Infectious Bovine Keratoconjunctivitis "Pinkeye"

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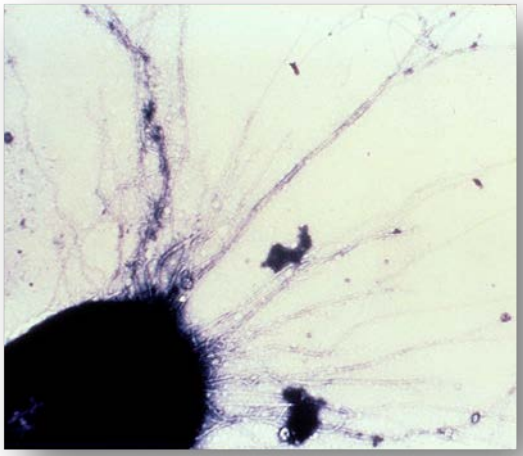
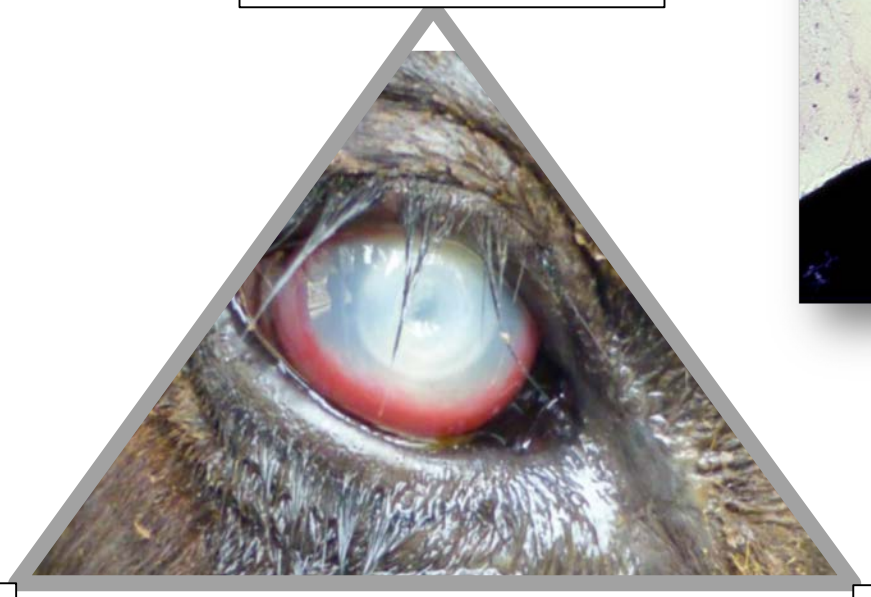
Infectious Bovine Keratoconjunctivitis

- Pink eye
- *Moraxella bovis* possible *Moraxella bovoculi*

IBK Complex

Etiologic Agent



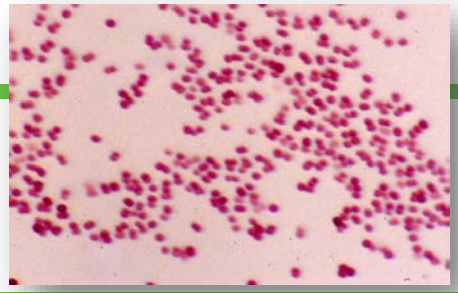


Corneal Irritation

Vector – Face Flies

Etiologic agent(s)

- *Moraxella bovis*
- Gram negative coccobacillus
- Carrier on several mucous membrane sites
- Eyes, nasal cavity, vaginal cavity



Etiologic agent(s)

- *Moraxella bovoculi*
- Gram negative coccobacillus
- Carrier on several mucous membrane sites
- Eyes, nasal cavity, vaginal cavity
- Originally isolated from clinical cases in dairy and beef calves in Northern CA

Etiologic agent(s)

