

# WOAH Collaborative Centre Reports Activities 2023

## Activities in 2023

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### Centre Information

<b>Title of WOA Collaborating Centre</b>	Good Beekeeping Management Practices and Biosecurity Measures in the Apiculture Sector
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<b>Name Director of Institute (Responsible Official):</b>	Stefano Palomba
<b>Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):</b>	Dr. Giovanni Formato (Head of Apiculture Laboratory)
<b>Name of the writer:</b>	Dr. Giovanni Formato & Dr. Marco Pietropaoli

### TOR1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOA

Category	Title of activity	Scope
Disease control (true)	National Research project IZS LT 08/22 RC	Title: "Assessment of welfare in Apis mellifera and development of operational protocols in relation to biosecurity and environmental context measures"
Training, capacity building (true)	Coordination of the HORIZON EUROPE International Research project B-THENET	Title: "Best Practices and Innovations for a Sustainable Beekeeping"
		The following laboratory analysis according to WOA Manual of Diagnostic Tests and Vaccines for Terrestrial Animals have been performed: 17 Varroa destructor infestation level assessment 19 Nosema spp. microscopy 222 American and European foulbrood cultural method 19 American foulbrood PCR end-point analyses 18 European foulbrood PCR end-point analyses 9 Aethina tumida identification 20 Aethina tumida PCR end-point analyses 4 Nosema ceranae PCR end-point analyses. Moreover, the following laboratory analysis have been performed: 47 inspections of affected samples 198

Diagnosis, biotechnology and laboratory (true)	Diagnostic activity (IZSLT Apiculture laboratory analysis)	morphometrical identification of Apis species 2 Acarapis woodi PCR end-point analyses 16 Lotmaria passim PCR end-point analyses 2 Crithidia spp. PCR end-point analyses 44 Deformed Wing Virus PCR end-point analyses 2 Israeli Acute Paralysis Virus PCR endpoint analyses 2 Kashmir Bee Virus PCR end-point analyses 3 Chronic Bee Paralysis Virus PCR end-point analyses 4 Acute Bee Paralysis Virus PCR end-point analyses 2 Black Queen Cell Virus PCR end-point analyses 2 Sac Brood Virus PCR end-point analyses 2 Lake Sinai Virus PCR end-point analyses 1 Slow Paralysis Virus PCR end-point analyses 73 analysis on honey and pollen (melissopalinalogical, palynological and humidity) 3000 Antibiotic susceptibility testing were performed according to the current legislation, and the relevant International Standards, and the protocols developed by the EURL-AR. Results were interpreted according to the Annex A of the Dec. 2020/1729/EU and to the "Manual for reporting 2021 antimicrobial resistance data within the framework of Directive 2003/99/EC and Decision 2020/1729/EU".
Disease control (true)	Integrated control of foulbroods	Field trial published in: Mosca, M., Bubnic, J., Giannetti, L., Fortugno, L., Pietropaoli, M., Manara, V., ... & Formato, G. (2023). Adoption of partial shook swarm in the integrated control of american and european foulbrood of honey bee (Apis mellifera L.). Agriculture, 13(2), 363
Training, capacity building (true)	Participation to EFSA Working group	EFSA campaign EFSA@Euchoosesafe food
Training, capacity building (true)	Provision of International FAO Training	Guidelines: PMP for Sustainable Beekeeping
Training, capacity building (true)	Participation to Regional Working Group in Beekeeping	Lazio Region Beekeeping Council
Training, capacity building (true)	Participation to National Working Group in Beekeeping	Working Group "Quality" CO FNOVI (National Federation of Italian Veterinary Orders) Certification of skills "beekeeping"
Training, capacity building (true)	TAIEX Visit (Egypt Ministry of Agriculture)	Study Visit: Series of events of protection of beehives and controlling of honey bee diseases and pests
Training, capacity building (true)	Horizon Europe Project	Project name: Improving Bees' Resilience to Stressors by Restoring Harmony and Balance. Project acronym: BETTER-B. Call: HORIZON-CL6-2022-BIODIV-02-two-stage. Partner activities during 2023: WP6 coordination, PCR development for SHB detection in bee hive debris, development of an on-line tool for beekeepers
Training, capacity building (true)	Signature of FAO Letter of Agreement	Letter of Agreement (Loa) GF NSAHD RY20300000000, PO Number 357176 "Development Of Infographics On Varroa Mite And Compendium

		On Biosecurity Measures For Bombus Spp"
Diagnosis, biotechnology and laboratory (true)	Participation in inter-laboratories validation programs for diagnostics	Aethina tumida ring test (morphological identification)

### TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable area
Participation in validation programs for diagnostics	Aethina tumida ring test (morphological identification)	Laboratory expertise

3. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?H?

