Action FA0803

CONSIGLIO PER LA RICERCA E LA SPERIMENTAZIONE IN AGRICOLTURA
UNITÀ DI RICERCA DI APICOLTURA E BACHICOLTURA

UNIVERSITÀ DEGLI STUDI DI PALERMO

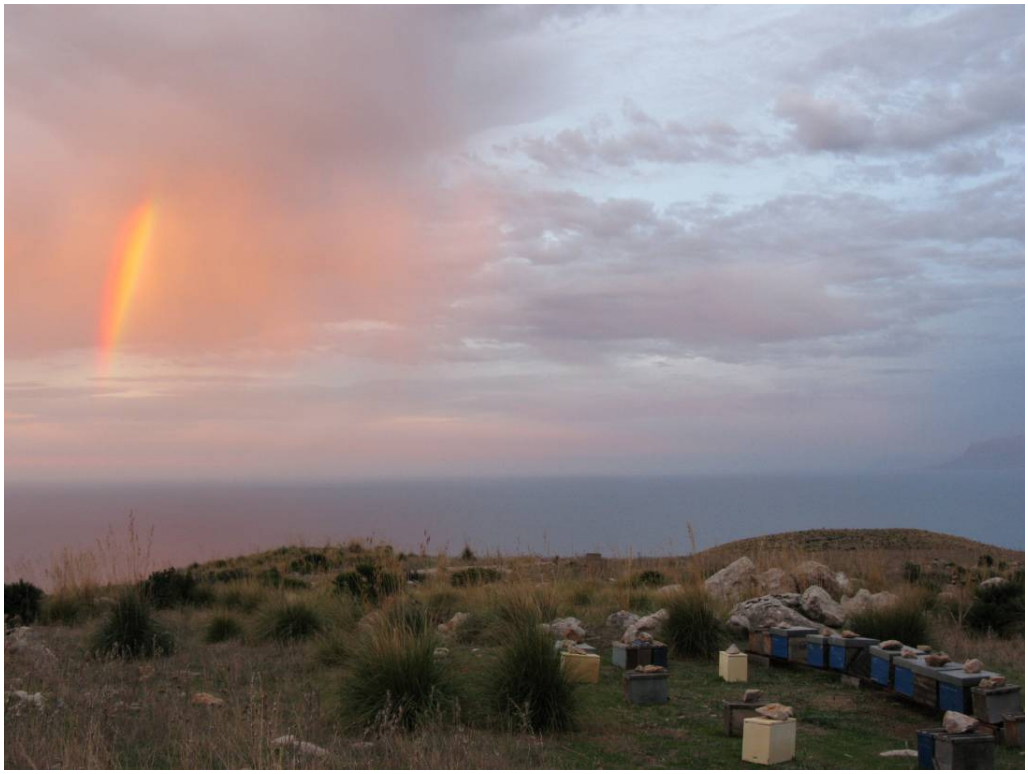
Prevention of Honey Bee Colony LOSSes
COLOSS

Ricola Foundation
Nature & Culture

Proceedings of the COLOSS WG4 Work Shop

"Revision of manuscripts and plans for sustainable breeding"

5-9 November 2012



Organised by

Consiglio per la ricerca e la sperimentazione in agricoltura – Unità di ricerca di apicoltura e bachicoltura (CRA-API)

Hosted by

Dipartimento dei Sistemi Agro Ambientali (SAGA), Università di Palermo

Organizing committee:

Cecilia Costa, Pellegrino Conte

Contacts:

CRA-API, via di Saliceto 80 – 40128, Bologna, Italy
Tel/Fax: +39 0522 285532
Cecilia Costa: cecilia.costa@entecra.it
Mob: +39 347 6665974

SAGA, Viale delle Scienze, edificio 4 - 90128 Palermo, Italy
Tel: +39 091 7028171; Fax: +39 091 484035
Pellegrino Conte: pellegrino.conte@unipa.it
Mob: +39 347 5972824

