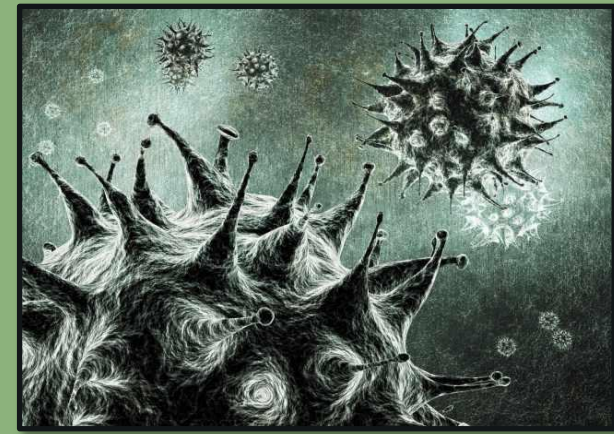


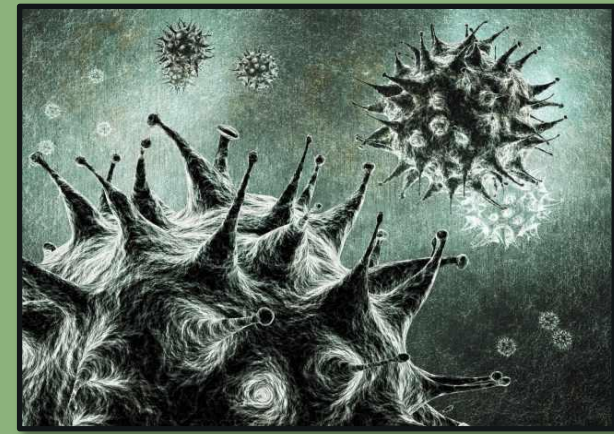
# BVD Virus



- Bulls
  - Suppress immune system (more & worse disease)
  - Sub-fertility
- Calves
  - Suppress immune system (more & worse disease)
  - Scouring, pneumonia
  - ↓ Growth
- Cows
  - Suppress immune system (more & worse disease)
  - Fertility (conception, early loss, abortion, deformity, small/weak calves, PI)



# BVD Virus



- PI
  - Infection in first 4 months pregnancy...
  - BVD tricks foetus into thinking it's part of own body so never fights it
  - Infected for life (Persistent Infection)
  - Shed massive amounts of virus
  - Main source of infection
  - Usually poor performance

# The cost of BVD depends on:

- **PIs**
- Cows
- Calves
- Bulls



# Cost of PI's

- **Susceptibility to disease** (23% higher risk of clinical mastitis, 22% higher risk for severe illness or sudden death)
- **Growth** (18% slower – 369kg vs 450kg)
- **Milk production** (23% lower)
- **Reproductive performance** (6% higher abortion rate, + calves always PI)
- **Mortality** (17% higher to 2 yr old)
- **But... some have acceptable performance**



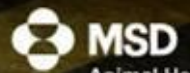
# The cost of BVD depends on:

- Pls
- **Cows**
- Calves
- Bulls



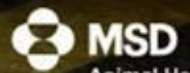
# Cost of BVD in infected herds

- Herds with a high number of antibody positive yearlings (suggesting actively infected) compared to other herds:
- Average 5% reduced pregnancy rate
  - 60% of herds infected
  - Up to 15% lower pregnancy rate in some herds
- $5\% \times 100 \text{ cows} \times \$600 = \$3,000$



# The cost of BVD depends on:

- Pls
- Cows
- **Calves**
- Bulls



# Cost of BVD in calves & heifers

- NZ??
- Europe reports great improvements where BVD eradicated (Scandinavia, Orkney)
- Effects:
  - Congenital infection – small weak calves + much poorer fertility later, deformities (esp. neural)
  - Disease – Many studies with much worse effects of other diseases when BVD also present
  - Growth – one recent study found 20% lower growth rates despite immunity! (immune cost?)


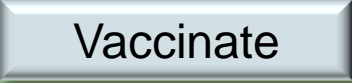


# The cost of BVD depends on:

- Pls
- Cows
- Calves
- **Bulls**

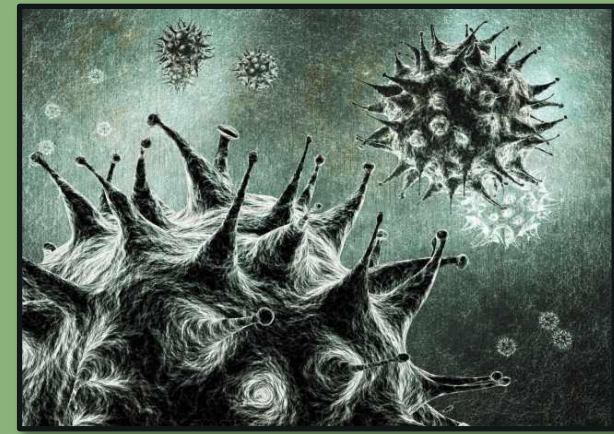


# Cost of BVD in Bulls

- Risk for introducing infection
- Persistent Infection 
  - Often have poor fertility, even in immune cows, even if acceptable semen quality
  - Some (not all) offspring will be PI
  - Not fit for service
  - Risk to herd
- Transient infection 
  - Virus in ejaculate
  - Temporary drop in semen quality
  - Immune suppression increases risk of other diseases



# BVD Virus



- Bulls
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- Calves
  - Suppress immune system (more & worse disease)
  - Scouring, pneumonia
  - ↓ Growth
- Cows
  - Suppress immune system (mastitis ++)
  - Fertility (conception, early loss, abortion, PI, deformity, small/weak calves)