



Giovanni Formato

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ABOUT ME

Giovanni Formato is a veterinarian (DVM), specialized in "Food inspection of animal products", expert on "bee disease and management". He collaborates with Government Institutions, Universities, other laboratories and International Organizations (FAO, WOAH).

Training:

- Veterinary Medicine Degree - University of Bologna in 1998.
- Master degree in "Food Safety of Animal Products" – University of Bologna in 2002–2003.
- Master degree in "Pathology and general apidology" - University of Pisa, in 2008–2009.

Specialization courses:

- Inspection of Food of Animal Origin, at the University of Teramo
- "Control and self-control of food products", at the Catholic University of the Sacred Heart of Rome
- "Epidemiological methods in veterinary public health", by the Experimental Zooprophylactic Institute of Abruzzo and Molise, Teramo branch.

Professional activities:

- Since 1998, Dr. Formato is working at IZSLT that is a Animal Health and Food Safety Official laboratory of Italian Ministry of Health.
- Since 2009, Dr. Formato is the person in charge for the Apiculture sector in IZSLT. - Currently he is incharge for IZSLT for the "Research and international cooperation for the development of sustainable beekeeping" sector.
- Since 2021, he is the "Contact Point" of the "WOAH Collaborating Centre for Good Beekeeping Management Practices and Biosecurity Measures in the Apiculture Sector", that is placed in IZSLT; - Since August 2022, he is DISCONTOOLS expert group member on Varroosis;

Ongoing EU research project in which Dr. Formato is currently involved:

As project coordinator:

- From September 2022-2026: Dr. Formato is Coordinator of the Horizon EU project "Best practices and innovations for a sustainable beekeeping" (acronym B-THENET) Thematic Network. To set-up the first platform for EU beekeepers on best beekeeping practices for sustainable beekeeping.

As project partner:

- INSIGNIA-EU project (2022-2024), funded by the European Union under grant N° 09.200200/2021/864096/SER/ENV.D.2. The project is a EU pilot project to standardize the protocols to collect data on environmental pollution using the honey bees.
- June 2023: leader of WP6 "Future of EU beekeeping under Global Change Pressures" of the Horizon EU project "Improving bee's resilience to stressors by restoring harmony and balance" (acronym BETTER-B).

Other activities of Dr. Formato in the beekeeping sector:

- 2016-2022: co-funder and President of the Scientific Society of Veterinarians in Apiculture (SVETAP);
- in 2019: co-funder of the International Society of Veterinarians in Beekeeping (Vets4Bees);
- Since 2021, he is member of the Bee Health Commission of the International Federation of Beekeepers' Associations – APIMONDIA;
- Since 2013 to date, he is member of the COLOSS International Association of researchers in beekeeping (2016-2019 member of the Executive Committee; 2013-2016 leader of the Varroa Control Task Force; from 2018 to date: member of the "Small Hive Beetle Task Force").

EDUCATION AND TRAINING

31/08/1989 Bologna, Italy

VETERINARY DIPLOMA University of Bologna

Final grade 110/110 30/09/1998

Rome, Italy

TRAINING WHO-FAO Collaborating Centre for Veterinary Public Health

Training on the main principles of: 1) animal health emergency preparedness planning; 2) the multidisciplinary collaboration in Veterinary Public Health.

22/11/1998 Rome, Italy

TRAINING Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana (IZSLT)

IZSLT is a Government laboratory that provides services for animal health and food safety.

Training activities:

- 1) laboratory diagnosis: official laboratory techniques to detect animal health (2 years) and food safety (2 years);
- 2) research activities in projects focused on: transmissible spongiform encephalopathies - TSE (1 year); foodoperators training (1 year); HACCP and risk analysis (1 year); Honey bee pathogens (4 years).

30/09/1998 Teramo, Italy

COURSE: "BASIC EPIDEMIOLOGICAL METHODS IN VETERINARY PUBLIC HEALTH" Istituto Zooprofilattico Sperimentale di Abruzzo e Molise

31/10/1999 Teramo, Italy

SPECIALIZATION IN: "FOOD INSPECTION OF ANIMAL PRODUCTS" University of Teramo

30/09/2001 Rome, Italy

COURSE ON: "THE HACCP SYSTEM" Sacred Heart University

17/09/2006 Ghent, Belgium

COURSE ON "LABORATORY TECHNIQUES FOR DIAGNOSIS OF HONEYBEE DISEASES" University of Ghent

28/02/2007 Pisa, Italy

MASTER (II LEVEL): "BEE PATHOLOGY AND GENERAL APIDOLOGY" University of Pisa

06/04/2014 Brussels, Belgium

CONFERENCE PARTICIPATION DG Sanco - Health and Consumers of European Commission

"Conference for better bee health" updating on honey bee mortality in Europe and EU solutions to prevent colony losses.

05/09/2011 Praha, Czechia

TRAINING COURSE OF EUROPEAN COMMISSION - BTSF ON ANIMAL HEALTH OF BEES. European Commission

19/06/2016 Madrid, Spain

BEEKEEPING: INTRODUCTION TO MAIN TOPICS: HOW TO ASSESS MEDICINAL PRODUCTS FOR BEES" Spanish Agency of Medicines and Medical Devices (AEMPS) in collaboration with the EU Networking Tra

Beekeeping: introduction and on-field practices; honey bee diseases: theory and on field sygns; medicinal products for bees: description and assessment.

12/09/2016 Malibor, Slovenia

TRAINING SESSION ON HEALTH AND DISEASE PREVENTION FOR BEES" Health & Consumer

Protection Directorate General (DG SANTE) and Public Health Executive Agency (PH)

General: honey bee biology; honey bee pathology; control of the honey bee diseases; legislation.

On field (apiary and honey houses) p ractical demonstrations.