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Agenda

TIME	PROGRAM
5.11. 2012 (Monday)	
	Arrival in Palermo, individual transportation by train or bus to Palermo Central train Station (about 50 minutes)
19:00	Welcome at **Hotel del Centro** (Via Roma 72 - 90133 Palermo; Tel +390916170376 - Fax +390916173654 e-mail info@hoteldelcentro.it; www.hoteldelcentro.it) – drinks at bar while waiting for colleagues to arrive
20:00	Dinner at Pizzeria Italia, via dell'Orologio 54, 15 minute walk
6.11.2012 (Tuesday)	
08:00 - 08:30	Transfer to University (on foot 25 minutes or with public transport)
08:30 - 09:00	Registration
09:00 - 09:30	Welcome and organizational matters, work shop program (items: publications, Bee Book and future collaboration), working groups and practical arrangements
09:30 - 11:00	**GEI manuscripts session**: working groups on 1) Survival / Colony development / Behaviour; Disease results and 2) Genetic discrimination.
11:00 - 11:30	Coffee break
11:30 - 13:00	**GEI manuscripts session continues**
13:00 - 14:30	Lunch at Pasticceria Massaro
14:30 - 18:00	**GEI manuscripts session continues:** recombination and exchange of members if necessary
18:00 – 19:30	Walk back to Hotel
20: 30	Supper at Beati Paoli in Piazza Marina, visiting Kalsa quarter on the way
7.11.2012 (Wednesday)	
08:30 - 09:00	Transfer to University
09:00 - 10:30	**Future collaboration session:** Presentation and development of Ricola proposal topics, possible other frameworks for continuation of WG4 / reconstitution of Eurbee Breeding Group
10:30 - 11:00	Coffee break
11:00 - 13:00	**Future collaboration session continues**
13:00 - 14:00	Lunch at Pasticceria Massaro
14:00 - 16:00	**Future collaboration or Bee Book session**
16:00 – 16:15	Coffee break
16:15 – 18.00	**Bee Book session**
18:00 – 19:30	Walk back to Hotel visiting monuments / churches on the way
20: 30	Supper at restaurant in Vucciria quarter and night-time walk in historic city centre
8.11.2012 (Thursday)	
08:30 - 10:00	Transfer to University and sightseeing on the way
10:00 - 10:30	Short summary from Tuesday, **Manuscript working groups continues** if needed.
10:30 - 11:00	Coffee break
11:00 - 13:00	Working group summaries from the publishing groups, authorship issues and "what has to be done" discussion, closing of the publication working

	group session
13:00 - 14:30	Street lunch at Ballarò market
14:30 - 17:30	**Afternoon with bees, beekeepers, other colleagues** Transfer by train or cars with beekeepers of the association "Allevatori *Apis mellifera siciliana*" (who are involved in the Sicilian Black Bee conservation project) to visit the breeder Carlo Amodeo in Termini Imerese: - inspecting *A. m. siciliana* and hybrid colonies; - visiting the honey farm and tasting the many varieties of Sicilian honey.
17:30 – 20:00	Transfer to restaurant "Il Bragone" Discussion on the topic "Can different subspecies live together in peace on a single island ? Presentation of conservation projects: "the Læso story" by Per Kryger and "the Sicilian Slow Food story" by Carlo Amodeo
20:00 - 22:30	Social dinner in Termini Imerese with traditional Sicilian music
22:30	Return to Palermo
9.11.2012 (Friday)	
05:00 - 17:00	Departure

List of participants

Surname	Name	Institute	Country
Andonov	Sreten	Faculty for Agricultural Science & Food, Skopje	Macedonia
Bieńkowska	Malgorzata	Research Institute of Horticulture, Apiculture Division, Pulawy	Poland
Bouga	Maria	Agricultural University of Athens, Laboratory of Agricultural Zoology and Entomology, Athens	Greece
Büchler	Ralph	LLH, Bee Institute, Kirchhain	Germany
Cakmak	Ibrahim	Uludag University, AGAM, Gorukle Kampusu, Nilufer/Bursa	Turkey
Costa	Cecilia	CRA– Unità di ricerca di apicoltura e bachicoltura, Bologna	Italy
Filipi	Janja	The University of Applied Sciences "Marko Marulic", Knin	Croatia
Francis	Roy	Aarhus University, Research Centre Flakkebjerg	Denmark
Fuchs	Stefan	Institut für Bienenkunde Oberursel, Goethe-Universität Frankfurt am Main	Germany
Gajda	Anna	Warsaw University of Life Sciences, Faculty of Veterinary Medicine, Laboratory of Bee Diseases	Poland
Hatjina	Fani	Hellenic Institute of Apiculture (N.AG.RE.F.), N. Moudania	Greece
Ivanova	Evgeniya	Department of Developmental Biology, University of Plovdiv	Bulgaria
Kezic	Nikola	Faculty of Agriculture, University of Zagreb	Croatia
Kryger	Per	Aarhus University, Research Centre Flakkebjerg	Denmark
Le Conte	Yves	INRA, UMR 406 Abeilles et Environnement, Site Agroparc, Avignon	France
Lodesani	Marco	CRA– Unità di ricerca di apicoltura e bachicoltura, Bologna	Italy
Meixner	Marina	LLH, Bee Institute, Kirchhain	Germany
Oliveri	Eugenia	Dipartimento dei Sistemi Agro Ambientali (SAGA), Università di Palermo	Italy
Panasiuk	Beata	Research Institute of Horticulture, Apiculture Division, Pulawy	Poland
Uzunov	Aleksandar	Faculty for Agricultural Science & Food, Skopje	Macedonia
Wilde	Jerzy	Apiculture Division, Warmia and Mazury University, Olsztyn	Poland