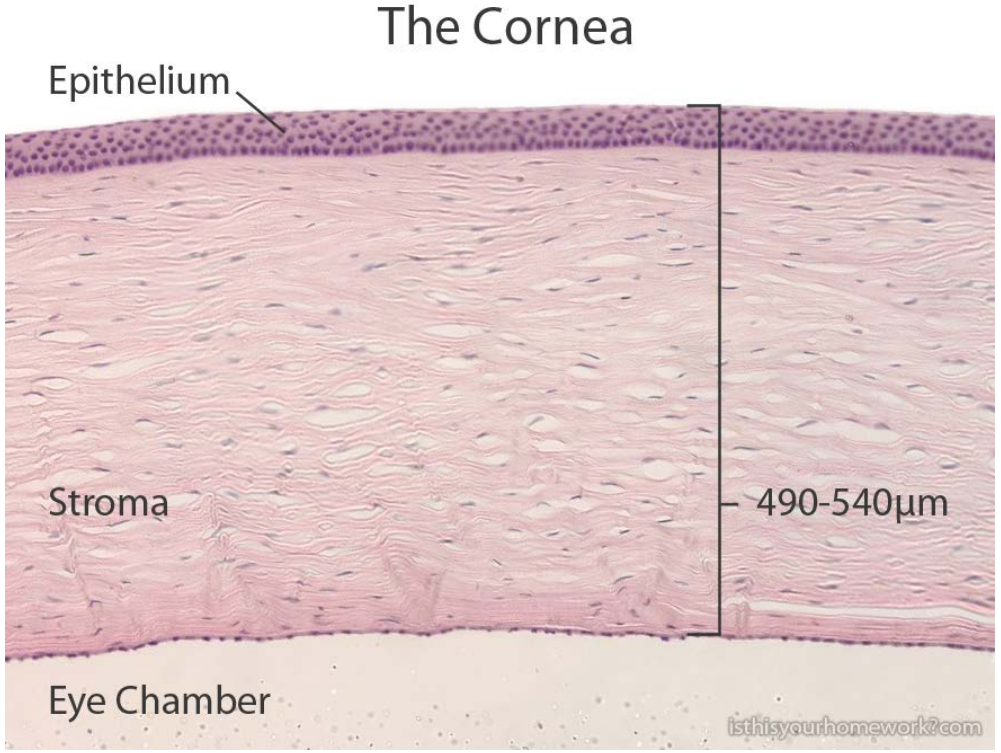
- *Neiserria catarrhalis*
- *Neiserria ovis*
- *Mycoplasma* sp.
- Infectious bovine rhinotracheitis (IBR) BHV-1 alpha herpesvirus

Corneal Irritation

- Fescue and other grass seed heads
- Round bale hay
- Pigweed
- Ultraviolet radiation in lightly pigmented breeds
- Dust
- IBR infection

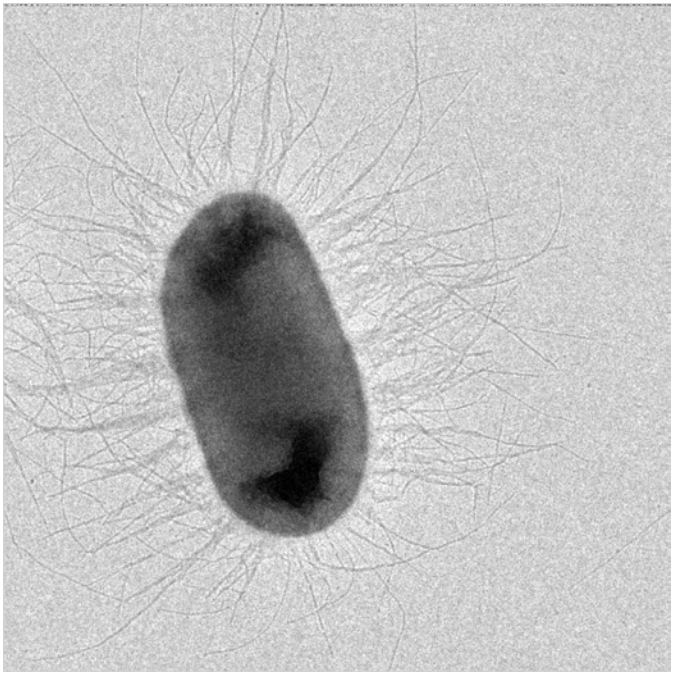
Corneal Irritation

- Corneal damage necessary first step toward infection
- Exposure of the stroma and collagen permits bacterial pilus attachment