12/12/2020 Pisa

CORSO DI ALTA FORMAZIONE: "CORSO DI FORMAZIONE MANAGERIALE PER DIRIGENTI DI STRUTTURA COMPLESSA" – Scuola Universitaria Superiore Sant'Anna di Pisa

Sanitary direction and management. Responsibility on complex structures

(D.lgs. 502/92 e DPR 484/97 - svolgimento di incarichi relativi alle funzioni di direzione sanitaria aziendale e per la direzione di strutture complesse). 01/09/2002 – 01/09/2003 Bologna, Italy

INTERNATIONAL II LEVEL MASTER IN "FOOD SAFETY OF ANIMAL PRODUCTS" University of Bologna

I prepared my experimental thesis from 19/09/2003 to 18/11/2003 at the Microbial Food Safety Laboratory in the Department of Animal and Food Science of the Colorado State University of Fort Collins (USA), with Prof. John Sofos

Address Via Zamboni 33, 40125, Bologna, Italy | **Field of study** Agriculture, forestry, fisheries and veterinary |

Thesis Fate of acid adapted and non-acid adapted Listeria monocytogenes on bologna formulated with or without antimicrobials, during storage at 10°C and exposure to simulated gastric fluid

WORK EXPERIENCE

31/01/2019 – CURRENT

HEAD OF THE LABORATORY: "APICULTURE, HONEY BEE PRODUCTIONS AND DISEASES". ISTITUTO ZOOPROFILATTICO SPERIMENTALE DEL LAZIO E DELLA TOSCANA

In the context of the UOC Structure "Hygiene of the productions and Animal Health" (DG N. 146 del 8/3/2019 e N. 150 del 18/03/2019). 31/07/2009 – 30/01/2019 Rome, Italy

HEAD OF THE "APICULTURE" OPERATIVE UNIT OF IZSLT ISTITUTO ZOOPROFILATTICO SPERIMENTALE DEL LAZIO E DELLA TOSCANA "M. ALEANDRI" (IZSLT)

IZSLT is a Government laboratory that performs laboratory analysis, research, epidemiological surveillance, continuous training and international cooperation activities.

In the Apiculture Unit I'm in charge of the activities related to: 1) diagnosis of honey bee diseases; 2) honey bee genetics (morphometrical analysis and morpho-functional evaluation of honeybees); 3) palinological analysis; 4) technical support for Government Institutions (e.g. to draw-up legislation); 5) scientific research (e.g. clinical trials on honeybees, test effectiveness of veterinary medicines, implementation of new strategies to fight honey bee diseases, etc.); 6) collaboration with other laboratories (e.g. biotechnology labs, chemical labs, etc...for analitical purposes); 7) technical support and training for operators (beekeepers, veterinarians, food operators, etc.); 8) management of the IZSLT experimental apiary; 9) management of IZSLT preservation apiary of *Apis mellifera ligustica* bee.

Address Via Appia Nuova, 1411 (Apiculture Unit), 00178, Rome, Italy

EXPERT ITALIAN MINISTRY OF HEALTH

Component of the Coordination Group of the Italian Ministry of Health of the EU project: EPILOBEE to set up an active epidemiological surveillance programme on honeybee colony mortality.

Activities: to support the Ministry in training and coordination of the Veterinary Services of Central Southern Italy

to realize the EPILOBEE project. Responsibilities: Central-Southern Italy. 21/12/2010 – 11/05/2015 Rome, Italy

EXPERT ITALIAN MINISTRY OF HEALTH

Activities: as a component of the "Advisory Commission of Veterinary Medicines", to provide expertise in the authorization of veterinary medicines.

08/09/2013 – CURRENT Rome, Italy

EXPERT ITALIAN MINISTRY FOR THE ENVIRONMENT, LAND AND SEA (MOE)

As a component of the Working Group of the Italian Ministry for the Environment, Land and Sea (MoE), to implement the Directive 2009/128/EC establishing a framework for Community action for the purposes of sustainable use of pesticides.

31/01/2015 – CURRENT Italy

CONSULTANT/EXPERT FOR TECA-FAO ISTITUTO ZOOPROFILATTICO SPERIMENTALE DEL LAZIO E DELLA TOSCANA

Collaboration with FAO, from Feb 2015:

1) Publication of the TECA-FAO Technologies (IT, ES, EN, FR languages) of:

a) Main diseases of honey bees <http://www.fao.org/3/CA3135EN/ca3135en.pdf> and www.fao.org/3/i9466en/i9466EN.pdf

b) Varroa mites - www.fao.org/3/i9466en/i9466EN.pdf

c) Nosemosis - www.fao.org/3/CA3136EN/ca3136en.pdf

d) American Foulbrood - <http://teca.fao.org/es/read/8412>

e) European Foulbrood - <http://teca.fao.org/fr/read/8418>

f) Amebiasis - <http://teca.fao.org/es/read/8412>

g) Chalkboard and Stonebrood - <http://teca.fao.org/read/9002>

h) Small hive beetle - <http://teca.fao.org/es/read/8412>

i) Tropilaelaps – <http://teca.fao.org/es/read/8412>

l) Bee viruses - <http://teca.fao.org/es/read/8419>

2) Moderation of a TECA FAO discussion on "Veterinary medicines in beekeeping around the world: which active ingredients are in use and do they respond to the needs of beekeepers?".

3) Survey Monkey on "Veterinary medicines in beekeeping around the world: which active ingredients are in use and do they respond to the needs of beekeepers?" (languages: IT, ES, EN, FR).

