



**ONTARIO BEEKEEPERS'  
ASSOCIATION**

Since 1881

# Progress Report

## Access to Antibiotic Working Group



# AFB



# AFB Diagnosis

## ☒ Ropiness test

Use twig or matchstick to  
'stir' larvae  
2 cm 'rope' will be attached to  
stick

## ☒ Microscopic examination

Spores resemble slender rods in  
chains



# European Foulbrood (EFB)

- # A bacteria affecting brood
- # Not as widespread as AFB
- # Larvae are infected by nurse bees



# EFB



- ✦ Twisted larvae
- ✦ Slight ropiness
- ✦ Monitoring - visual exam

# OXYTET-25-S or OXYSOL-62.5

## Category III antibiotic Powdered Sugar Mix

Preventative treatment: Spring and Fall

- ~ Oxytetracycline
- ~ Mix 4 g of OXYTET/OXYSOL with 35 g icing sugar
- ~ Apply 32 g of mixture per colony
- ~ Repeat 3 times at 4 to 5 day intervals
- ~ Stop treating 4 weeks before main honey flow

Used for: American foulbrood, European foulbrood



# Tylan 100 Soluble Category II antibiotic

Preventative treatment: Fall ONLY

- ~ Tylosin
- ~ Mix 200 mg tylosin in a 20 g confectioners/powdered sugar
- ~ Apply 3 single doses, each one week apart for a complete treatment

Used for: American foulbrood, European foulbrood

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# Lincomycin - Lincomix® 100

## Catagory II Antibiotic

**Medicinal Ingredient:** lincomycin (as lincomycin hydrochloride) 400 mg/g.  
**Indications:** For the treatment of necrotic enteritis in broiler chickens, for the treatment of swine dysentery (bloody scours) and for the control of American foulbrood in honey bees.  
**Dosage and Administration:**  
*To reduce the development of antimicrobial resistance and maintain effectiveness, use this antibiotic prudently.*  
**Chickens:** 80 g per 2000 liters or 1 level scoop (4.7 g) per 120 liters of drinking water.  
**Swine:** 80 g per 960 liters or 1 level scoop (4.7 g) per 55 liters of drinking water.  
**Honey Bees:** Mix 250-500 mg Lincomix with 20 g confectioner's powdered sugar and dust over the top bars of the brood chamber.  
**Warnings:**  
**Chickens:** No withdrawal period is required when chickens are treated at the recommended dose (16 mg/liter of drinking water).  
**Swine:** No withdrawal period is required when swine are treated at the recommended dose (33 mg per liter of drinking water).  
**Honey Bees:** The drug should be fed early in the spring or late in the fall and consumed by the bees before the main honey flow begins, to avoid contamination of production honey. Complete treatments at least 14 weeks prior to main honey flow. When handling the product, avoid inhalation, oral exposure and direct contact with skin or eyes.  
**KEEP OUT OF REACH OF CHILDREN.**  
**Storage:** Store between 15 and 25°C.  
**See insert for complete indications and directions for use, as well as additional information in bees.**

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Zoetis Canada Inc.  
 Kirkland QC H9H 4M7



50767340023085  
 1601-05-3

DIN 00813761

**Lincomix®/MD**

lincomycin hydrochloride soluble powder mfr. std.  
 poudre soluble de chlorhydrate de lincomycine, fa b.

Veterinary Use Only  
 Usage vétérinaire seulement

antibiotic / antibiotique

for chicken, swine and honey bees  
 pour poulets, porcs et abeilles

Net 80 g



zoetis

**Ingrédient médicamenteux:** 400 mg de lincomycine (sous forme de chlorhydrate de lincomycine) par g.  
**Indications:** Pour le traitement de l'entérite nécrotique chez les poulets à griller, pour le traitement de la dysenterie porcine (diarrhée de sang) et pour contrôler la loque américaine chez les abeilles.

**Posologie et mode d'administration:**  
*Pour réduire le développement de résistance aux antimicrobiens et maintenir l'efficacité de cet antibiotique, l'utiliser avec prudence.*

**Poulets:** 80 g par 2000 litres ou 1 mesure rase (4,7 g) par 120 litres d'eau de boisson.

**Porcs:** 80 g par 960 litres ou 1 mesure rase (4,7 g) par 55 litres d'eau de boisson.

**Abeilles:** Mélanger 250-500 mg de Lincomix avec 20 g de sucre à glacer et saupoudrer sur les barres supérieures des cadres du couvain.