Title:

New breeding strategies - in order to protect honey bee populations

Authors and Affiliations:

Małgorzata Bieńkowska[1], Sreten Andonov[2], Ralph Büchler[3], Cecilia Costa[4], Janja Filipi[5], Fani Hatjina[6], Evgeniya Ivanova[7], Nikola Kezic[8], Yves Le Conte[9], Beata Panasiuk[1], Aleksander Uzunov[2], Jerzy Wilde[10]

1) Research Institute of Horticulture, Apiculture Division, 24-100 Pulawy, Poland
2) Faculty for Agricultural Science and Food, bul. Aleksandar Makedonski b.b., 1000 Skopje, Republic of Macedonia
3) LLH, Bee Institute, Erlenstrasse 9, 35274 Kirchhain, Germany
4) Consiglio per la ricerca e la sperimentazione in agricoltura – Unità di ricerca di apicoltura e bachicoltura (CRA-API), Bologna, Italy
5) The University of Applied Sciences "Marko Marulic" in Knin, Knin, Croatia
6) Hellenic Institute of Apiculture (N.AG.RE.F.), N. Moudania, Greece
7) Department of Developmental Biology, University of Plovdiv, Bulgaria
8) Faculty of Agriculture, University of Zagreb, Svetosimunska 25, 10000 Zagreb, Croatia
9) INRA, UMR 406 Abeilles et Environnement, Laboratoire Biologie et Protection de l'abeille, Site Agroparc, Avignon, France
10) Apiculture Division, Warmia and Mazury University, Sloneczna 48, 10-710 Olsztyn, Poland

Text of Abstract: (limit text to 250-400 words)

Protecting honey bees requires the development and dissemination of improved breeding techniques to make them available for use in beekeeping. This will foster the implementation of the vitality criteria developed in the framework of the COLOSS genotype-environment interactions experiment. Here we propose to establish "permanent evaluation stations" in which selective breeding of the local bee populations can be carried out and in which the vitality parameters can be tested and validated at a local level in cooperation with beekeepers. Also we want to develop alternative estimation methods for breeding values.

Title:

Completion of the publication concerning the comparison of methods for *Apis mellifera* subspecies differentiation.

Authors and Affiliations:

Maria Bouga[1], Roy Mathew Francis[2], Per Kryger[2], Marina Meixner[3]

1) Agricultural University of Athens, Laboratory of Agricultural Zoology and Entomology, 75 Iera Odos St., Athens 11855 Greece
2) University of Aarhus, DJF, Research Centre Flakkebjerg, 4200 Slagelse, Denmark
3) LLH, Bee Institute, Erlenstrasse 9, 35274 Kirchhain, Germany

Text of Abstract:

The international experiment to estimate the importance of genotype-environment interactions on honeybee vitality and colony involved 18 strains of European honeybees in 16 test locations spread all over Europe. One of our main goals was to compare the methods for *A.m. mellifera* subspecies differentiation and to establish a common protocol for the discrimination of honey bee populations. In WG4, different methods have been applied to analyze samples of the colonies that are part of this common GEI experiment. The data obtained from each different method have been statistically proceeded and each method is accordingly estimated. The establishment of a Network of European conservation areas is included in our future plans.