No

4. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
OIE Reference Laboratory for American Foulbrood: Dr Adriana M. Alippi FAO	Rome	Americas Europe	Every year we organize at least one event on Biosecurity Measures in Beekeeping, involving other WOA?H Centres and FAO too. In 2023 we organized the 2nd International Symposium on biosecurity measures in beekeeping (webinar and by-person at FAO Headquarters in Rome) on the 18th of May 2023

### TOR4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Thailand Ministry of Agriculture	Rome	Asia and Pasific	Technical visit received from experts of the Thailand Ministry of Agriculture <a href="https://www.izslt.it/113808-2/">https://www.izslt.it/113808-2/</a>
			We invited WOA?H (Dr. Francois Diaz, Dr. Marc Schaefer) to be actively

SHB WOAHA Reference Laboratory	Rome	Europe	involved in the Advisory Board of the Horizon Project we are co-ordinating to place the first platform for European beekeeping on best beekeeping practices. It is a focal opportunity for networking and collaboration.
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## TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAHA?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
Dr. Giovanni Formato	Our Centre was requested by Dr. Tariq Taha (WOAHA Sub-Regional Representation for the Arabian Gulf) to be actively involved in a Webinar organized on the 17th of August 2023 on "Honey bee disease and prevention and best management practices in beekeeping".	Webinar organized on the 17th of August 2023 on "Honey bee disease and prevention and best management practices in beekeeping".

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

No

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAHA, to personnel from WOAHA Members?

Yes

a) Technical visit : 1

b) Seminars : 1

c) Hands-on training courses: 0

d) Internships (>1 month) : 0

TYPE OF TECHNICAL TRAINING PROVIDED (A, B, C OR D)	CONTENT	COUNTRY OF ORIGIN OF THE EXPERT(S) PROVIDED WITH TRAINING	NO. PARTICIPANTS FROM THE CORRESPONDING COUNTRY
A	TAIEX Study Visit: Series of events of protection of beehives and controlling of honey bee diseases and pests. 7-11 August 2023	Egypt	2
B	WOAHA Sub-Regional Representation for the Arabian Gulf Dr. Tariq Taha Honey bee disease prevention and best management practices 17 August 2023	Arabian Peninsula (Webinar)	25

## TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAHA?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	WOAHA and FAO Second International Symposium on biosecurity measures in beekeeping <a href="https://www.izslt.it/apicoltura/en/2023/05/10/webinar-second-international-symposium-on-biosecurity-in-beekeeping-18-maggio-2023/">https://www.izslt.it/apicoltura/en/2023/05/10/webinar-second-international-symposium-on-biosecurity-in-beekeeping-18-maggio-2023/</a>	IZSLT, WOAHA and FAO	2023-05-18	Online and by-person at FAO headquarter	80

