OP-243 [Beekeeping Technology and Quality]
Veterinary practice, antimicrobial resistance, and food safety in beekeeping

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Honey bees, like all food-producing animals, require proper veterinary supervision to ensure health food safety and welfare. Modern beekeeping often lacks professional veterinary engagement, leading to gaps in disease control and antimicrobial stewardship. Increasing presence of paramedical approaches instead than veterinary-led health management raises concerns about regulatory compliance and oversight. Despite international efforts, honey bee health remains a neglected aspect of veterinary medicine. Food safety risks arise from improper use of antimicrobials, particularly in controlling American foulbrood (AFB), where antibiotics are misused to mask symptoms more than eliminate infections. This contributes to antimicrobial resistance (AMR) and challenges global honey quality control measures. Absence of systematic honey surveillance for AFB spores highlights a critical regulatory gap because they enter in human food chains. This communication is based on a synthesis of literature, regulatory reports, and observations from international beekeeping and veterinary meetings. It identifies key weaknesses in veterinary services, knowledge dissemination, and disease monitoring in apicultural sector. Veterinary services for pollinators and food-producing animals often fail to integrate disease monitoring, toxicological assessment, and AMR surveillance, primarily due to financial and logistical limits. Lack of transparency and education cause honey bee losses, food fraud, and pest and pathogens spread. Use of antibiotics as a prophylactic or therapeutic measure maintains endemic bacterial infections, transforming infected apiaries into disease reservoirs. American foulbrood illustrates how fragile and uncoordinated current veterinary and regulatory framework is in addressing honey bee health globally. Absence of harmonized control measures across countries highlights urgent need for stronger surveillance, regulatory enforcement, and global coordination. Effective AMR stewardship in beekeeping should follow principles of Responsibility, Reduction, Refinement, Replacement, and Review to mitigate risks.

Beekeepers rely on metaphylactic antibiotic treatments for spore-forming bacteria create persistent sources of infection, threatening both their own colonies and those in surrounding areas. Sustainable disease management requires respecting biological and evolutionary mechanisms more than relying on antibiotic interventions. Strengthening veterinary involvement, regulatory management, and beekeeper education is essential for protecting bee health, ensuring honey quality, and preventing AMR in apiculture products.

Veterinary practice, antimicrobial resistance and food safety in beekeeping

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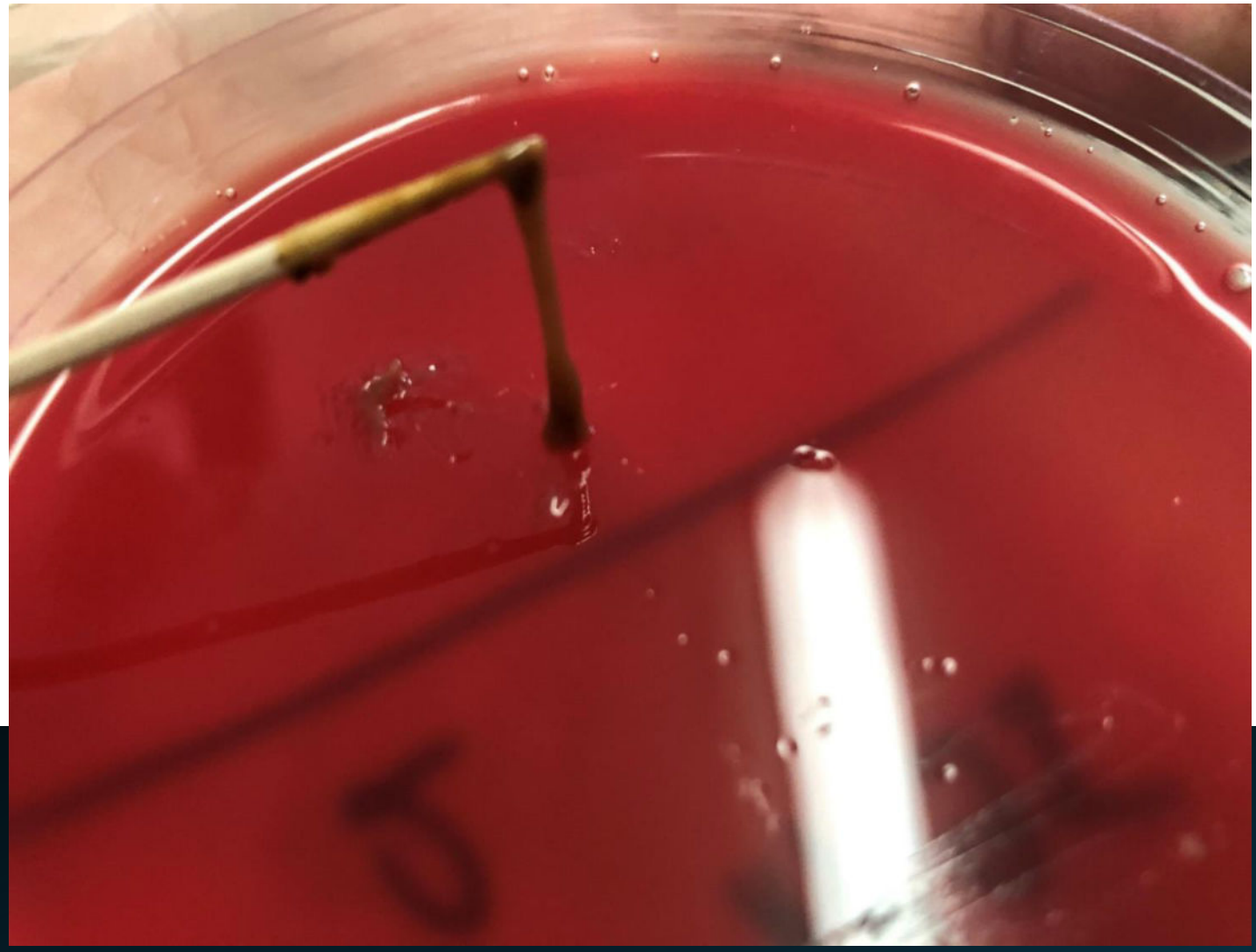
World of rising antibiotic resistance