4) Publication of a TECA-FAO thematic catalogue for smallholder farmers to promote innovation "Main bee diseases: Good beekeeping practices". Printed in 2018 and 2019. FAO documents repository link: <http://www.fao.org/3/i9466EN/i9466en.pdf>

5) Oct 2019 - Nov 2020: LoA between FAO's Animal Genetic Resources AGAG (FAO) and the IZSLT for the "Development of Guidelines on Good Beekeeping Practices allowing to obtain high quality products with a focus on small-scale farmers and beekeepers". Practical/visual Manual.

31/12/2012 – CURRENT Bern, Switzerland

ACTIVE MEMBER OF THE COLOSS ASSOCIATION COLOSS (COLONY LOSSES INTERNATIONAL ASSOCIATION)

From 2013 to 2019: co-leader of the "Varroa Control Task-Force" of the COLOSS International Association.

From 2016 (12 COLOSS Conference in Cluj-Napoca, Romania) to 2019 (15th COLOSS Conference inth Montreal, Canada), member of the Executive Committee (EC) of the COLOSS international Association (<https://coloss.org/>).

From 2018 to date: member of the "Small Hive Beetle Task Force" of the COLOSS international Association.

31/12/2019 – CURRENT Rome, Italy

COLLABORATIONS WITH FAO IZSLT

In 2019-2020, in collaboration with FAO NSA, FAO TECA beekeeping, Apimondia and the EU project BPRACTICES, we set up N. 3 risk-assessment surveys (in ten different languages) on:

- 1) varroa management (including GBPs and biosafety measures in beekeeping - BMBs)
- 2) antimicrobial resistance and related practices
- 3) honey bees infectious diseases and related practices

In 2018 and 2019 I took part to several meetings in FAO of the AMR Working Group and we set up the AMR Progressive Management Pathway (PMP).

In 2020, I organized 2 WEBINARS, with the Animal Production and Health Division and the FAO Sustainable Livestock Technical Network:

- Why sustainable beekeeping? (23 October 2020);
- Keeping bees around the world. Not just honeybees and beehives (30 October 2020).

In 2020 I contributed to the set-up of the following FAO Infographics:

- "Beehives products" (translated in English, Russian and Spanish). Published and printed for the World BeeDay 2020.
- "Pollinators"
- "Honey"

In 2020, with FAO NSA, I organized in collaboration with Junxia Song, Lina Yu and Apimondia, the Expert meeting on "mainstreaming sustainable beekeeping into FAO animal production and health programme".

Letters Of Agreement between IZSLT (coordinated by Giovanni Formato) and FAO:

- 2018-2019: Letter of Agreement (LoA) GF AGAHD, PO number 334292. "Guidelines for a proper use of antimicrobials in beekeeping", with Animal Production and Health Division (AGA);
- 2019-2020: Letter of Agreement (LoA) GF AGAGD, PO number 340550. "Development of Guidelines on Good Beekeeping Practices allowing to obtain high quality products with a focus on small-scale farmers and beekeepers". IZSLT DG N. 23, 23/01/2020 - IGA GEN 20FAOA.
- 2019-2020: Letter of Agreement (LoA) GF AGAHD, PO Number 342982. "Experts meeting on mainstreaming sustainable beekeeping into FAO animal production and health programme". IZSLT DG N. 24, 23/01/2020 - IGA GEN 19FAOA.
- 2020-2021: Letter of Agreement (LoA) GF.NSAGD.RA, PO Number 346561. "Online Publication of Guidelines and a practical manual for Good Beekeeping Practices". IZSLT DG N. 24, 23/01/2020 - IGA GEN 20FAOB.
- 2021-2022: Letter of Agreement (LoA) GF, PO Number 351806. "Development and dissemination of Progressive Management Pathway for AMR (PMP-AMR) in beekeeping and launching AMR/AMU/GBPs/BMBs surveys among beekeepers".

From January 2022 to June 2023: collaboration with the Greenhouse Gas Management Institute-Italy (GHGMI-I), FAO, and the Omani Ministry of Agricultural Wealth, Fisheries and Water Resources for the "Provision of services related to strengthening SME's capacities for sustainable and economic apiculture in the Sultanate of Oman".

From April 2022 to July 2022: Honey Bee diseases and pests FAO consultant. Goal: to develop beekeeping and honey production, in the FAO-Saudi Technical Cooperation Programme (2019-2025) "UTF/SAU/051/SAU Strengthening MoEWA's Capacity to Implement the Sustainable Rural Agricultural Development Programme"-

14/01/2020 – CURRENT Rome, Italy

HEAD OF THE APICULTURE UNIT – HEALTH AND BIOSECURITY OF THE FAO REFERENCE CENTRE FOR ANIMAL HEALTH AND FOOD SECURITY PLACED IN IZSLT

1. Provide diagnostic services in case of suspected and confirmed outbreaks of honey bee diseases. Type/characterize the isolates and include FAO in the communication flow with the interested Member Country when providing laboratory reports.
2. In response to request by FAO and/or by another FAO reference Centre of for Apiculture NL, transfertechnology of standardized methods, for diagnosis in order to improve the performance and harmonization of laboratory services.

3. Carry out a maximum of 2 assessments at beehive level and 2 training sessions of application of quality assurance and biosafety standards to FAO Member Countries per subject/diseases per year.
4. Contribute to capacity development for Apiculture and provisional region leading laboratories through organization of trainings on bee diseases diagnosis and proficiency testing services, evaluation of opportunities for undertaking of twinning programs or any other action that could support this service.
5. Participation in validation programs for diagnostics.
6. Provide technical expert services (consultation, meetings) to FAO, of at most 3 persons days per year in order to improve Apiculture and to assess biosecurity at farm level. These services include teleconferencing and training and laboratory support of the requester FAO Member Country.
7. Organize study visit for specific programs based on FAO specific requirements on Apiculture.
8. Collaboration to applied research projects aiming to the continuous improvement of existing tests, development of new diagnostic tools.
9. Provision of basic text services, advanced diagnostic test and NEXT GENERATION SEQUENCING test.