Title:

A conservation project for the black bee *Apis mellifera siciliana*

Authors and Affiliations:

Cecilia Costa[1], Pellegrino Conte[2], Raffaele Dall'Olio[1], Marco Lodesani[1], Eugenia Oliveri[2]

1) Consiglio per la ricerca e la sperimentazione in agricoltura – Unità di ricerca di apicoltura e bachicoltura (CRA-API), Bologna, Italy
2) Dipartimento dei Sistemi Agro Ambientali (SAGA), Università di Palermo, Italy

Text of Abstract:

Conservation efforts for the black bee *A. m. siciliana* in Sicily began in the late 1980s, when some *A. m. siciliana* colonies were isolated on the small island Ustica to avoid introgression with the Italian peninsula yellow bee *A. m. ligustica*. Professional beekeeper Carlo Amodeo, and the Italian bee research unit CRA-API cooperated over 30 years of critical activity to preserve a pure population.
Recently, the Slow Food movement placed the Sicilian bee in the spotlight, and many Sicilian beekeepers are returning to use of the local black bee. In December 2011 a three year reintroduction project (APESLOW) was started, with the aim of establishing protected breeding areas for *A. m. siciliana* and to obtain a better knowledge of its biological and productive traits.
Here we present an overview of the project and will discuss the first results and future activities, also with the newly established Sicilian bee breeders association.

Title:

Thoughts on introducing "good strategy" varroosis treatment in beekeeping practice

Authors and Affiliations:

Stefan Fuchs[1], Ibrahim Cakmak[2]

1) Institut für Bienenkunde Oberursel, Goethe-Universität Frankfurt am Main, Germany
2) Uludag University, AGAM, Gorukle Kampusu, Nilufer/Bursa, Turkey

Text of Abstract: (limit text to 250-400 words)

„Good strategy" treatment strategy combines infestation level dependent treatment with requeening thus aiming to exert selection pressure on bee and mite genotypes towards tolerance offsetting adverse effects of conventional chemical treatment. "Good strategy" mimics natural selection but contrasts to "live or let die" strategies by avoiding bee losses and pronounced drifting associated with colony breakdown. Practical steps for implementation are under investigation on Marmara Island / Turkey. The current status of this project will be updated. Based on this experiences points will be discussed about possibilities and constraints to introduce the method in beekeeping in non-island situations. These include requirements of size and coherence of experimental areas, the degree of beekeeper compliance, the requirements of infestation diagnosis as measurements of population increase or of summer infestation, requeening sources and the role of selection via drones, as well as minimum requirements in listkeeping and data reporting .

Title:

The comparison of Nosema spore count determination methods within GEI experiment

Authors and Affiliations:

Anna Gajda, Grażyna Topolska, Urszula Grzęda

Warsaw University of Life Sciences, Faculty of Veterinary Medicine, Department of Pathology and Veterinary Diagnostics, Laboratory of Bee Diseases

Text of Abstract: (limit text to 250-400 words)

As initially intended in the GEI experiment, *Nosema spp* spore loads were to be determined by using the OIE protocol in all GEI countries, although it was not stated precise by which OIE protocol (the newest one is from 2008). It turns out that some participants used the older ones, which most likely will produce bias in results. Also, each participant included their own modifications, which might have influenced the outcome, although without proper method comparison it is impossible to say if it did.
Most participants used either 60 or 30 bees in the method. It has been proved by Spanish and Polish research, that both numbers give similar results. Only in the case of Bulgaria 10 bees were used, which might influence the outcome, due to a smaller chance to pick the infected bees in a sample of this size. Also most participants used bees from the outer frame. Only in case of France bees from the hive entrance were used, which may result in higher spore counts. Mostly abdomens were used and macerated manually. The biggest bias occurs in the amount of water used to crush the bees. In Greece and Germany the amount of water was very small compared to the number of bees used. In case of dr Fani Hatjina and dr Stefan Berg the suspension was then filtered, so the probability of losing many spores during the process is very high, because of high risk of water staying in the filter. In Finland the suspension was not filtered and we think it might influence the clarity of vision under the microscope, thus creating an error in spore counting. Also the fact of rinsing the mortar/pistil or stomacher bag may influence the outcome. If it is not performed some spores are lost. The final dilution is 1 ml per bee for most participants, only in the case of dr Fani Hatjina and dr Stefan Berg it is less than 1ml. The counting method will be discussed during the meeting in order to find out whether the final outcome is comparable for all the participants. In addition the comparative analysis conducted by dr Asli Ozkirim would be very helpful in determining whether the differences in sample processing influenced the results.