

## COMBAR Final Conference

**“Combatting anthelmintic resistance in ruminants: options for the future”**

**7-9 March, Athens, Greece**



### Welcome to the final COMBAR meeting

Cattle, sheep and goats are parasitised by various helminth species. These pathogens are important production-limiting diseases of grazing ruminants in Europe and are mainly controlled through grazing management and the strategic use of anthelmintics. Today, anthelmintic resistance (AR) has become a global threat for effective parasite control and rentable livestock farming. **The COST Action COMBAR aimed at coordinating research at the European level to find solutions for the AR problem.** The action works in a structure of 3 working groups: (1) Diagnosis; (2) Socio-economic aspects and (3) Integrated control.

After 4 successful joint Working Group meetings in Warsaw and León, Ghent and an online meeting, COMBAR is already approaching its final conference. During this conference we want to look back on what we have achieved and summarize the current knowledge. But above all, we want to look forward and investigate what are the options for the future to achieve sustainable helminth control and how we can maintain the established network and critical mass. As before, we will do this alongside the themes of the 3 workings groups and hope to achieve a broad and general discussion with the actors involved: farming organisations, veterinarians, medicines industry, researchers and decision makers.

Given the ongoing COVID effects on travel and international meetings, we are hoping to have at least 50 participants in person and are also aiming to provide some (but not full) online participation options. COMBAR Final Conference aims to reinstall the physical connect between all who care for sustainable worm control and want to contribute to future activities in this field.

Hoping to meet you soon,

Dr. Johannes Charlier  
Chair

Dr. Smaro Sotiraki  
Vice-chair and Local organiser

PASTEUR INSTITUTE  
Athens, Greece

**COMBAR**  
combatting anthelmintic  
resistance in ruminants

7-9 MARCH  
2022  
COST Action CA16230

After 4.5 successful years COMBAR is coming to an end, and we are happy to organise our Final Conference.

By organising this Conference as a physical meeting, we aim to reinstall the physical connect between all who care for sustainable worm control and want to contribute to future activities in this field.

Looking forward meeting you all in Greece.

cost  
EUROPEAN COOPERATION  
IN SCIENCE & TECHNOLOGY

Welcome to our  
FINAL COMBAR CONFERENCE

Combatting anthelmintic resistance  
in ruminants: **options for the future**

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## Time

To help you organize your trip the meeting will start around 12:00pm on Monday the 7th of March and concluded the Wednesday the 9th of March at 11:30am.

## Registration

**Register [here](#) before 1<sup>st</sup> of March.** Please note this is a physical meeting, and we cannot guarantee livestreaming or recording of all the meeting at this stage. A registration fee of 50 euros / person, will be collected on site (**cash only**).

**In addition, you have to indicate if you will attend the evening dinners and last lunch in a separate form [here](#).** Please do this as soon as possible (where possible before 25/02/2022) and no later than 1<sup>st</sup> of March.

## Conference location and accommodation

**Conference Location:** Hellenic Pasteur Institute  
127 VASILISSIS SOFIAS AVENUE, 11521, ATHENS,  
GREECE



Pasteur Institute is located in the city center, in the district of Ampelokipoi only 3 metro stops from Syntagma Square

Link to [Google maps](#)

More info on how to get there by public transport you can find on the website:

<https://www.pasteur.gr/en/>

### Suggested hotels nearby:

- Airotel Alexandros and Airotel Stratos Vasilikos <https://www.airotel.gr/en/>
- Athinais Hotel <https://www.athinaishotel.gr/el/>
- President Hotel <https://president.gr/>

## Programme

Monday 07/Mar

12:00-13:00	Registration	
13:00-14:00	Lunch	
14:00-14:10	Welcome by local organiser	Smaro Sotiraki
14:10-14:40	COMBAR – from past to present	Johannes Charlier
14:40-15:00	Poster introduction (1 min per poster)	
15:00-15:30	<b>Keynote: Preparing future veterinarians to implement integrated gastrointestinal nematode control in small ruminant farms</b>	Felipe Torres-Acosta
15:30-16:00	Coffee break/Poster session	
16:00-17:30	Oral presentations (8 mins + 2mins discussion)	
	- Increasing importance of anthelmintic resistance in European livestock: creation and meta-analysis of an open database	Hannah Rose Vineer
	- Validation of the image-based FECPAKG2 system for counting sheep nematode eggs with a sensitivity of 5 EPG	Claire Reigate
	- Eprinomectin-resistant <i>Haemonchus contortus</i> strains in French dairy sheep farms: can we balance pastoral traditions and control of gastro-intestinal nematodes?	Sophie Jouffroy
	- Exposure to <i>Ostertagia ostertagi</i> in Austrian dairy cattle: Preliminary results	Pena Espinoza Miguel Angel
	- A novel benzimidazole derivative shows in vivo anthelmintic activity against <i>Haemonchus contortus</i> in gerbils and sheep	Martinez Valladares
	- High endoparasitic burden in cattle grazed on alpine pastures	Barbara Hinney
	- Geographical and temporal diversity of parasite prevalence revealed by computer modelling	Tong Wang