10/06/2021 – CURRENT Rome, Italy

HEAD OF THE WOAH (EX-OIE) COLLABORATING CENTRE PLACED IN IZSLT

The WOAH Collaborating Centre for Good Beekeeping Management Practices and Biosecurity Measures in the Apiculture Sector supports the WOAH (ex-OIE) in assisting its Member Countries on various activities related to the application of good beekeeping management practices and biosecurity measures in the apiculture sector. It supports an increase of quality of hive productions, orienting toward a proper and prudent use of the medicines in beekeeping, in line with the OIE Sixth Strategic Plan.

The activities of the Collaborating Centre are mainly related to “Focus Area 3” (main focus area) - *Animal Health Management*:

1. Honey bee diseases control, risk assessment and preparedness.
2. Good Beekeeping Practices.
3. Biosecurity measures in beekeeping/value-chain biosecurity.
4. Innovation in prevention and control of honey bee diseases (e.g. bacteriophages, bacteriocins, integrated pest management – IPM, organic compounds, etc.).
5. Sustainable approach to control bee diseases.
6. Proper use of antimicrobials in bees.
7. Antimicrobial resistance.

Moreover, the activities of the Collaborating Centre are related to the following areas:

- Laboratory expertise (F.A. 1)
- Training and education (F.A. 2)
- Animal production (F.A. 4)
- Veterinary products (F.A. 5)
- Wildlife health and biodiversity (F.A. 6)

31/12/2014 – 30/12/2021

COLLABORATION WITH FAO TECA BEEKEEPING TECHNOLOGIES EXCHANGE GROUP

Collaboration with TECA-FAO beekeeping exchange group:

I set-up the 1st versions of the TECA cards on honey bee diseases (LoA FAO-Apimondia 2015).

I coordinated n. 2 moderated online discussions:

- 1) “Use of veterinary medicines in beekeeping” (2015). In parallel we launched one survey on “Veterinary medicines in beekeeping around the world: which active ingredients are in use and do they respond to the beekeepers’ needs?”;
- 2) “Simplified methods for field diagnosis of honey bee diseases” (2017).

I coordinated n. 2 publications:

- 1) “Practical manual on how to identify and control the main honeybee diseases”, reviewed and reprinted again in 2020. DOI: <https://doi.org/10.4060/ca9182en>. Available online: <http://www.fao.org/3/ca9182en/CA9182EN.pdf> 2) FAO, Apimondia, IZSLT. 2021. Visual manual on good beekeeping practices for small-scale beekeepers in Africa. TECA – Technologies and practices for small agricultural producers. N. 2.

18/03/2022 – 30/03/2022 Muscat, Oman

MISSION IN OMAN FOR A RISK ASSESSMENT ACTIVITY TO IMPLEMENT BEE HEALTH AND THE BEEKEEPING SECTOR IN THE SULTANATE OF OMAN. ISTITUTOZOOPROFILATTICO

During our staying in Oman, in collaboration with Greenhouse Gas Management Institute-Italy (GHGMI-I), with the support of FAO and the Omani Ministry of Agricultural Wealth, Fisheries and Water Resources, we realized the following activities:

- on-site organization of n. 2 workshops on good beekeeping practices and biosecurity measures to local beekeepers: one on 23/03/2022 in Ibra (Ash Sharqiyah North Governorate of Oman) and another one on 27-28/03/2022 in Nizwa (Ad Dakhiliyah Governorate of Oman);
- on-site inspection of the most relevant Omani analytical laboratories (official/public and private ones) to assess their capacity for the physico-chemical analysis of honey, palynological analysis, detection of residues of heavy metals and insecticides (used for plants and for varroa treatments) in hive products, diagnosis of honey bee diseases;
- on-site inspection of 2 Omani apiaries, one in the Ash Sharqiyah North Governorate of Oman (28/03/2022), and another in the Ad Dakhiliyah Governorate (28/03/2022) to assess equipment and skills of local beekeepers in managing bees and to train beekeepers on: on-field varroa evaluation methods for monitoring infestation levels (powdered sugar method), varroa treatment with low environmental impact compounds (trickled oxalic acid);
- administration of risk assessment surveys to Omani beekeepers (29) to investigate the level of knowledge and awareness on Good Beekeeping Practices (GBPs), Antimicrobial Use (AMU) and Antimicrobial Resistance (AMR) in apiculture.

16/04/2022 – 05/07/2022 Riyadh, Saudi Arabia

FAO HONEY BEE DISEASES AND PESTS CONSULTANT FOOD AND AGRICULTURE ORGANIZATION

In the context of the framework of FAO-Saudi Technical Cooperation Programme (2019-2025) "UTF/SAU/051/SAU Strengthening MoEWA's Capacity to Implement the Sustainable Rural Agricultural Development Programme", 2nd component "Development of beekeeping and honey production" I carried out and lead the following tasks:

_{FO_B2} Review the existing beekeeping industry in the Kingdom of Saudi Arabia, the management practices including different species, beekeeping practices (dedicated and non-dedicated beekeepers – rearing of imported packaged live honeybees), and assess their impact on honeybee's health in the KSA,

_{FO_B2} Identify major diseases and pests affecting honeybees in the KSA and assess their impact, underlying causes of their presence and provide recommendation on assessment tools, approaches and techniques to limit their spread,

_{FO_B2} Design and conduct study to assess the prevalence Nosema disease in the Kingdom of Saudi Arabia, its current geographical distribution, magnitude, and the underlying causes and suggest approaching, and methods to minimize its spread and impact,

_{FO_B2} Prepare recommendations relating to ameliorating the impact of the Nosema on small scale beekeepers including options to provide direct material and or financial support,

_{FO_B2} Lead the preparation of technical manual on diagnosis and control of honeybee disease and pests, _{FO_B7} Contribute to workshops involving different stakeholders to discuss and validate the proposed national honeybee's health and disease control strategy,

_{FO_B2} Lead the preparation of an IPM plan for the control of honeybee diseases and pests in the country, _{FO_B7} Contribute to the organization of workshop on honeybee diseases and pests.