Paenibacillus larvae



METAPHYLAXIS

Journal of Invertebrate Pathology
Volume 75, Issue 1, January 2000, Pages 95-96

Note

Verification of Oxytetracycline-Resistant American Foulbrood Pathogen *Paenibacillus larvae* in the United States

Tomoko Miyagi, Christine Y.S. Peng 1, Ronald Y. Chuang, Eric C. Mussen, Marla S. Spivak, Roy H. Doi

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https://doi.org/10.1006/jipa.1999.4888

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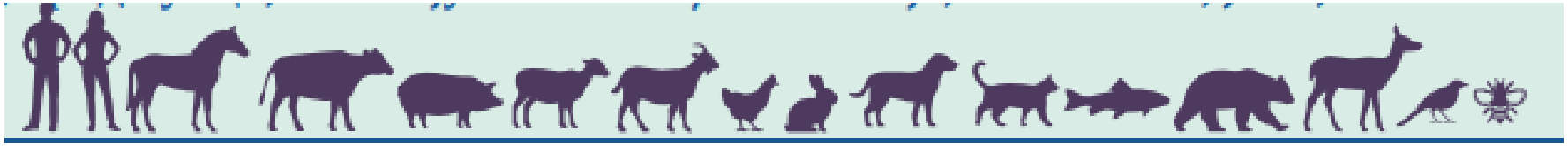
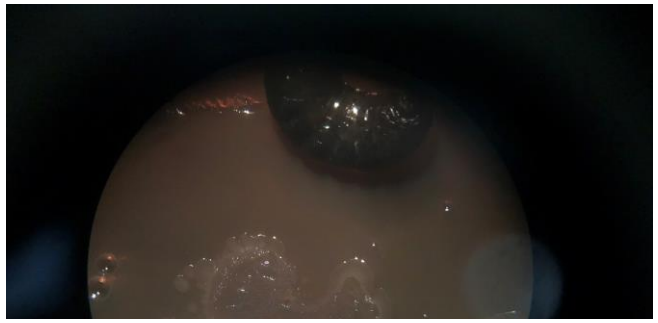


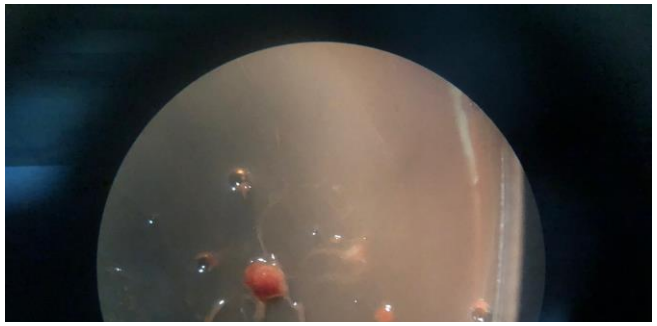
FACTS: antimicrobial resistance (AMR) and challenges **global honey quality control measures**

Despite international efforts, honeybee health remains a **neglected** aspect of veterinary medicine

Veterinary services for pollinators and food-producing animals often **fail to integrate disease monitoring, toxicological assessment and AMR surveillance,** primarily due to **financial and logistical limits**.