**Mises en garde:**

**Poulets:** Un délai d'attente n'est pas requis quand les poulets sont traités avec ce médicament à la dose recommandée (16 mg par litre d'eau de boisson).

**Porcs:** Un délai d'attente n'est pas requis quand les porcs sont traités avec ce médicament à la dose recommandée (33 mg par litre d'eau de boisson).

**Abeilles:** Le médicament devrait être administré tôt au printemps ou tard à la fin de l'automne et consommé par les abeilles avant le début de la miellée principale, pour éviter la contamination du miel de production. Terminer le traitement au moins 4 semaines avant le début de la miellée principale. Lors de la manipulation du produit, éviter l'inhalation, l'exposition orale et le contact direct avec la peau ou les yeux.

**GARDER HORS DE LA PORTÉE DES ENFANTS.**

**Entreposage:** Entreposer entre 15 et 25 °C.

**Voit le dépliant pour les indications et le mode d'emploi complets, ainsi que des renseignements additionnels pour les abeilles.**

Zoetis est une marque de commerce et Lincomix est une marque déposée de Zoetis ou de ses concédants de licence, utilisées sous licence par Zoetis Canada Inc.

LOT

EXP.



# American Foulbrood

## Confirmed Cases:

- ~ Confine bees to hive
- ~ Burn all infected equipment
- ~ Kill the bees
- ~ Treat remaining colonies
- ~ Requeen with hygienic stock
- ~ Irradiate infected equipment using 1.2 M rads



# European Foulbrood

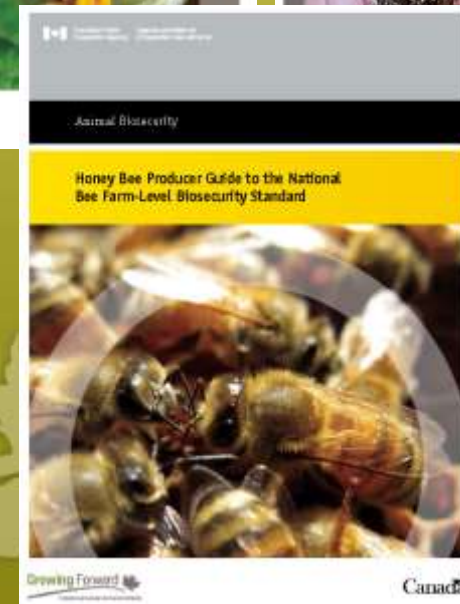
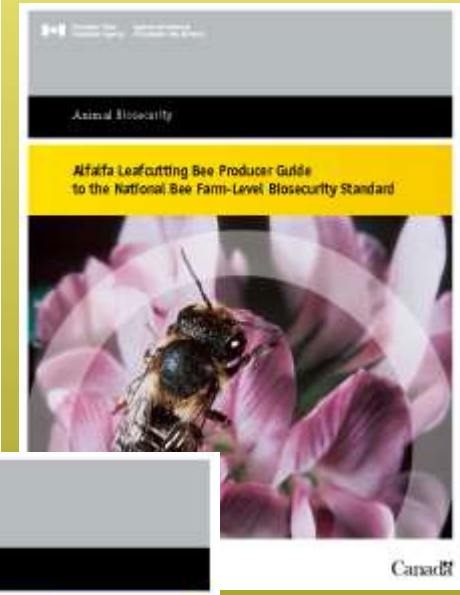
## Confirmed Cases:

- ~ Burn or irradiate all infected *combs*
- ~ Requeen with hygienic stock
  - ~ Check list of queen breeders at:  
<http://www.ontariobee.com/ORHBS>
  - ~ Breeder Pamphlet



# National Biosecurity Standards

- National biosecurity standards have been developed for several commodities – poultry, swine, beef, dairy, sheep, goats, mink, bees, potatoes and grain/oilseeds



# Basic Concept

- First line of defense - **“keep disease/pests out”**
- If an issue arises - **“keep it in”** to prevent its spread
- **“Shut it down”** as quickly as possible to reduce its impact



# Know Health Status of New Bees

- Purchase bees from OMAFRA inspected and permitted, reliable sources with known health status
- Inspect new bees for pests – treat and isolate if required
- Place in new or disinfected hives, use clean and disinfected equipment




# New Colonies


- Monitor for a least one year
- If no disease detected after three years, colonies and equipment may be integrated into the rest of the operation



# Clothing and Tools

- Scorch Hive tools
  - If visiting another beekeeper use their hive tools and equipment. Leave your equipment at home.
  - If using gloves use latex/disposable gloves
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# Background on Legislation

- World Health Organization decision in 2000 to reduce the use of antibiotics used in livestock
  - Risk of building antimicrobial resistance (AMR) to diseases that affect humans
  - End product label claims that promote the use of antibiotics as yield enhancers
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# AMR Risk is Real!

