

# Salmonella Dublin

Current situation



## SALMONELLA DUBLIN



- New presentation of an old disease
  - The serovar Dublin is a specific type of *Salmonella enterica*
  - Uniquely adapted to cattle, but can pass to humans
- Emerging in Québec (2011) but well established in Denmark from whence it passed to USA and beyond.



## SALMONELLA DUBLIN

- Principale source:
  - -**Purchase** of an infected animal
- Carrier status for years (manure and milk)
- Once established, it is very difficult to get rid of it.
  - Develops resistance

## SALMONELLA DUBLIN

- Calves are most vulnerable
  - Respiratory problems, fever, weak, loss of appetite, diarrhea +/- blood, death
- Cows are more resistant
  - bloody diarrhea, abortion, fever, drop in milk, weakness and inappetance, death
- Mortality varies from 1-50%

## Salmonella Dublin

- May 2011-Nov 2012, *Salmonella* Dublin was isolated in 15 veal/calf operations as well as 1 dairy farm,
- Detected in Montérégie, Center -du-Québec , the Mauricie and the Lanaudière.

## SALMONELLA DUBLIN

- Since 2011
  - 49 cases diagnosed by MAPAQ\*
  - 43% Montérégie
  - 35% Centre-du-Québec
  - Mainly in heavy weight calves:
    - 46 cases: 21 milk calves, 25 grain fed calves
    - Average age: 51 days
    - Morbidity: 23% and mortality:9%
    - Origin: 49% American calves and only 51% Canadian

\*<sub>24 septembre 2014</sub>

## SALMONELLA DUBLIN

- 2011:
  - 100% of the positive farms had received calves from the USA.
  
- 2012:
  - 55%
  
- 2013-14:
  - 40%

*\*data from Dr.Luc Bergeron, MAPAQ 24 sept.2014*

## SALMONELLA DUBLIN

- Dairy Situation in 2014
  - Saguenay
    - Dairy operation had one positive calf at 7 days of age
    - Several sick calves and one cow with diarrhea died.
    - Source: unknown
  
  - One mixed operation ( dairy and feeders ) :
    - 3/20 calves positive
    - Sick /dead calves had respiratory problems and diarrhea
    - Average age : 4-6 months
    - Source: Visitor from the positive farm

## SALMONELLA DUBLIN

- 16 January 2015: Chaudière-Appalaches
  - Calf 12 days old
    - Diarrhia, pneumonia, fever
    - Source: unknown
- 3 February 2015: Chaudière-Appalaches
  - Seropositive cow (no clinical signs)
  - Source: purchased from a positive farm.
- 23 January 2015: Centre-du-Québec
  - Seropositive heifer (no clinical signs)
  - Source: unknown
  - Found through the Prevalence study

## PREVENTIVE MEASURES

- Strengthen Biosecurity Protocols
  - Develop a personalized plan with your veterinarian
  - Eliminated positive suspects
  - Voluntary quarantine for affected/purchased cattle
  - Pasteurize milk
  - Limit visitors
  - Keep boots washed
  - Transporters shouldn't enter the barn

## TESTS AVAILABLE IN QUÉBEC

- Serology( antibody detection)
  - Blood test (red-top tube)
  - After 4 months of age (seroconversion)
  - Quick and accurate
  - Cost: \$18.85
- Fecal culture (manure)
  - Sterile samples required (see your vet)
  - Intermittent excretion of the bacteria so we could miss it!
  - Cost:\$44.55
- Necropsy at MAPAQ
  - Cost: \$171.71

## TESTS AVAILABLE IN QUÉBEC

- Milk culture
  - Sterile sample + culture medium
  - Contaminated milk represents a public health threat!
- Milk Serology
- Both test are available for the milk tank but false negatives are possible.

## **PREVALANCE STUDY**

- MAPAQ
- Started in late 2014
- Farms randomly selected
- Blood tested from young calves(n=10)
- Questionnaire
- Goal was to determine the prevalence on Québec farms.
- Several farms had a seropositive calf but no clinical signs.

## **SALMONELLA DUBLIN**

Good Operating Practices.

- Isolate sick animals.
- Colostrum from healthy cows only.
- Promptly separate calf from the dam
- Clean the nipples and pails daily.

## **SALMONELLA DUBLIN**

### Good Operating Practices

- Clean clean calving area
- Keep calves out of direct contact with sick cows.
- Don't overcrowd the calves
- Start a pest control program
- *Good for the goose, good for the gander*

**Thanks to**

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HVO Team





**Questions**

