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A cross-sectional and longitudinal study on the risk of BVDV re-infection in BVDV-free cattle herds in Belgium

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BACKGROUND

- ✓ A high BVDV prevalence in Belgian cattle herds
- ✓ BVDV control on a voluntary basis at the herd level
- ✓ A poor implementation of biosecurity measures in Belgian cattle herds

OBJECTIVES

Given the current implementation of measures for BVDV control in Belgian cattle herds, determination of

1) risk factors for BVDV re-infection

2) the risk of BVDV re-infection

METHODS

Cross-sectional study:

- ✓ Selection of 61 cattle herds assumed BVDV-free
- ✓ Questionnaire on
  - Biosecurity
  - Removal of PI animals
  - Monitoring of BVDV-status
  - Vaccination
- ✓ Serologic examination of young stock [spot test]
  - ≥ 20% seropositive = herd BVDV infected
- ✓ Multivariable logistic regression model

Longitudinal study:

- ✓ 26 cattle farms with negative spot test further followed
- ✓ 3 additional spot tests (every 6 months)
- ✓ When detection of BVDV
  - ➔ exploration of possible causes with:
    - Additional sample collection
    - Farm-specific questionnaire

RESULTS

➔ 11/61 (18.0%) of the herds BVDV infected

Risk factor	Category	OR	95% CI
Monitoring for BVDV	Yes	0.09	0.02; 0.55
Participation to auctions/competitions	Yes	140.27	3.00; 6559.65
Distance to nearest cattle farm (km)		0.06	0.00; 0.96

- ✓ **BVDV re-infection in 6/26 (23.1%) of the farms**
- ✓ On 3/6 farms at least 1 PI animal detected
- ✓ On 1/6 farms 8 new PI animals born
- ✓ Insufficient biosecurity measures at purchase assumed (n = 1) and identified (n = 1) as cause of BVDV introduction
- ✓ Indirect BVDV transmission through visitors suspected as a cause
- ✓ Self-clearance of BVDV on 2/6 farms

CONCLUSIONS

➔High risk of BVDV re-infection in Belgian cattle herds

➔Higher implementation of biosecurity measures needed to decrease this risk

Purchase Visitors

➔Monitoring of the BVDV status useful to early detect re-infection and follow the evolution

Self-clearance? PI animal(s)?

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