Exploring IP&C Challenges in the Community- Bee Management

The development of Antimicrobial Resistant Organisms in our Environments

MacDonald, Jason
Environmental Public Health Advisor
Public Health Standards and Regulations Health
Alberta Health
Edmonton, Alberta
(Presented by Medhat Nasr- Alberta Provincial Apiculturist)
A Note on Public Health Inspectors

- Nationally certified
- 300 in Alberta
- 3000 nationally
- Inspections:
  - Food Facilities
  - Swimming Pools
  - Daycares
  - Tattoo / Piercing / Salons
  - Drinking Water
  - Public Recreation
Antimicrobial Resistant Organisms

Antibiotics
Antifungals
Antivirals
Disinfectants
Antiseptics
How Antibiotic Resistance Happens

1. Lots of germs. A few are drug resistant.

2. Antibiotics kill bacteria causing the illness, as well as good bacteria protecting the body from infection.

3. The drug-resistant bacteria are now allowed to grow and take over.

4. Some bacteria give their drug-resistance to other bacteria, causing more problems.

Source: CDC Antibiotic Resistance Threats in the United States, 2013
CAUSES OF ANTIBIOTIC RESISTANCE

Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.

- Over-prescribing of antibiotics
- Patients not finishing their treatment
- Over-use of antibiotics in livestock and fish farming
- Poor infection control in hospitals and clinics
- Lack of hygiene and poor sanitation
- Lack of new antibiotics being developed

www.who.int/drugresistance

#AntibioticResistance
Disinfectant used in fitness centers

ACTIVE INGREDIENTS:
- Diisobutylphenoxyethoxyethyl dimethyl benzyl ammonium chloride: 0.28%
- Isopropanol: 17.20%

INERT INGREDIENTS: 82.52%

TOTAL: 100.00%

KEEP OUT OF REACH OF CHILDREN

CAUTION: Corrosive
AVOID CONTACT WITH EYES

PRECAUTIONARY STATEMENTS: Harmful to Humans and Domestic Animals. AVOID CONTAMINATION OF FOOD. MAY CAUSE EYE IRRITATION. AVOID DIRECT CONTACT WITH EYES. IN CASE OF DIRECT EYE CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

DIN 02161656
Detection of Benzalkonium Chloride resistance in Community Environmental Isolates of Staphylococci
Gui-Xin He et al. Journal of Medical Microbiology, May 2014

• Swabs were taken from fitness centers frequently disinfected with QAC.
• 9.5% showed QAC resistance.
• Surfaces without QAC use showed no resistance.
• All QAC-resistant strains were also resistant to erythromycin, penicillin and ampicillin.
How to Spread It?
This Dog's Nose Saves Bees | National Geographic
Use of Oxy-Tetracycline for AFB & EFB
## AFB Disease Status in Alberta and Canada

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* % infection in NB & PEI = 17.7 & 25
** rAFRB reported in B.C., AB, MB, ON (moderate)
Antimicrobial Use and Resistance: What is going Across Canada?
Summary

• Antimicrobials are more than just antibiotics.
• Resistant organisms are created in our built and natural management system and environments too.
• Societal & Professional culture shifts are required.
• As Stakeholders must work together to come up with a workable plan to keep health bees and meet the new policy.
Thank You