detailing the characteristics of this pest to inform and alert the beekeepers. Contact researcher: Natalia Bulacio [bulacio.natalia@inta.gob.ar](mailto:bulacio.natalia@inta.gob.ar).
- Establish a collection of Coleoptera frequently found in hives. For this purpose, setting up of a unified protocol for sampling, conservation and taxonomic determination was proposed. This will be the starting point for the development of specific molecular detection methods. Contact researchers: Natalia Bulacio [bulacio.natalia@inta.gob.ar](mailto:bulacio.natalia@inta.gob.ar) and Karina Antúnez [kantunez03@gmail.com](mailto:kantunez03@gmail.com).
- It was agreed NOT to use or promote the use of synthetic products for beetle control.
- Prepare a review on the current status of *A. tumida* in Latin-America and the Caribbean. Contact researchers: Alexandra Palacio, [palacio.maria@inta.gob.ar](mailto:palacio.maria@inta.gob.ar), Natalia Bulacio [bulacio.natalia@inta.gob.ar](mailto:bulacio.natalia@inta.gob.ar) and Karina Antúnez [kantunez03@gmail.com](mailto:kantunez03@gmail.com).

## 3. Relationship between pathogens and bee ecotypes.

- First, it was stated that it is essential to define representative bioclimatic zones for LA and their relationship with bee populations. Thus, the first task of this group will be to define representative bioclimatic zones for each country, compare them across countries (based on environmental and biological factors) and from here, begin to relate subspecies or distinctive populations of *A. mellifera* and stingless bees with respect to pathogen diversity, pathogen loads, and susceptibility. Contact researcher: Martín Porrini [martinpablop@gmail.com](mailto:martinpablop@gmail.com).
- Start mapping the pathogens affecting bees (not limited to *A. mellifera*) in different bioclimatic regions. Contact researcher: Belén Branchiccela, [belenbranchiccela@gmail.com](mailto:belenbranchiccela@gmail.com).

## 4. Standardization of protocols for laboratory and field surveillance of pests and pathogens

- Adopt a unified set of protocols to be used in L.A. The protocols available from BeeBook will be reviewed, evaluated and, if necessary, adapted for their use in L.A. Contact researchers: Martín Porrini [martinpablop@gmail.com](mailto:martinpablop@gmail.com) and Patricia Aldea [patricia.aldea@mayor.cl](mailto:patricia.aldea@mayor.cl).

### **Products, services and added value**

Chairs: Dr. Andrés Delgado Cañedo, Dr. Marina Basualdo and Dr. Patricia Aldea.

This working group was divided into two subgroups for the round table discussions: "pollination" and "added value". From the discussions the following work plans emerged:

#### 1. Pollination

- Define the "pollination unit" for the main Latin American crops. The objective is to gather information on the number and characteristics of hives used for crop pollination in L.A. The ultimate goal is to standardize the number of hives / ha, determine the potential variation



between countries for the same cropping systems, and the characteristics that hives must have to be considered "good pollinators". Contact researcher: Patricia Aldea [patricia.aldea@mayor.cl](mailto:patricia.aldea@mayor.cl).

- Carry out a survey to determine the area planted with the most representative crops for the region and the number of mobilized hives used for their pollination. The goal is to make an economic assessment of the impact of commercial hive-mediated pollination on productivity and profitability for the farmers in L.A. Contact researcher: Marina Basualdo, [mbasu@vet.unicen.edu.ar](mailto:mbasu@vet.unicen.edu.ar).

- Review and translate the Beebook chapter related to the topic. Contact researchers: Patricia Aldea [patricia.aldea@mayor.cl](mailto:patricia.aldea@mayor.cl) and Marina Basualdo, [mbasu@vet.unicen.edu.ar](mailto:mbasu@vet.unicen.edu.ar).

## 2. Added value

- Survey the technical and research capabilities available in the region to perform physicochemical studies, compound isolation and characterization of biological activity; initially for honeys and propolis. Contact researcher: Laura Fariña, [lfarina@fq.edu.uy](mailto:lfarina@fq.edu.uy).

- Make a compendium of the procedures required to send / receive samples of beehive products between the countries of the region in order to proceed with further analysis at destination. Contact researcher: Patricia Aldea, [patricia.aldea@mayor.cl](mailto:patricia.aldea@mayor.cl) and Andrés Delgado Cañedo, [andres@unipampa.edu.br](mailto:andres@unipampa.edu.br).

- Review and determine the extent of typing and characterization (physicochemical properties, melissopalynological analysis, biological activity or other characteristics) for distinctive multifloral or monofloral honeys and propolis; from each country, in order to generate a primary database from information that is already available or published. Contact researcher: Andrés Delgado Cañedo, [andres@unipampa.edu.br](mailto:andres@unipampa.edu.br).

## **Impact of agrochemicals and other agricultural practices**

Chair: Dr. Horacio Heinzen

Dr. Heinzen made a presentation that covered multiple topics related to the effect of pesticides on bee health. His presentation triggered a rich discussion and exchange of ideas that is reflected in and proposed work plan as follows:

- Generate unified protocols for the sampling of bees and bee hive products in order to carry out pesticide residue analysis. Contact researchers: Sebastián Díaz Cetti, [scdiazcetti@gmail.com](mailto:scdiazcetti@gmail.com) and Patricio Crespo [patriciocrespo21@gmail.com](mailto:patriciocrespo21@gmail.com).

- Standardize the analytical methods for the detection of pesticide residues in different matrices. Contact researcher: Dr. Horacio Heinzen, [heihoracio@gmail.com](mailto:heihoracio@gmail.com).

- Standardize the protocols for biological assays of pesticide effects on bees. Contact researchers: Carmen Rossini, [crossinister@gmail.com](mailto:crossinister@gmail.com) and Karina Antúnez, [kantunez03@gmail.com](mailto:kantunez03@gmail.com).

- Generate recommendations for good agricultural practices coupled with best management practices for beekeepers. Contact researcher: Grecia de Groot, [grecia.degroot@gmail.com](mailto:grecia.degroot@gmail.com).

The II Workshop of SOLATINA concluded with the General Assembly where elections for the new Directive Board and Fiscal Commission for 2019-2020 were held. The results of the election ratified the current Directive Board.

Thanks to the active participation of all researchers and the generous sponsorship of multiple institutions, SOLATINA's II Workshop was a success. We hope that the lines of work proposed in this instance will promote the advancement of bee research in Latin America.



August 1st 2018, Institute for Biological Research Clemente Estable  
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