CONFERENCES AND SEMINARS

31/12/2004

Participation to International meetings, conferences and seminars

From 2005 to current, Dr. Formato participated to several International meetings, conferences and seminars (see

Anex 1) 24/02/2022 – 25/02/2022 Rabat (Morocco)

Presentation of 2 talks, during the scientific symposium on bee colony collapse disorder in Morocco.

Presentation of the following N. 2 talks, during the scientific symposium organized by ONSSA (Office National de Sécurité Sanitaire des Produits Alimentaires) in Morocco:

- 1) on 25/02/2022, talk: "Application of beekeeping practices"
- 2) on 26/02/2022, I animated discussion of the Workshop 2 "Improvement and optimization of beekeeping technical management".

08/03/2022 – 08/03/2022 Webinar organized by REMESA (OIE-FAO Subregional Representations for North Africa) **Scientific symposium on first North African meeting for Honey bee diseases**

The joint Secretariat of REMESA (OIE-FAO Subregional Representations for North Africa) – in collaboration with the technical expertise provided by the FAO Reference Centre for Apiculture, Health and Biosecurity (IZSLT, IZSVE) - organized with ONSSA (Office National de Sécurité Sanitaire des Produits Alimentaires) the first North African meeting for Honey bee diseases with the objective of making the state of play of the situation in the subregion and propose follow-up activities by forming a dedicated working group.

Giovanni Formato presented the talk: "Overview of Beekeeping in southern Europe and Good Beekeeping Practices".

22/03/2022 – 22/03/2022 Ibra (Ash Sharqiyah North Governorate of Oman) - Oman.

Organization and presentation of N. 1 workshop in Ibra, on: "Good Beekeeping Practices and Biosecurity Measures for the main honey bee diseases in Oman".

26/03/2022 – 27/03/2022 Nizwa (Ad Dakhiliyah Governorate of Oman) - Oman

Organization and presentation of N. 1 workshop in Nizwa, on: "Good Beekeeping Practices and Biosecurity Measures for the main honey bee diseases in Oman".

30/04/2022 – 30/04/2022 Webinar (participation from Saudi Arabia)

Speaker with the lecture: "Allergenic and toxic pollens", in the context of the webinar organized by IZSLT and the beekeepers' association GAS "Food safety of hive products".

L'evento misto (webinar + partecipazione in presenza) dal titolo "Sicurezza alimentare nei prodotti dell'alveare", è stato organizzato dall'IZSLT in collaborazione con la associazione di apicoltori della Regione Lazio Gruppo Api Sparse (GAS).

Il titolo della mia presentazione è stato: "Pollini allergenici e tossici" (allergenic and toxic pollens).

22/02/2022 – 22/02/2022 FAO virtual event - webinar.

Speaker. Talk: "The FAO guidelines on Good Beekeeping Practices for Sustainable Apiculture".

Virtual Webinar Meeting organized by FAO to launch the FAO Guidelines on sustainable apiculture. FAO Virtual Event

- New publication: Good beekeeping practices for sustainable apiculture.

Links <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1470032/> | <https://www.fao.org/3/cb5353en/cb5353en.pdf> | https://twitter.com/apimondia/with_replies

18/05/2022 – 18/05/2022 Riyadh

Speaker of the presentation "Impact of climate change on beekeeping".

During the event organized by the Ministry of Water, Environment and Agriculture of Saudi Arabia to celebrate the World Bee Day 2022, I presented as FAOSA the talk on the "impact of climate change on beekeeping".

Links <https://saudiarabia.un.org/en/182791-world-bee-day-celebration-kingdom-saudi-arabia> | https://twitter.com/agri_ext/status/1526851758579916801?s=24&t=3GJNxlaU1U1j7N0y6oWqgg

10/06/2022 – 10/06/2022 Webinar organized by IZSLT and WOAH with Ciscowebex (timing CET)

Organizer, Moderator and Speaker at the "International Webinar Symposium on Biosecurity Measures in Beekeeping"

The webinar was organized in collaboration between IZSLT (to celebrate its first year since the nomination as WOAH Collaborating Centre for Good Beekeeping Management Practices and Biosecurity Measures in the Apiculture Sector) and WOAH.

Main goal was to show participants relevant information concerning different approaches and initiatives that are applied in different areas of the world to guarantee bee health and the application of the good beekeeping practices. Several talks were provided by different international Organizations like the World Organization for Animal Health (WOAH), the Food

and Agriculture Organization of the United Nations (FAO) and the International Federation of Beekeepers' Association (Apimondia). Moreover, experts from all over the world joined the workshop, providing their knowledge and practices.

Link <https://www.izslt.it/apicoltura/en/2022/05/26/international-symposium-on-biosecurity-measures-in-beekeepingwebinar-10-giugno-2022-izs-lazio-e-toscana/>

18/10/2022 – 18/10/2022 SHB COLOSS Task Force event, 18th COLOSS eConference

Speaker of the presentation "Adoption of the Mobile Divider in Calabria (Italy): results from citizen scientist beekeepers"

Aethina tumida (*A. tumida* MURRAY, 1867), even called the small hive beetle (SHB), is a parasite native to sub-Saharan Africa. In EU Aethinosis is a notifiable honey bee disease and it's subject to surveillance and eradication plans (Regulation (EU) 2017/625). *A. tumida* negatively impacts on beekeeping economy and honey bee health. Indeed, both larvae and adults live most of their biological cycle in honey bee colonies and are able to induce honey fermentation making it not suitable for human consumption. Moreover SHB may be responsible of absconding, hive depopulation and colony mortality.