- Over used cause resistance to common food-borne illnesses such as *Salmonella*.
- Most at risk
  - Infants
  - Elderly
  - Compromise immune systems
- <https://www.canada.ca/en/public-health/services/antibiotic-antimicrobial-resistance.html>



# Antibiotic (antimicrobial) resistance

Help prevent antibiotic resistance by learning about its causes, impact and which bacteria and illnesses are antibiotic-resistant. Also discover helpful resources.



## Services and information

### [About antibiotic resistance](#)

Learn how antibiotic resistance develops, how resistant bacteria are spread and how to reduce the risk of antibiotic resistance.

### [Antibiotic-resistant bacteria and illnesses](#)

Discover which bacteria and illnesses are antibiotic-resistant and why they can be difficult to treat.

## Contributors

- [Health Canada](#)
- [Public Health Agency of Canada](#)

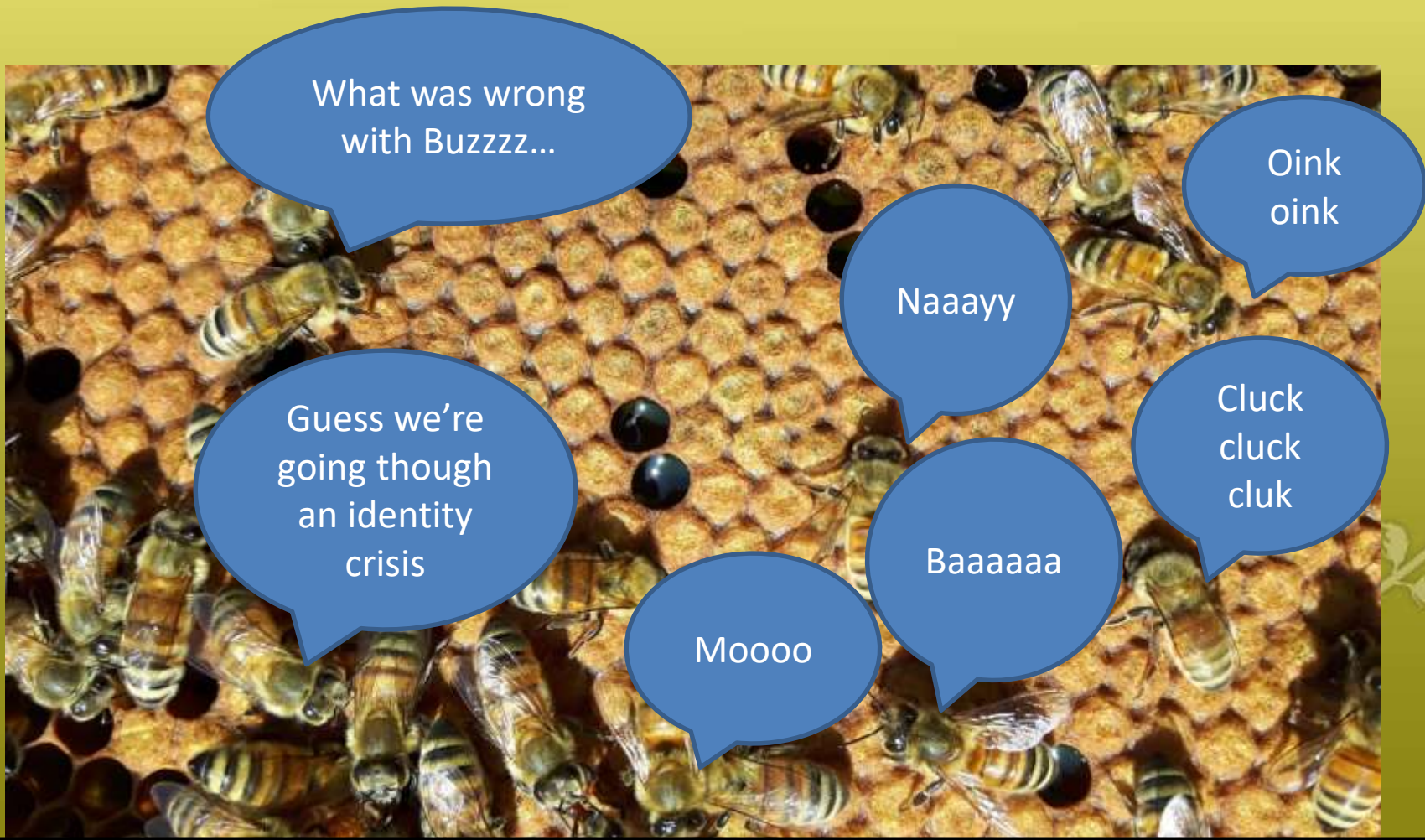
# Definition of Livestock

Animals kept or raised for use or pleasure; *especially* : farm animals kept for use and profit

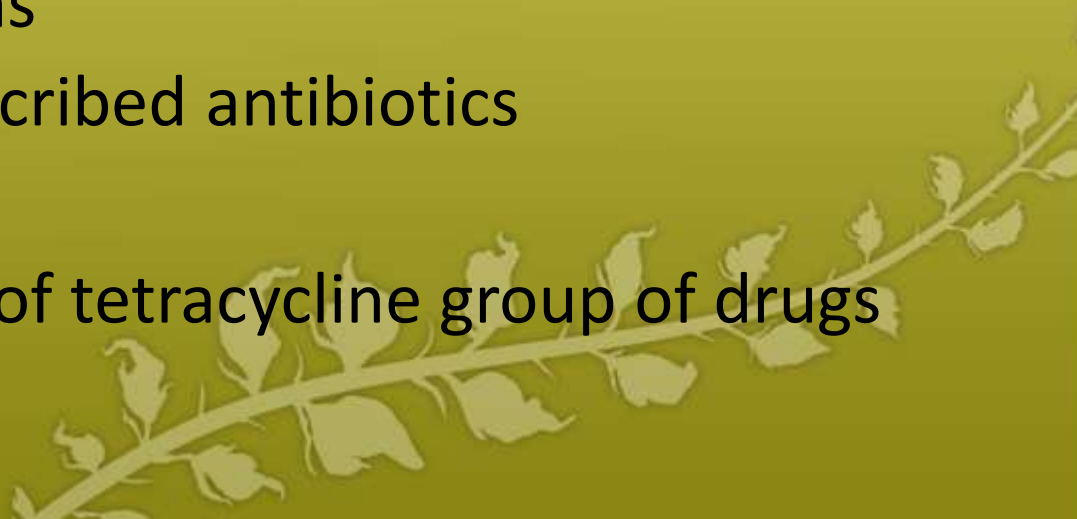


# How does Beekeeping fit in?


- Bees are kept as a farming practice and are therefore livestock



# How does Beekeeping fit in?

- Legislation includes antibiotics important to human health
  - Tetracycline drugs important for human use
    - Acne
    - Common infections
    - Low on list of prescribed antibiotics
  - Oxytetracycline part of tetracycline group of drugs
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# Myths

- Replace OMAFRA bee inspectors