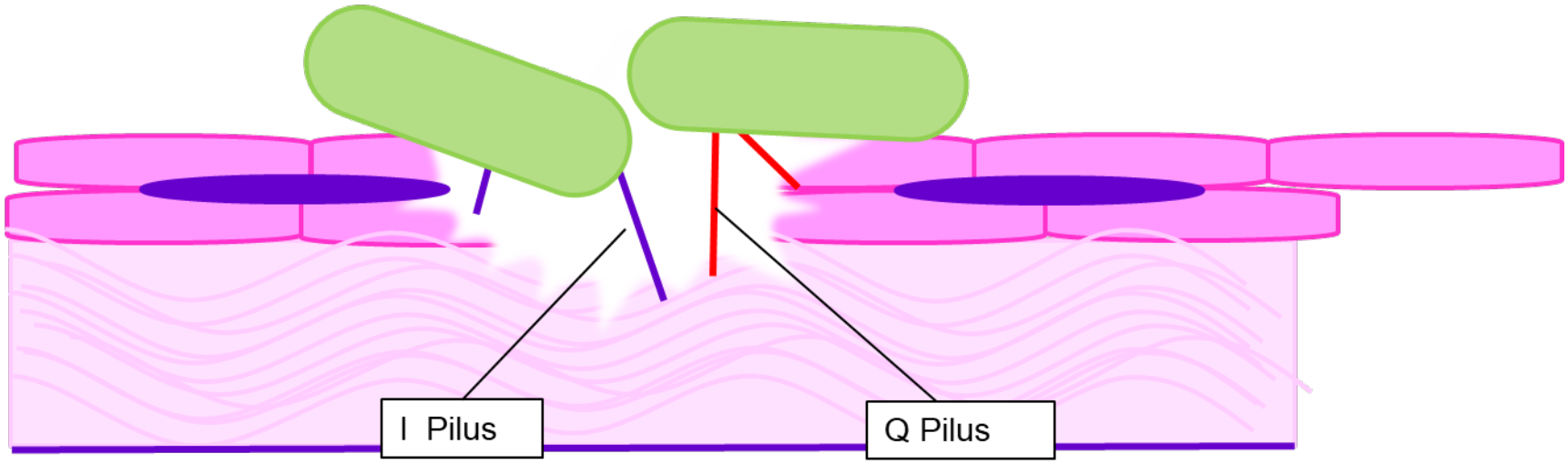


Pathophysiology

- *M. bovis* pilus (fimbrial) antigens
- Q pilus – necessary for initial attachment
- I pilus – necessary for persistence
- Pilus: filamentous extension that bacteria use to attach, sense the exterior environment and exchange DNA

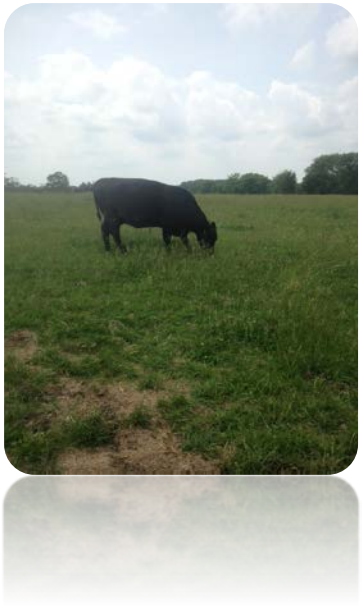


Corneal Irritation



Factors

- Irritation of cornea
- Dusty conditions
- Ultraviolet radiation
- Flies feeding
  - *Musca autumnalis*
- Pigmentation
- Age
- Other infection
  - IBR, Mycoplasma