SHB in 2014 arrived in Calabria and Sicily where it was source of hurdles to local beekeeping economy due to the sanitary measures (stop in exports and in trade of honey bees) and to the efforts done to attempt eradicating the parasite. Currently, a strategic distribution of sentinel colonies (Formato et al. 2021) provide support to monitor the spread of the disease.

As a result of an effective eradication plan, SHB has been stamped out in Sicily region, but not in Calabria, where it is still affecting apiaries located in Reggio Calabria province (Granato et al. 2017; NRL-HBD, 2022). On-field diagnosis of SHB can be carried out by dedicated clinical inspection of the colonies (Nota 0020069-01/10/2014-DGSAT-COD_UO-P), that may be supported with the adoption of internal traps, like the Mobile divider (Rivera-Gomis, J. et all. nel 2017, Di Ruggiero 2021). The mobile divider is a tool of good beekeeping practices useful to detect a slightly higher number of beetles in shorter time during the inspection visit. In short, it is a divider that is placed between the last comb and the lateral side of the hive, creating a space where SHB may go into, hiding.

The results of a beekeeping scientist study to verify the possible correlation between the *Aethina tumida* presence using the Mobile divider method and the honey bees colonies' strength, queen presence, hive orientation and position (sun/shadow), will be presented. The field trial was carried out in Reggio Calabria province, from January 2022 to March 2022, involving 117 colonies and 10 beekeepers. The inspection visits were performed in a total of 3 times and 3 weeks apart each.

25/10/2022 – 26/10/2022 Budapest

13th meeting of the 5th mandate SCAR SWG AKIS.

I participated to the SCAR SWG AKIS meeting and provided the presentation of the B-THENET Thematic Network.

This meeting developed in particular the following topics:

- CAP AKIS strategies in the MS and EIP-AGRI
- Achieving greater impact of the Multi-Actor Approach (MAA) implementation in EU AKISs Thematic networks call 2021, starting soon: BROILER-NET; B-THENET, and Grazing for Ecology ● Training and Education: innovative approaches for advisory training & enabling environment.

16/05/2023 – 16/05/2023 Viterbo (VT)

Seminario "Impiego dei batterofagi in apicoltura"

Il Dr. Giovanni Formato è stato responsabile scientifico, ideatore e moderatore del Seminario sull'"Impiego dei batterofagi in apicoltura", organizzato in maniera congiunta tra l'IZS Lazio e Toscana, i Servizi Veterinari della ASL di Viterbo e la Associazione degli Apicoltori della Tuscia (APITUSCIA).

18/05/2023 – 18/05/2023 Webinar

"Second International Symposium on Biosecurity in Beekeeping"

Il Dr. Giovanni Formato ha ideato, e moderato il "Il International Symposium on Biosecurity in Beekeeping". L'evento è stato organizzato in maniera congiunta tra IZS Lazio e Toscana, APIMONDIA, FAO e WOAH. Inoltre, ha presentato il progetto Horizon: "The EU project B-THENET and its support to sustainable beekeeping". (10 minuti di presentazione).

● **PARTICIPATION TO NATIONAL MEETINGS IN ITALY**

31/12/2004 – CURRENT

National meetings in Italy.

From 2005 to current, Dr. Formato participated to several national meetings in Italy (see Annex 1)

17/02/2022 – 17/02/2022

Presentation of the activities of the Apiculture Laboratory of IZSLT

Presentation via Webinar at the Master of I level in Apiculture, organized by the University of Teramo (Italy):

(Title of the master: "APICOLTURA:GESTIONE SANITARIA E AMBIENTALE").

07/03/2022 – 07/03/2022

The first North African meeting for Honey bee diseases

Presentation: Overview of Beekeeping in southern Europe and Good Beekeeping Practices

10/03/2022 – 10/03/2022

La sostenibilità della filiera apistica tra gli aggiornamenti della normativa comunitaria, le misure di controllo e le azioni degli operatori di settore (N. 1 talk provided by G. Formato to National event in Italy).

Webinar organized by AIVI, AIVEMP, Scuola Etica di Alta Formazione e Perfezionamento Leonardo.

Giovanni Formato provided the talk: "Beekeeping and Sustainable Development Goals" ("Apicoltura e raggiungimento degli Obiettivi di Sviluppo Sostenibile").

11/03/2022 – 11/03/2022

Corso di Apicoltura ARAL 2022 - Beekeeping course of ARAL Beekeepers' Association 2002 (N. 1 talk provided by G. Formato to a Regional meeting of beekeepers in Central Italy).

N. 1 talk: "Honey bee pathologies: bacterial, viral and fungal diseases".

N. 1 presentazione in pubblico: "Malattie delle api: batteriche, virali e fungine".

31/03/2022 – 31/03/2022

Relatore all'Università di Pisa (Speaker at Pisa University) - Lezione (Lecture): "Ispezione e controllo dei prodotti dell'alveare" (Inspection and control of hive products).

Docenza alla Scuola di Specializzazione in Ispezione degli alimenti di Origine Animale (Specialization School Course on Inspection of Food or animal origin). Corso di "Ispezione dei prodotti trasformati" – Direttore Prof. Roberta Nuvoloni.

07/04/2022 – 07/04/2022

Relatore (Speaker of the presentation): "Prospettive future dell'apicoltura nella Regione Lazio" (Future perspectives for Latium Region Apiculture sector).

