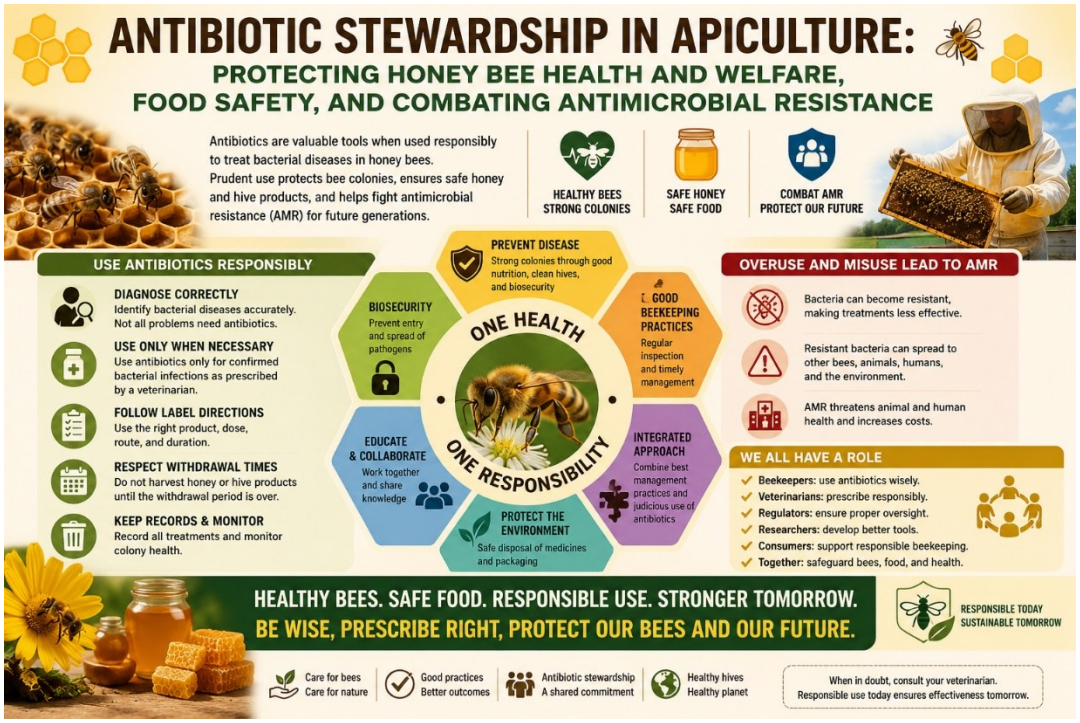
INTERNATIONAL FEDERATION OF BEEKEEPERS' ASSOCIATIONS

POLICY BRIEF

ANTIBIOTIC STEWARDSHIP IN APICULTURE: PROTECTING HONEY BEE HEALTH AND WELFARE, FOOD SAFETY, AND COMBATING ANTIMICROBIAL RESISTANCE

1. Executive Summary

The use of antibiotics in beekeeping represents a critical issue at the intersection of animal health and welfare, food safety, and environmental sustainability. Inconsistent regulations, limited veterinary surveillance, and insufficient alternative solutions contribute to risks such as antimicrobial resistance (AMR) and contamination of bee products. This policy brief outlines key challenges and proposes actionable recommendations to support sustainable apiculture within the **One Health framework.**



Target Audience

APIMONDIA, WOAH, FAO, WHO and Policy makers, veterinary authorities, food safety agencies, researchers, and international organizations involved in agriculture, public health, and environmental protection.

Key Messages

- Irrational use of antibiotics in beekeeping threatens food safety and accelerates antimicrobial resistance and it is an existing bad practice.

- Lack of harmonised international guidelines weakens global AMR control efforts in beekeeping.

- Veterinary supervision and surveillance systems are essential for responsible antibiotic use but do not exist in the majority of the world.

- Development of sustainable alternatives is crucial for the future of beekeeping, and someone needs to take the lead.

2. Background / Context

Honey bees play a vital role in global food production and biodiversity through pollination. However, bacterial diseases such as American foulbrood and European foulbrood continue to affect colony health and productivity. In some regions, antibiotics have been used to control these diseases. Also, nosemosis and fungal disease are still treated or prevented with antibiotics!

Improper or excessive use may result in:

i. Residues in honey and other bee products.
ii. Disruption of the natural microbiota of honeybees.
iii. Emergence and spread of antimicrobial resistance. Antimicrobial resistance is recognized as a major global threat affecting human, animal, and environmental health, requiring coordinated international action.

2. Problem Statement

Regulation of antibiotic use in apiculture varies significantly across countries. Some countries prohibit their use entirely; others allow controlled therapeutic use. This inconsistency leads to:

- Uneven food safety standards;
- Weak monitoring of antimicrobial resistance;
- Increased risks to bee health and ecosystem stability.

Additional challenges include:

- Limited involvement of veterinary professionals in beekeeping.
- Few approved veterinary medicinal products for bees.

- Insufficient development of alternative disease control strategies.

3. Policy Recommendations

3.1. Harmonize Regulatory Frameworks

Develop internationally aligned regulations that prohibit prophylactic antibiotic use and allow treatment only in exceptional cases based on confirmed diagnosis when this is based on scientific data from the last decade.

3.2. Strengthen Veterinary Oversight

Ensure that all antimicrobial use in beekeeping is conducted under veterinary supervision and follows scientifically validated protocols.

3.3. Establish Monitoring and Surveillance Systems

Introduce coordinated systems at national and international levels to monitor:
- Antibiotic residues in bee products.
- Antimicrobial gene resistance in bee pathogens.

3.4. Invest in Research and Innovation

Support development of sustainable alternatives, including:
- Biological and ecological disease control methods.
- Breeding of disease-resistant bee strains.
- Probiotic and microbiome-based approaches.
- Improved diagnostic tools.

3.5. Enhance Education and Awareness,

Develop training programs for beekeepers, veterinarians, and regulatory authorities focusing on:
- Biosecurity practices.
- Disease prevention.
- Responsible use of antimicrobials.

4. Expected Outcomes

Implementation of these recommendations will:

- Reduce the emergence and spread of antimicrobial resistance.
- Improve the safety and quality of bee products.
- Strengthen veterinary involvement in apiculture.
- Support sustainable and resilient beekeeping systems.

5. Implementation Pathway

Lead institution**:** WOAH Terrestrial Animal Health Standards Commission.

Key Leadership & Contact Information (2026):

- President of the Council: Dr. Susana Pombo (Portugal)
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6. Supporting actors:

Apimondia AWG GVPA,
WHO
FAO
National veterinary services

Short-term action (0-6 months): Expert consultation and draft framework.
Medium-term action (1-2 years): Adoption.

Resource considerations: Leverage existing bee disease labs; minimal new funding via partnerships.

7. Expected Impact/ Conclusion

Antibiotic stewardship in apiculture is essential for protecting pollinators, ensuring food safety, and addressing antimicrobial resistance. Coordinated policy action within the One Health framework will contribute to healthier ecosystems, sustainable agriculture, and improved public health outcomes. If not taken seriously we will overlook plenty of Penicillin, Streptomycin, Neomycin, Ampicillin, Fumagillin, Furazolidone, Rifampicin, Pefloxacin, Oxacillin, Clotrimazole, Oxytetracycline, Lincomycin, Sulfamethoxazole, Tylosin, Azithromycin, Novobiocin, Florfenicol, Erythromycin, Tilmicosin, Sulfonamides, Nitrofurans, Chloramphenicol, Nitroimidazoles residua in hive, food, environment. AMR is just a cherry on the cake. It all comes with price.

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