International	B-THENET Accessibility To Veterinary Medicinal Products In Beekeeping In Europe – Webinar <a href="https://www.bthenet.eu/event/accessibility-to-vmps-in-beekeeping-in-europe-webinar/">https://www.bthenet.eu/event/accessibility-to-vmps-in-beekeeping-in-europe-webinar/</a>	IZSLT, BEELIFE	2023-07-07	Online and by-person in Romania	50
International	B-THENET: the first EU platform on best beekeeping practices <a href="https://www.bthenet.eu/event/eu-pollinators-week/">https://www.bthenet.eu/event/eu-pollinators-week/</a>	IZSLT, BEELIFE	2023-11-29	Online and by-person in Bruxelles (Copa-Cogeca)	80
National	National B-THENET events on best beekeeping practices <a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-09-28	Online and by-person in Rome, at IZSLT Headquarter	25
National	<a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-10-05	Online and by-person in Rome, at IZSLT Headquarter	25
National	<a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-10-12	Online and by-person in Rome, at IZSLT Headquarter	25
National	<a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-10-19	Online and by-person in Rome, at IZSLT Headquarter	25
National	<a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-10-26	Online and by-person in Rome, at IZSLT Headquarter	25
National	<a href="https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past">https://www.bthenet.eu/events/list/?tribe-bar-search=italia&amp;eventDisplay=past</a>	IZSLT, APIMONDIA and other local beekeepers' Organizations	2023-11-02	Online and by-person in Rome, at IZSLT Headquarter	25
International	IURC China event	IURC	2023-10-19	Online	100
National	National Congress of Argentina beekeeping - Congreso Argentino de Apicultura	Argentinian Association of Beekeepers (Sociedad Argentina de Apicultores – SADA)	2023-06-09	By-person in Azul, Buenos Aires province, Argentina)	150
International	Pilot study for PMP in beekeeping in Argentina	FAO, IZSLT, University of Mar del Plata	2023-08-29	Online and by-person in Mar del Plata (Argentina)	80

## TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAHA that may be useful to Members of WOAHA

a) Articles published in peer-reviewed journals:

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- Kovačić, M., Uzunov, A., Tlak Gajger, I., Pietropaoli, M., Soroker, V., Adjlane, N., ... & Büchler, R. (2023). Honey vs. Mite—A Trade-Off Strategy by Applying Summer Brood Interruption for Varroa destructor Control in the Mediterranean Region. *Insects*, 14(9), 751.
- Mosca, M., Bubnic, J., Giannetti, L., Fortugno, L., Pietropaoli, M., Manara, V., ... & Formato, G. (2023). Adoption of partial shook swarm in the integrated control of american and european foulbrood of honey bee (*Apis mellifera* L.). *Agriculture*, 13(2), 363.
- Scott, A., Hassler, E., Formato, G., Rünzel, M. A., Wilkes, J., Hassan, A., & Cazier, J. (2023). Data mining hive inspections: more frequently inspected honey bee colonies have higher over-winter survival rates. *Journal of Apicultural Research*, 62(5), 983-991.

b) International conferences:

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"Integrated Varroa Management in Italy. Review from 2010 to 2022" COLOSS Conference 2023 <https://coloss.org/event/4991/>

Screening new compounds against small hive beetles (*Aethina tumida*) with a novel acute toxicity bioassay and field trial. *Apimondia 2023. Proceedings*, page 229 <https://apimondia2023.com/docs/abstract-book.pdf>

*Preliminary study on the application of the information technology system "ClassyFarm" to the apiary for the evaluation of honey bee colony welfare. Apimondia 2023. Proceedings, page 169 <https://apimondia2023.com/docs/abstract-book.pdf>*

*Bottom-up approach for identifying priorities in EU beekeeping concerning Good Practices and Biosecurity Measures. Apimondia 2023. Proceedings, page 326 <https://apimondia2023.com/docs/abstract-book.pdf>*

*Safeguarding honey producers and consumers from counterfeit honey. FAO Global Conference on Sustainable Livestock Transformation. <https://www.fao.org/events/detail/fao-global-conference-on-sustainable-livestock-transformation/en>*

c) National conferences:

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*"Identificazione e caratterizzazione di patogeni noti, emergenti e simbiotici di Apis mellifera nel territorio italiano mediante protocolli molecolari e tecnologie NGS: risultati preliminari" SIDILV Congress 2023 SIDILV- Ref 075 <https://sidilv.org/atti-dei-congressi/>*

d) Other (Provide website address or link to appropriate information):

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

*We are promoting and developing the first EU platform for EU beekeeping, which includes research, technologies and state of the art of innovations in beekeeping*

12. Additional comments regarding your report:

*In 2023, in collaboration with FAO Oman, we organized in 2023 in Muscat (Oman) a one-week training course for a Food Safety Laboratory to harmonize good practices to produce high quality honey and to evaluate quality of honeys. It should be good to identify other WOAHL laboratories in the Arabic peninsula, to have a stronger network of labs involved in beekeeping practices and honey bee diseases.*