Absence of **harmonized control measures** across countries highlights urgent need for stronger surveillance, regulatory enforcement, and global coordination.





World Organisation for Animal Health

The State of the World's Animal Health | Animal Diseases | SEARCH

WHO WE ARE | WHAT WE DO | WHAT WE OFFER | MEDIA | WAHIS

lected filters :

Year: 2023

Region: Europe

ease: Paenibacillus
e (Inf. of honey bees
(American foulbrood)

mal_type: Terrestrial

Newsletter

The monthly newsletter that relays news from the World Organisation for Animal Health (WOAH), as well as from its network and regions. News includes its Members' self-declarations, articles, upcoming events, publications, communication tools and more. Subscribe to the monthly newsletter and stay informed on the organisation's latest activities at both global and regional levels.

5R-to mitigate risks.

Effective AMR **stewardship** in beekeeping should follow principles:

- Responsibility
- Reduction
- Refinement
- Replacement
- Review

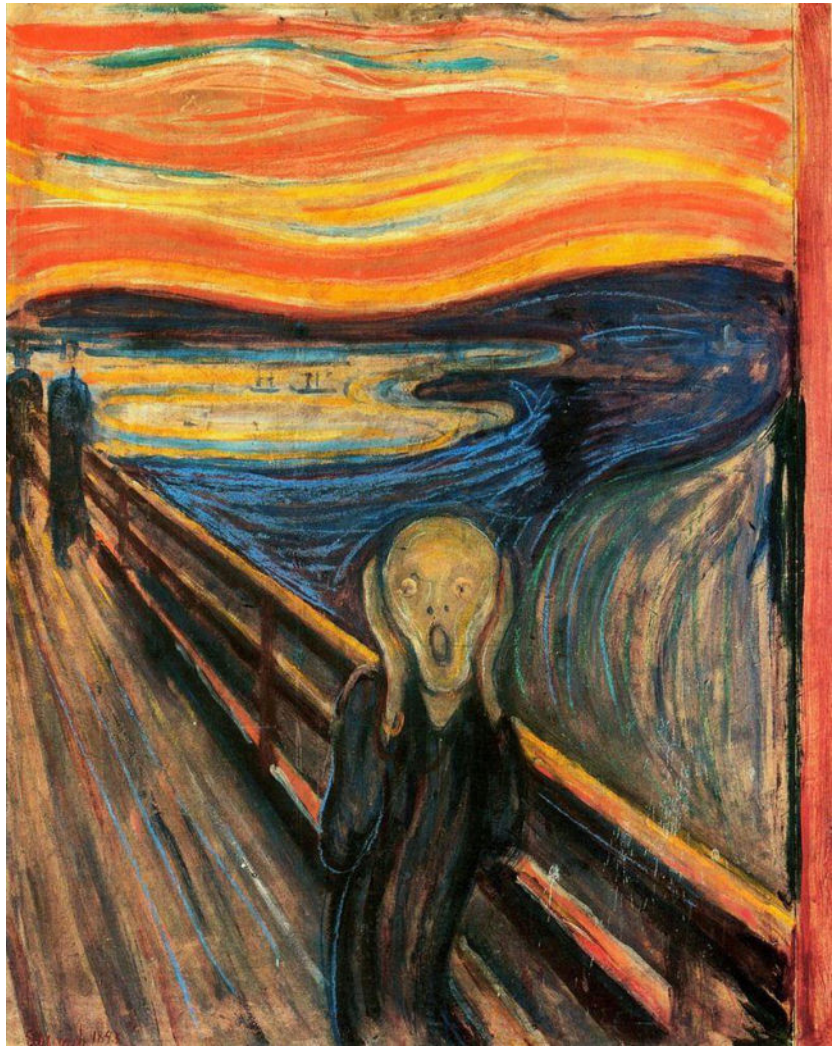
WIN? –WIN!-WIN!