19:30: Social dinner offered by 

Tuesday 08/Mar

9:00-9:30	<b>Keynote: The drivers of change in animal farming management decisions: A systems- based approach</b>	Constantine Iliopoulos & Irini Theodorakopoulou
09:30-10:30	<b>WG 1: Diagnosing – Achievements and prospects</b>	Laura Rinaldi, Georg von Samson-Himmelstjerna
10:30-11:30	Oral presentations (8 min + 2 min discussion)	
	- Genome-wide analysis of the response to ivermectin treatment by a Swedish field population of <i>Haemonchus contortus</i>	Paulius Baltrusis
	- Occurrence of benzimidazole resistant <i>Haemonchus contortus</i> in Norwegian sheep, detected by droplet digital PCR	Maiken Gravdal
	- Detection, confirmation and characterisation of fenbendazole resistance in <i>Ostertagia ostertagi</i> in clinically affected grazing dairy calves in Great Britain	Natalie Jewell
	- Delineating the species-specific impact of four anthelmintic classes on gastrointestinal nematodes on 52 Welsh sheep farms	Paul Airs
11:30-12:00	Coffee break/Poster session	
12:30-13:00	<b>WG2: Socio-economic aspects – Achievements and prospects</b>	Edwin Claerebout
13:00-13:30	Oral presentations (8 min + 2 min discussion)	
	- The veterinarians' perspective regarding pasture parasites in Norwegian sheep and cattle, a questionnaire study (tbc)	Caroline Nedrelied
	- Sustainable gastrointestinal parasite control in dairy cattle: educational tools for veterinarians and farmers	Damien Achard
	- Sheep deworming strategies and AR in Sweden - insights from a national survey and wildlife nemabiome analysis	Peter Halvarsson
13:30-14:30	Lunch/Poster session + group picture	
14:30-15:00	<b>Keynote: The presence of veterinary drugs in agricultural soils and their interactions with the soil microbiota: toxicity, microbial degradation and bioaugmentation approaches to avert environmental pollution</b>	Dimitrios Karpouzias
15:00-16:00	<b>WG3: Integrated control – Achievements and prospects</b>	Eric Morgan, Herve Hoste
16:00-16:30	Oral presentations (8 min + 2 min discussion)	
	- Essential oil as natural anthelmintic for combating sheep gastrointestinal nematodes	Mohamed Helal
	- Plant supplementation combined with Targeted Selective Treatment in goat farmers from Botswana: a survival analysis approach	Javier Ventura-Cordero
	- In vitro and in vivo anthelmintic efficacy of essential oil of <i>Satureja montana</i> (L.) against gastrointestinal nematodes of sheep	Filip Štrbac
16:30-18:30	Management committee	MC members only

19:30: Social dinner offered by 

Wednesday 09/Mar

9:00-9:30	<b>Keynote: DISARM – a Thematic Network on Disseminating Innovative Solutions for Antibiotic Resistance Management: achievements and reflections</b>	Erwin Wauters
9:30-10:30	Overall discussion: "We can't stop now"	Moderator: Smaro Sotiraki; Panel members: WG leaders
10:30-11:00	Oral presentations (8 min + 2 min discussion)	
	- Investigation of eprinomectin resistance in gastrointestinal strongyles on a dairy goat farm in Northern Serbia	Stanislav Simin
	- Improving burden estimation of gastro-intestinal strongyles to target whole-group treatments and to preserve anthelmintic efficacy in small ruminants in Italy	Anna Maurizio
	- STAR-IDAZ International Research Consortium: Global coordination of animal disease research	Madeline Newman
11:00-11:30	Going beyond COMBAR	Johannes Charlier
12:00	Lunch and coffee	

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## Keynote speakers

### Juan Felipe de Jesús Torres Acosta



Juan obtained his DVM from the University of Yucatan, México and has been teaching veterinary medicine since 1989. He has worked with sheep and goat farmers under tropical conditions to investigate the anthelmintic resistance situation in different regions of México, with the collaboration of many research groups. He has contributed to define the conditions required to implement different gastrointestinal nematode control methods in small ruminant farms. Juan is currently investigating the sustainable integration of different GIN control methods.

### Constantine (Costas) Iliopoulos



Dr Iliopoulos serves as Director of, and Senior Researcher at, AGRERI ([www.agreri.gr](http://www.agreri.gr)), Adjunct Professor of Strategy at the MBA in Agribusiness Program, Agricultural University of Athens, and is co-founder of the Co-opAbility Institute, Greece ([www.coopability.org](http://www.coopability.org)). Currently, he is a Visiting Research Fellow at the Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale), Germany. His ongoing research program focuses on the transformation of systems and awareness-based collective action, with an emphasis in food and natural resource systems.

### Irini Theodorakopoulou



Dr. Irini Theodorakopoulou is a Senior Researcher at Agriculture Economics Research Institute (AGREI). She is an expert on rural innovation management and supply chain economics and organization. She applies systems thinking methods and tools in groups, organizations and rural communities in order to co-create with them economically, socially, environmentally sustainable solutions to their problems, and help them identify a common vision and mission. Her research interests are directed towards bringing together core competencies of policy development, research, extension, strategic appraisal and business planning, socio-economic and environmental impact analysis to create an integrated framework that can be used by rural stakeholders.

### Erwin Wauters



Dr Erwin Wauters has a Bachelor in Bioscience Engineering, a Master (2002) and PhD (2010) in Agricultural Economics, all from the Katholieke Universiteit Leuven. Since 2008, he is senior researcher at the Social Sciences Unit of the Flanders research institute for agriculture, fisheries and food. There, he coordinates national and international research projects on the economic, institutional and social aspects of farming and food systems. He focuses on understanding the economic, institutional and social drivers that shape our farming and food systems, and how to create a more enabling environment that fosters more sustainable farming and food systems. Currently he coordinates a Horizon 2020 Thematic Network on Disseminating Innovative Solutions for Antimicrobial Resistance Management (DISARM) and is in the core group of 2 Horizon 2020 projects on AMU and AMR.

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