  - Vets responsible for other treatments
  - Vets are going to be “even richer”
  - Legislation’s main goal is to reduce all antibiotic use
  - Fumagillan is included in this legislation
  - We’re alone in this
- 
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# OBA Access to Antibiotic Working Group

- Focus on “4 Key Issues” affecting beekeepers
- Bring together Beekeeping Industry, Specialists and Vets
- Develop Options and Recommendations
- Deliver Report to CVO, OVMA and OMAFRA



# Access to Antibiotic Working Group

- Les Eccles – Working group Chair and secretary, OBA TTP Lead Specialist
  - Jim Coneybeare – OBA President
  - Dr. Melanie Barham – Vet and beekeeper, UofG Animal Health Lab
  - Paul Kozak – OMAFRA Provincial Apiarist
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  - Dr. Nuria Morfin – Vet, OMAFRA Bee Inspector, PhD candidate at UofG
  - Paul Kelly – Beekeeper, field manager for UofG Honey Bee Research Centre
  - Angela Cox – Beekeeper and Vet Technician
  - Timely coordination with CVO and OVMA
- 




# Key Aspect #1

## Rational for responsible use of antimicrobials in beekeeping

- History of AFB in Ontario
- How and why we used antibiotics as described by the CFIA registered product label
- Management of AFB as described in the OMAFRA Treatment Recommendations
- Oversight by OMAFRA re: legal use
- Oversight by CFIA for food safety
- Relative risk of exposure to human diseases very low
- Training provided to beekeepers through UofG, TTP, Niagara College and OMAFRA materials.