In occasione dell'incontro regionale "Tuteliamo le api, costruiamo il futuro, idee e proposte per il settore", finalizzato a presentare la nuova proposta di legge regionale in apicoltura, ho presentato il tema: "Futuro e prospettive dell'apicoltura in Regione Lazio".

L'evento è stato organizzato dalla senatrice Giulia Lupo, dalla Senatrice Paola Taverna e dal Consigliere Regionale e Presidente Tavolo Commissione Agricoltura e Ambiente Fabio Novelli, in Roma.

Meeting to present the new regional proposal of law in beekeeping of Latium Region.

25/05/2022 – 25/05/2022

Sicurezza alimentare e consumo di polline: pollini allergenici e pollini tossici. (Food safety and pollen consumption: allergenic and toxic pollens)

Ho presentato l'argomento relativo ai pollini tossici ed allergenici In occasione del Salone della dieta mediterranea "Cibo, cultura, benessere", Paestum 26-29 maggio 2022.

Il Salone della Dieta Mediterranea è un evento pensato per offrire una visione complessiva di tutti gli aspetti legati allo stile di vita Mediterraneo, patrimonio Unesco. Dalla produzione al consumo di cibo, dai benefici sulla salute e sull'ambiente, fino ai risvolti economici e sociali. L'evento conterrà al suo interno convegni scientifici internazionali, grazie alla presenza della Commissione Europea, del CNR, di istituzioni universitarie e di ricerca, ma anche un'ampia sezione espositiva con aziende agricole e alimentari, un'area food in cui saranno presentati e degustati piatti tipici, vini e tutti i prodotti simboli della Dieta Mediterranea.

24/05/2022 – 24/05/2022

Le buone pratiche apistiche e le misure di biosicurezza in apicoltura

In occasione del Corso Avanzato di Apicoltura, ho presentato le buone pratiche apistiche e le misure di biosicurezza in apicoltura, nell'ambito della Sessione 2 - "Salute e benessere dell'ape mellifera".

Il corso suddetto è stato organizzato da SVETAP in collaborazione con FNOVI.

ORGANISATIONAL SKILLS

Participation to research projects: 25 regional (Central Italy); 13 national (Italy); 8 international (6 EU + 1 Oman + 1 KSA).

PROJECTS

19/11/2020 – 30/12/2021

Regional Project: "Genetic and morphometric characterization of *Apis mellifera ligustica* in Latium region (Central Italy)".

The project focus on the identification, protection and selection of *Apis mellifera ligustica* in Latium region. It starts from a Collaboration Agreement between IZSLT and ARSIAL (Regional Agency of Latium Region for the development of the Agricultural Sector): Rep. N. 108 of 20/11/2020 (ARSIAL Director General Determinations 842 of 24/12/2018 and 64 of 07/02/2020), and foresee the involvement of Beekeepers' Associations and several protected areas in Latium region.

Total budget assigned: 4,0000 € (internal IZSLT code of the project: IGA GEN 8RLB18).

30/03/2022 – 30/12/2022

Regional Project: "Genetic and morphometric characterization of *Apis mellifera ligustica* in Latium region (Central Italy)".

The project is a prosecution of the previous started on the 1st January 2021. It is always focused on the identification, protection and selection of *Apis mellifera ligustica* in Latium region, and foresee the involvement of Beekeepers' Associations and several protected areas in Latium region. But is oriented to develop the artificial insemination (3 new locations are identified at the regional level) as a tool to fasten the results of the genetic selection.

Total budget assigned: 39,200 € (internal IZSLT code of the project: IGA GEN 8RLB22).

30/12/2020 – 30/12/2021

National project funded by IT MoH: "Application new generation sequencing (NGS) technologies to identify and characterize *Apis mellifera* emerging pathogens and symbionts in Italy, to raise awareness on honey bee transcriptome".

Title of the project: "Applicazione di tecnologie di sequenziamento di nuova generazione (NGS) per l'identificazione e la caratterizzazione di patogeni emergenti e simbionti di *Apis mellifera* nel territorio italiano e per incrementare le conoscenze sul trascrittoma dell'ape" (IZSVE 09/20). Coordination of Dr. Anna Granato from IZSVE.

30/12/2020 – 30/12/2022

National project funded by IT MoH: "Development of new diagnostic techniques to support on-field control activities for *Aethina tumida* (SHB) in Italy".

Original title: "Sviluppo di tecnologie diagnostiche innovative a supporto delle attività di controllo sul campo di *Aethina tumida* (SHB) in Italia" (Code: IZS ME 15/20 RC). Project coordinated by IZSME.

National project, funded by IT MoH: "Fagoterapia come Alternativa agli Antibiotici (ATA) nel controllo delle malattie infettive animali: sviluppo di procedure operative per specifiche patologie in modelli di allevamento in Italia". Codice IZSLT 1112. Budget: 96 000 € (17 200 € for the Honey bee Health lab).

"Fagoterapia come Alternativa agli Antibiotici (ATA) nel controllo delle malattie infettive animali: sviluppo di procedure operative per specifiche patologie in modelli di allevamento in Italia". Codice IZSLT 1112. Budget: 96 000 € (17 200 € for the Honey bee Health lab).

31/01/2017 – 31/03/2020

International project: "New indicators and on-farm practices to improve honeybee health in the Aethina tumida era in Europe". Project acronym: BPRACTICES.

The BPRACTICES project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n. 696231, ERA.Net SusAn - European Research Area on Sustainable Animal Production Systems.

The project aims to develop new management practices ([Good Beekeeping Practices – GBPs](#)) adopting new clinical methods, biomechanical and innovative biomolecular techniques respecting the natural behaviour of bees.

Link <https://www.izslt.it/bpractices/en/gantt-chart/>

30/09/2018 – 30/10/2022

International project: "Environmental monitoring of pesticide use through honeybees". Project acronym: INSIGNIA.