Beekeepers rely on metaphylactic antibiotic treatments for spore-forming bacteria create persistent sources of infection, threatening own colonies and those in surrounding areas.

Sustainable disease management requires respecting biological and evolutionary mechanisms more than relying on antibiotic interventions.

Strengthening veterinary involvement, regulatory management, and beekeeper education is essential for protecting bee health, ensuring honey quality, and **preventing AMR** in apiculture products.

Paenibacillus larvae (AMR gen in **spores**) as dormant platform to carry on **possible propagations globaly**



Drug-resistant bacteria from honey jar, do you want to eat them?

ONE HEALTH neglected

More attention to problem definition and identification

Challenges:

Public health DIAGNOSTIC need: ??? Yes/No

RESEARCH MORE: !!!! YES

PROPOSAL ready „To whom it can be concerned“

SEPTEMBER 25TH, THURSDAY

COMMISSION	SYMPOSIUM TITLE	HALL	TIME
APITHERAPY	Effects of Apitherapy Products on Cancer, Diabetes, and Wounds	A1	09:00 - 10:30
BEEKEEPING FOR RURAL DEVELOPMENT	Building Rural Economies through Diverse Beekeeping Approaches	A2	09:00 - 10:30
WORKSHOP	VETERINARY FOCUS: Bee Health, Welfare & Public Health 2025	AUDITORIUM 15	09:00 - 10:30
ROUND TABLE	AFRICA-1	A3	09:00 - 10:30
WORKSHOP	WG12 on Data Standardisation	AUDITORIUM 11	09:00 - 10:30
MAIN SYMPOSIUM	Bridging Research and Practice	A1	11:00 - 13:00
BEE HEALTH	Focus On Foulbrood	A2	11:00 - 13:00
BEEKEEPING TECHNOLOGY & QUALITY	Bee Products Quality, Safety and Standardization	AUDITORIUM 15	11:00 - 13:00
ROUND TABLE	AFRICA-2	A3	11:00 - 13:00
ROUND TABLE	Breeding for Varroa Resistance	AUDITORIUM 11	11:00 - 13:00
BEE HEALTH	Bridging Research and Practice	A1	14:30 - 16:30
POLLINATION & BEE FLORA	Pollinator-friendly Rural Landscapes and Pollinator-friendly cities	A2	14:30 - 16:30
APITHERAPY	Biological Effects of Bee Products	AUDITORIUM 15	14:30 - 16:30
ROUND TABLE	Analytical Tools to Fight Honey Fraud	A3	14:30 - 16:30

Good Veterinary Practice in Apiculture,
AWG13 GVPA

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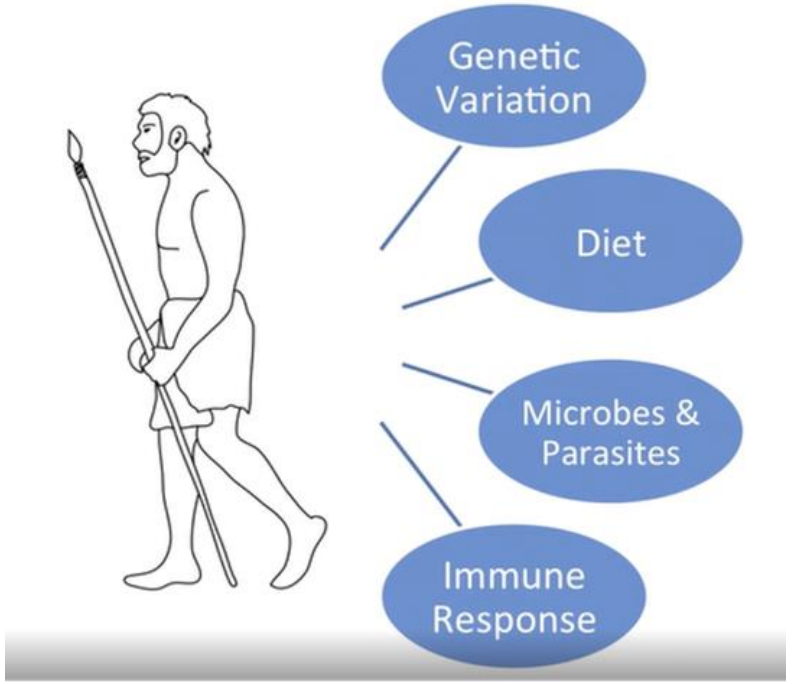
Hyper relevant insights and connections

Q and A



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