# Key Aspect #1

## Rational for responsible use of antibiotic use in beekeeping

- 1889 – “First A.F.B. Act” - 2 years 1600 clinical cases found
  - 1912 – 43% of all inspected colonies were positive for AFB
  - 1925 – burning found to be only significant method to control AFB
  - 1930 Reduced AFB to 6% with “hot spots”
  - 1940 Use of antibiotics as PREVENTATIVE control of AFB. Inspectors could “sleep at night”
  - Risk level is high for sustainability of beekeeping industry
  - Risk level is high in relation to Animal Welfare
- 



# Key Aspect “Vet Client Patient Relationship (VCPR)”

- Oversight by the College of Veterinarians of Ontario (CVO)
  - VCPR describes a specific list of criteria that must be met to give veterinarian confidence to prescribe antibiotics to a client
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# Vet Client Patient Relationship (VCPR)

## First proposed VCPR extensive

- Producer name
- Address and location of production sites
- Confirmation of registration of operation with the province where this is required by legislation
- Premises identification number (where applicable)
- Number of colonies
- Number of hives
- Annual production
- Reasonableness of access to production units by veterinarian
- Evidence of in person consultation either by actual visits to production sites or consultation by real time video communication
- History of health management practices of the operation

# Site visit part of Dispensing Reg. 1093

## “Recent and sufficient knowledge” 33(1)b

Ontario Regulation 1093

33. (1) No member shall administer, dispense or prescribe a drug unless,

(a) the requirements of subsection 18 (2) or (3) have been met in respect of the animal or group of animals to which the drug is going to be administered, dispensed or prescribed;

(b) the member has sufficient knowledge of the animal or group of animals by virtue of a history and inquiry and either physical examination of the animal or group of animals or medically appropriate and timely visits to the premises where the animal or group of animals is kept to reach at least a general or preliminary diagnosis;

(c) the member believes that the drug is prophylactically or therapeutically indicated for the animal or group of animals; and

(d) the member is readily available in case of adverse reactions to the drug or failure of the regimen of therapy. R.R.O. 1990, Reg. 1093, s. 33 (1); O. Reg. 431/00, s. 7; O. Reg. 233/15, s. 23 (1).

# “Recent and Sufficient Knowledge”

- Site Visits Complications
  - AFB controlled preventitively
  - Multiple yards and locations
  - Vet must have a “mobile unit” licence



# CVO Advocating for OBA

- CVO successfully requested exemption from Section 33. (1b) meaning no required site visit

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# CVO Current Proposed VCPR

- Confirm the registration of the beekeeper
  - Confirm the number of colonies held by the beekeeper
  - Confirm the production management practices of the beekeeper
  - Confirm the standard operating procedure/protocol for use in a disease requiring an antimicrobial drug
- 
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- 33 (1c) – Because antibiotic use for bees is recommended preventitively and prophlactically, proof of “need for use” is not required. Vets can prescribe antibiotics to any beekeeper with a VCPR in place.

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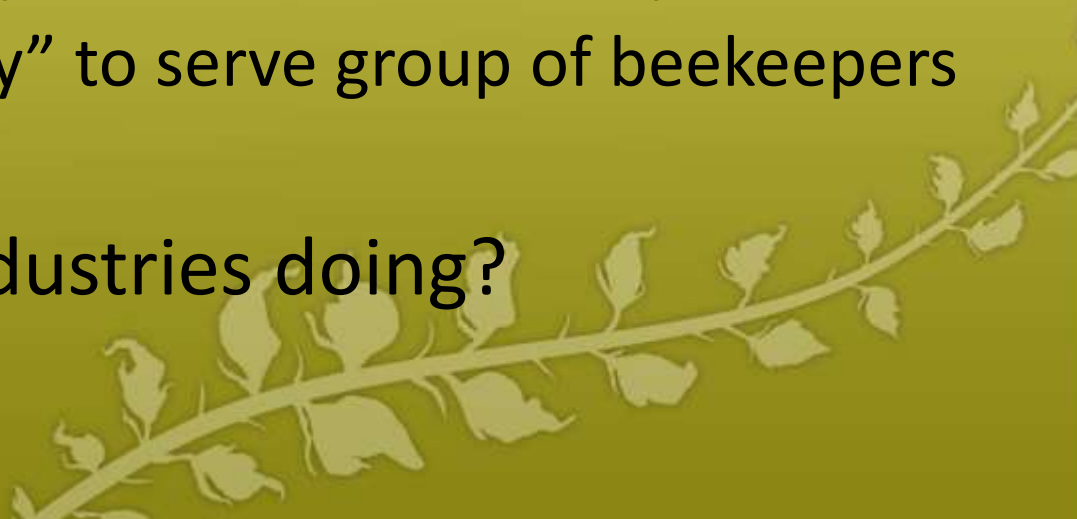
# Key Aspect