Transmission

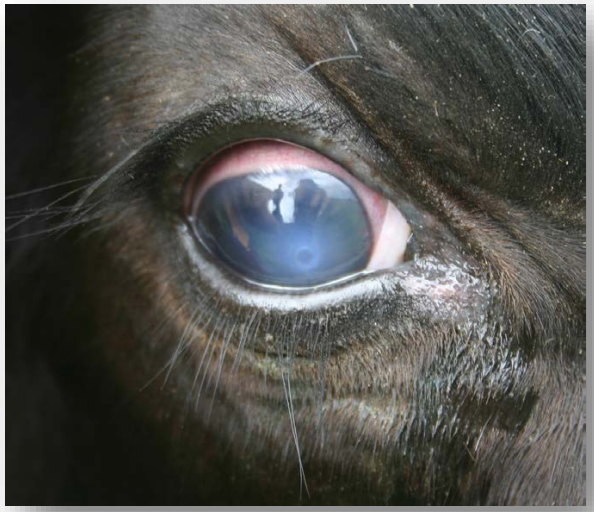
- Infected secretions
  - Eyes
  - Nasal secretions
- Flies
- Inanimate object
- Asymptomatic carriers
  - ~ 1 year

Clinical Signs

- Infection rates 2 to 80% of the herd
- Peak infection rate
  - 3rd or 4th week of an outbreak
- Incubation period : 2 to 3 days
- Conjunctivitis
- Excessive tearing
- Squinting
- Decreased appetite (pain and moderate fever)
  - 7 to 17 kg lower body weight at weaning

Stage 1

- Tearing
- Photophobia
- Excessive blinking
- Conjunctivitis
- Pain: reduced feeding
- Small ulcer: central
- “Cloudy” cornea
- Unilateral or bilateral



Stage 2

- Similar to stage 1
- Larger corneal ulcer
- Greater inflammation
- Increased “cloudiness”
- Iris still visible
- Blood vessels on outside of cornea
- Edge of cornea is “pink”

Stage 3

- Ulcer covers most of the cornea
- Inflammation to inner parts
- Anterior chamber fills with fibrin
  - Yellow appearance

Stage 4

- Ulcer completely through cornea
- Iris may protrude through ulcer

Corneal Scar

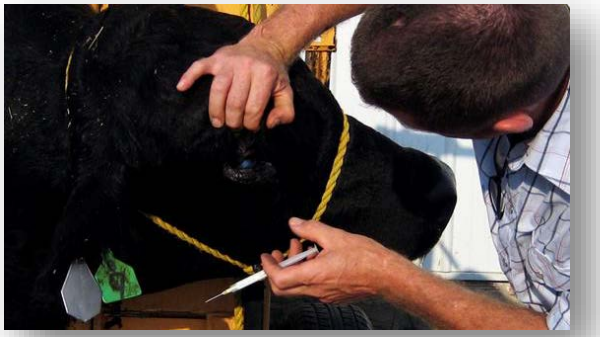
- Blood vessels recede
- Initially “Cloudy” blue cornea
- Cornea may become clear
- White scar may be permanent

Treatment

- Early treatment
  - Successful outcome
  - Reduce shedding
- Systemic Antibiotics
  - Oxytetracycline
  - Ceftiofur
  - Nuflor
  - Penicillin

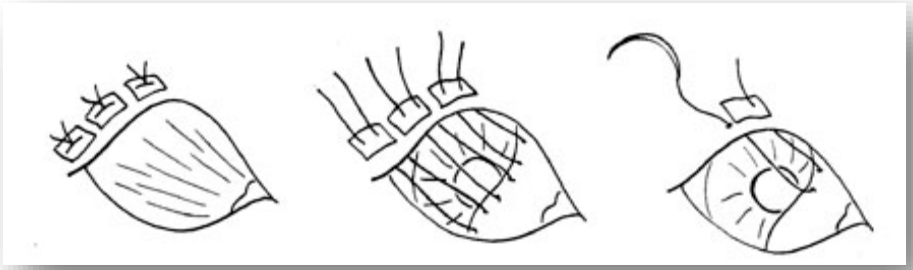
Treatment

- Local Antibiotics
  - Bulbar or palpebral conjunctiva
  - Penicillin and dexamethasone
  - Labor/expertise



