Control and eradication of Bovine Viral Diarrhoea Virus

January 2013
Calves infected before 120 days of pregnancy born persistently infected (PI)
Shed high levels of virus throughout life
Many die of Mucosal disease 6-24 months
PIs are the main source of infection
PI Removal / prevention is key to control
Risks:
- Purchase of PI cattle
- Cattle carrying PI foetus
- Purchase of Infected animal
Outcomes of infection in non-PI cattle

- Weakening of immune system
  - More susceptible to other infections (diarrhoea, pneumonia)
- Reduced milk yield, increased somatic cell count
- Pregnant cattle
  - Failure to conceive/return to service
  - Abortion/mummification
  - Birth defects (wobbly, eye defects)
  - Birth of PI calves
- Bulls – infertility: virus transfer in semen
  bulls can be PI
BVDV
In early pregnancy

Only dam becomes immune

Virus mutates to lethal effect
= mucosal disease

Cow and calf infected

Calf born persistently infected (PI)

~80%

PI Dam
Routes of Introduction

- Livestock trade
  - PI Bought in
  - Dam: carrying a PI foetus
  - Animal infected during trade (mart)
- Pasture/fence contact with other stock
- Shows and sales
- Breeding bulls can be PI
- Visitors and workforce
- Vehicles, machinery and borrowed “kit”
Financial Impact

- Direct cost in the Isle of Man estimated £750,000 annually
- £61 minimum per dairy cow in one year
- 100 cow herds
  - Beef: £4,600 annually
  - Dairy: £13,500 annually
  • (9-19% of farm income)
BVD and Abortion

- NI study
- 142 aborted/stillborn foetuses submitted to Lab
- Tested for BVD virus
- 19 (13%) positive
- SAC: Single Abortion
  - £650 dairy
  - £200 to £300 beef
Options for Control

- Do nothing: live with it – self clearance?
- Inactivated vaccine - on cost
- Eradication and vaccination
- Eradication and good biosecurity especially Imports
BVD

- Sweden, Norway, Finland, Denmark and parts of Austria, Scotland and England
  - Successful eradication programs **without vaccine**
- France, Germany – schemes underway
  - With vaccine
- BVD-free countries likely to seek protection during trade (OIE List B)
- British Isles – high level of infection the result of no systematic controls
The Swiss BVD-eradication program

Percentage of PI Calves among newborn calves

34 months, reduction by > 95%
BVD infected Herds in Denmark

![Chart showing number of dairy and beef herds infected by BVD in Denmark from 1995 to 2004. The chart displays a significant increase in dairy herds infected in 1996, followed by a decrease in the following years. Beef herds also show a decrease over time.](chart.png)
Voluntary

Costs:
- Testing partially funded. TST tags supplied.
- Veterinary fees in personal additional controls
- Additional e.g. fencing

PARTNERSHIP

December 2012
- 66% producers joined
- 77% of projected calves born

January 2013
- TSTs released
- first samples taken