## Dispensing of Antimicrobial products

- *Drugs and Pharmacies Regulation Act and Pharmacy Act*
  - *Dispensing* only from a pharmacy or vet clinic
  - Livestock Medicine Outlets (LMOs) no longer able to provide over the counter antibiotics
- VCPR normally requires mobile unit licence
  - Administrative Exemption would remove need for site visit
- Telemedicine
  - VCPR able to be formed by phone

# Key Aspect

## Dispensing of Antimicrobial products

- What options could be explored to ensure:
    - Options for Bee and farm supply stores to continue antimicrobials for sale
    - Online purchasing options
    - “Bee Manager” represent other beekeepers
    - Vets have “bee day” to serve group of beekeepers
  - What are other industries doing?
- 

# Key Aspect

## Dispensing of Antimicrobial products

- Most likely dispensing sites
  - Online through “Veterinary Purchasing”
  - Vet Clinics



# Key Aspect

## Education for Veterinary and Beekeeping industry

- Veterinary education is to address responsible use of antimicrobials only, and not liability of other honey bee health issues or treatments
- Beekeeper education
  - AFB management
  - Standard Operating Procedures
  - Forming VCPR

# Key Aspect #4

## Education for Veterinary and Beekeeping industry

- Vets and Beekeepers (tailored to each industry)
  - Training on American Foulbrood and European Foulbrood that antimicrobial under CFIA legislation are used to manage.
  - Training on label use and OMAFRA recommendations of antimicrobials for AFB and EFB
  - Understand biosecurity risks associated with AFB and EFB on an industry wide and individual operational bases
  - Training on biosecurity practices that should also be implemented to manage AFB and EFB
  - Training on OMAFRA Apiary program, Animal Health Laboratory and other services offered to beekeepers in regards to AFB and EFB as reportable diseases

## MONITORING

- **Symptoms:**
  - Unhealthy brood pattern, perforated brood cappings, black hardened scale, dead larvae mucus-like consistency.

## INFECTED COLONIES

### .Contact:

- Local apiary inspectors:  
[www.omafra.gov.on.ca/english/food/inspection/bees/info\\_beeinspectors.htm](http://www.omafra.gov.on.ca/english/food/inspection/bees/info_beeinspectors.htm)
- Follow order of action from Provincial Apiarist


## MANAGEMENT OF INFECTED COLONIES

- Destroy/burn infected colonies
- Desinfection of hive tool and equipment
- Preventive Medication on at risk colonies




# Key Aspect #4


## Education for Veterinary and Beekeeping industry

- Responsibilities of Vets and Beekeepers needs to be clear
    - Vets to form VCPR and receive beekeeper information required to use antibiotics.
    - Beekeepers responsible for all other colony health decisions
  - VCPR Opportunity for industry to provide access to other important honey bee health information
  - Vets should have ability to direct beekeepers to accurate information on other BMPs for honey bees.
    - OBA Tech Transfer Program, OMAFRA Apiary program, University of Guelph and Niagara College
  - Template for AFB SOPs need to be developed for beekeepers/vets to complete VCPR
- 


# Opportunities

- High priority on AFB and education
  - Opportunity to improve antibiotic distribution
  - Long-term integration of beekeeping into Canadian veterinary schools
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# \$\$Cost\$\$

- Vets have freedom to choose fees that they wish to charge
  - Not likely to be high cost, but extra hurdle to adoption of new regulations
  - Common charges could include
    - Consulting fee
    - Dispensing fee
- 

# What are other industries doing?

- Other livestock groups have similar challenges
    - Small producers
    - Hobbyiest producers
  - Currently little information coming from other livestock groups
    - Already have VCPRs in place
    - Not working with small and hobbyist producers
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# Don't Shoot the Messengers

