

Beekeeping for the Future 2017

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Antibiotic Use In Beekeeping

- Antimicrobial Resistance: a Global Concern
- Changes in Antimicrobial Use For Food Animals in Canada
- Antimicrobial Use Culture Shift - the Impact on Beekeepers



Antibiotic Use In Beekeeping :Part 1

Clarification:

Antimicrobials: the wide category of products used to kill or suppress the growth of bacteria

Antibiotics: a specific category within the larger class of antimicrobials, *the terms are often used interchangeably but in reality all antibiotics are antimicrobials but not all antimicrobials are antibiotics*

AMR-Antimicrobial Resistance: a naturally occurring process where by some bacteria, when exposed to antimicrobials, become resistant to the killing effect of those antimicrobials



Antimicrobial Resistance: A Global Concern

Antimicrobial Resistance is real and poses significant identified threat to:

- ▶ Animal health
- ▶ Animal welfare
- ▶ Human and public health
- ▶ Environmental health



Antimicrobial Resistance-A Global Concern

What Others are Saying:

- ▶ Off label use helps bolster the bottom line but in the process, bacteria are developing antimicrobial resistance
- ▶ WHO- “urgent action is needed” to limit antibiotic use in agriculture
- ▶ Agriculture plays a major role in promoting antibiotic resistance



Antimicrobial Resistance-A Global Concern

Outcomes of Resistance:

- ▶ Treatment failure in target animal.
- ▶ Treatment failure in non-target animals, including humans.
- ▶ Development of Super Bugs (bacteria resistant to multiple antimicrobials)
- ▶ Human fatalities and increased cost of health care
- ▶ Threatening the access to antimicrobials in animal production and health



Antimicrobial Resistance-A Global Concern

Human Deaths Related to AMR-2016 (British Study)

- ▶ USA 50,000/year
- ▶ Globally 700,000/year
- ▶ Estimated by year 2050 if no change in policies
10,000,000/deaths per year



Antimicrobial Resistance-A Global Concern

World Health Organization

- ▶ reduce antimicrobial use in humans and animals
- ▶ improve surveillance
- ▶ prevent and control the spread of drug-resistant infections
- ▶ stimulate research and innovation



Antimicrobial Resistance-A Global Concern

Global concern regarding antimicrobial resistance:

- Identified need to maintain effectiveness of antimicrobials **FOR HUMANS AND ANIMALS**
- Need for continued access to antimicrobials for livestock and other animals
- Desire to maintain market access;
- Objective to obtain market advantage;
- Public integrity of the industry;
- The right thing to do for both animal and human health



Antimicrobial Resistance-A Global Concern

Use of antimicrobials (USA Study)

- ▶ 50% of prescriptions for antimicrobials in human hospitals were unnecessary
- ▶ 45% of prescriptions for human use were for a condition that antimicrobials could not help
- ▶ 80% of all antimicrobial use was in farm animals



Antimicrobial Resistance-A Global Concern

Generally, the use of antimicrobials in food producing animals includes:

- Production Use (growth promotion)
- Disease Prevention
- Disease Control
- Disease Treatment



Global Pressure for Change

WHO, OIE and FAO: A Tripartite Partnership

- ▶ International organizations that implement United Nations initiatives and treaties globally
- ▶ OIE (World Organization for Animal Health) a reference organization for the development of standards in regards to animal health and zoonotic diseases
- ▶ 2015: commitment to support WHO Action Plan on AMR
- ▶ 2016: mandate to compile AMR activities into strategy (Canada is a member of OIE)



Global Pressure for Change

WHO, OIE and FAO: A Tripartite Partnership

- ▶ OIE to align with WHO on development of a **One Health Action Plan**
- ▶ Sept 2016-United Nations declaration signed to take action on AMR
- ▶ Canada is a signatory to this declaration
- ▶ National commitment to coordinate the various activities on AMR and develop a national action plan, with established deadlines



Antibiotic Use In Beekeeping

Part 2

**Changes in Antimicrobial Use For Food
Animals in Canada:**

Dr. Simon Otto