Treatment > Stage 3

- Patch
- Tarsorrhaphy
- 3rd eyelid flap



Treatment

- Topical treatments
  - Tear production
  - Multiple treatments daily (4X per day)

Treatment – Topical

- Vetericyn Plus™ Pinkeye Spray
- (0.009 % hypochlorous acid)
- Experimentally induced lesion
- 2.0 ml, twice daily application for 10 days
- ***Reduced pain scores, lesion circumference, and healing time***
-


nfz™ puffer
Eye and Ear Infections In Dogs and Cats
Keep out of Reach of Children
CAUTION:
Federal Law prohibits the use of this product in food producing animals.
HESS&CLARK, INC.
NET WT 1.59 oz (45 g)
NADA 11-154, Approved by FDA

Illegal !!!

Vaccination

- Autogenous Vaccines
  - 3 commercial labs available

Addison, Newport, and AgriLabs

Take a culture and mail it to the lab

pathogen grown : make a vaccine

Back to you in ~ 6 weeks

~$500 for 200 doses

Requires primary and booster immunization

Prevention

- Fly control
- Reduce irritation
  - Clip pastures, provide shade
- Separate clinical animals
- Vaccination/implants/SolidBac
  - Multi strains
  - Minerals Vit A/ nutrition

Fly Biology

- Face fly maggots develop in freshly deposited cattle manure.
- Female face flies lay their eggs within 15 minutes after it is deposited
- The four stage life cycle takes about 15 to 25 days.
- Overwinter as adults in sheltered areas such as barns or attics and become active again in the spring.

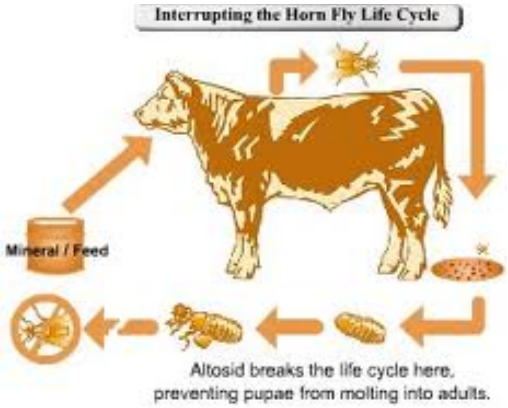
External Parasite Control Flies, Lice, Grubs and Ticks

Classes of Products:

- Organophosphates (Coral, Warbex, Spotton) (Organochlorine Endosulfan)
- Pyrethoid (Cylense, Durasect, Boss)
- Spinosyn (Elector)
- Avermectins (Ivomec, Dectomax)
- Tolfenpro (Bayer Ear tag)
- Insect Growth Regulators (IGRs) and Oral larvacides

Insect Growth Regulators

- **IGR**
- **Not an insecticide**
- **Interrupt or inhibit the life cycle of a pest**
- **Cannot reach adulthood,**
- **Not capable of reproducing**

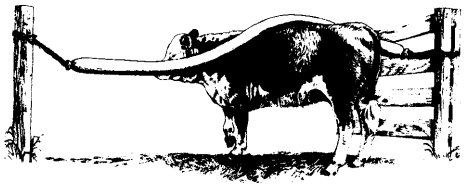


Ear Tag

- Duration ~ 5months
- Apply when flies > 50+ / side
- 12-15 wks control

Resistance

- Early season use back rubs / topical
- Use fly tags during heavy infestation
- Use one class of drug for 1-2 yrs
- Keep records of resistance in area
- Remove tags @ end of season



Label Directions

- Always read & follow label directions
- Always wear non-permeable gloves & keep away from food
- Withdrawal periods beef & dairy
- Proper records of treatment dates products & lot #'s

Questions/Discussion Please