3rd Health Programme. Call: PP-1-2017 (Call for proposals for Pilot Projects in the public health sector). Topic: PP-1-1-2018. Type of action: PPPA-AG. Proposal number: SEP-210514049

INSIGNIA is an innovative project which involves the development of a protocol for a citizen science monitoring programme using beekeepers to collect biweekly pollen samples from honeybee colonies for analysis for pesticide residues and botanical origin. The results of the monitoring programme will then be combined with geospatial land use data including the CORINE database, in order to develop models and maps of plant biodiversity and pesticide exposure for honeybees, which will enable pesticide contamination to be linked to crop and other plants.

Link <https://www.insignia-bee.eu> 31/12/2021 –

29/06/2023

International project: "Provision of services related to strengthening SME's capacities for sustainable and economic apiculture in the Sultanate of Oman".

Active collaboration with the Greenhouse Gas Management Institute-Italy (GHGMI-I), the FAO, and the Omani Ministry of Agricultural Wealth, Fisheries and Water Resources for the "Provision of services related to strengthening SMI's capacities for sustainable and economic apiculture in the Sultanate of Oman". The activities I was involved were mainly: risk assessment, training and set-up of guidelines for the application of good beekeeping practices and biosecurity measures.

31/12/2021 – 30/06/2024

International project: "Preparatory action for monitoring of environmental pollution using honey bees". Project acronym: INSIGNIA EU.

Tender ENV/2021/op/0014 - Service Contract N° 09.200200/2021/864096/SER/ENV.D.2.

The objective of this project is to further develop the Insignia project protocol, by expanding it to encompass other environmental pollutants beyond pesticides, and implement the protocol on the ground in all 27 EU

countries. Data that will be generated will widely benefit the EU environment and health policies, as well as the common agricultural policy.

16/04/2022 – 06/07/2022

International project: "Development of beekeeping and honey production".

Consultant of FAO to provide support in the FAO-Saudi Technical Cooperation Programme (2019-2025)

"UTF/SAU/051/SAU - Strengthening MoEWA's Capacity to Implement the Sustainable Rural Agricultural Development Programme", 2nd component "Development of beekeeping and honey production".

I realized missions on-field, meeting with Ministry of Agriculture (MoEWA), officers, beekeepers, samplings, to understand issues related to bee health (too high mortality rate of honey bee colonies).

07/02/2022 – 30/08/2026

International project: "Best practices and innovations for a sustainable beekeeping".

Project acronym: B-THENET. Call: HORIZON-CL6-2021-GOVERNANCE-01. Project number: 101059812.

The B-THENET Thematic Network implements a multi actor (MA) approach to modernize the EU beekeeping sector, sharing knowledge that is ready to be put into practice, while fostering innovation and digitalization. Beekeepers will be advanced toward more economically viable and sustainable beekeeping through the knowledge sharing and training of useful and applicable best practices. Our MA approach engages the entire apiculture sector (beekeepers, advisors, researchers, policymakers, industry, consumers, etc.) to collect, categorize and help select best practices and applicable research findings not sufficiently known, using a bottom-up methodology that populates two accessible platforms ("Practices" and "R&I"). Only practices that meet beekeepers' needs, are effective and ready to use, will be selected, shared and customized in our public platform ("Exchange") and in national sub-networks (13 National Centres), so we can take into account the differences between territories, and adapt practices to specific regions, languages, equipment, bee genetics, diseases, and the operational scale of beekeeping. This approach will support the setting-up of tailored and validated best practices.

A sociological study will map out the channels most consulted by beekeepers to maximise the dissemination of practices in a specific, long-term platform ("Repository"), which is set up to share best practices in appealing, easy to understand, audio-visual materials, translated into 15 EU languages. The flow of practical information will be supported by the 13 National Centres, 3 International Centres and by the targeted events (312 national and 6 international), 1 EU manual on best practices, and 1 set of guidelines for advisors in beekeeping, thus contributing to a rapid cross-fertilization process and to a greater acceptance of the final outputs.

PUBLICATIONS

Peer reviewed publications

- All publications of Giovanni Formato are available at the following link:

<https://orcid.org/0000-0002-1202-5745> See

ORCID Link

Publications in collaboration with FAO

Publications in collaboration with FAO:

1. FAO, Apimondia, IZSLT. 2021. Visual manual on good beekeeping practices for small-scale beekeepers in Africa. TECA – Technologies and practices for small agricultural producers N. 2.
2. FAO, IZSLT, Apimondia and CAAS. 2021. Good beekeeping practices for sustainable apiculture. FAO Animal Production and Health Guidelines No. 25.
3. FAO and IZSLT. 2021. Responsible use of antimicrobials in beekeeping. FAO Animal Production and Health Guidelines No. 26.

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN** Other

language(s):

UNDERSTANDING

SPEAKING

WRITING

Listening	Reading	Spoken production	Spoken interaction

SPANISH

C1

C1

C1

C1

C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Word | Microsoft Excel | Outlook | Power Point | Google Drive

SIGNATURE

Signature



Giovanni Formato

DVM

NOTE: PERSONAL DATA MANAGEMENT

Note: personal data management

According to Italian legislation, I declare that:

<<Dichiaro che le informazioni riportate nel presente CV costituiscono autocertificazione ai sensi degli art. 46 e 47 del DPR 445/2000, consapevole della responsabilità penale prevista dall'art. 76 del citato decreto per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate>>

<<Autorizzo inoltre il trattamento dei miei dati personali ai sensi del decreto legislativo 30 giugno 2003 n. 196 ed all'art. 13 del Regolamento UE 2016/679 relativo alla protezione delle persone fisiche con riguardo al trattamento dei dati personali>>

Rome, 27.05.2024