Surveillance analysis Tool for Outcome-based Comparison of the confidence of FREEdom

European Food Safety Authority

Using heterogeneous information for the estimation of the probability of freedom from infection with BVD virus : A conceptual model mapping information onto infection biology

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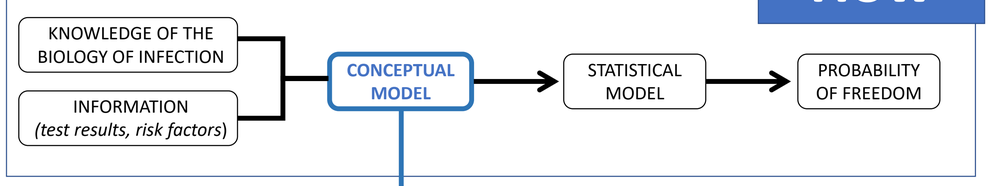
Why

- In Europe: different regional/national programmes for the control or eradication of Bovine Viral Diarrhoea virus infections
- These programmes rely on information that is heterogeneous in order to determine whether animals or herds are infected and likely to spread the disease to other herds.
  - Heterogeneity in the nature of: diagnostic tests used or relevant risk factors
  - Heterogeneity in level assessed: animal, pool, herd or territory
- This heterogeneity makes it hard to estimate the probability of freedom from infection for cattle imported from regions/countries with a different control programme
- **STOC free project:** design of a framework for the estimation of a probability of freedom from infection and its associated uncertainty from heterogeneous information

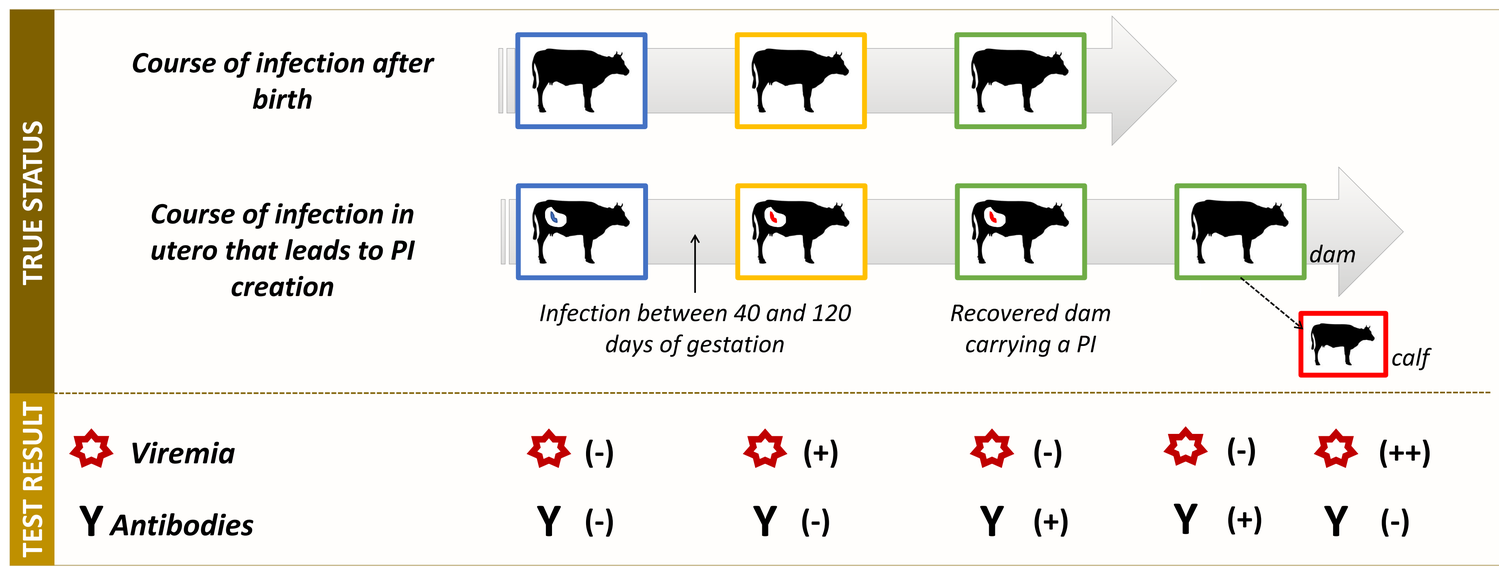
How



Aim

Objective: map the different types of information onto the true BVDV infection status at animal, herd and territory levels.

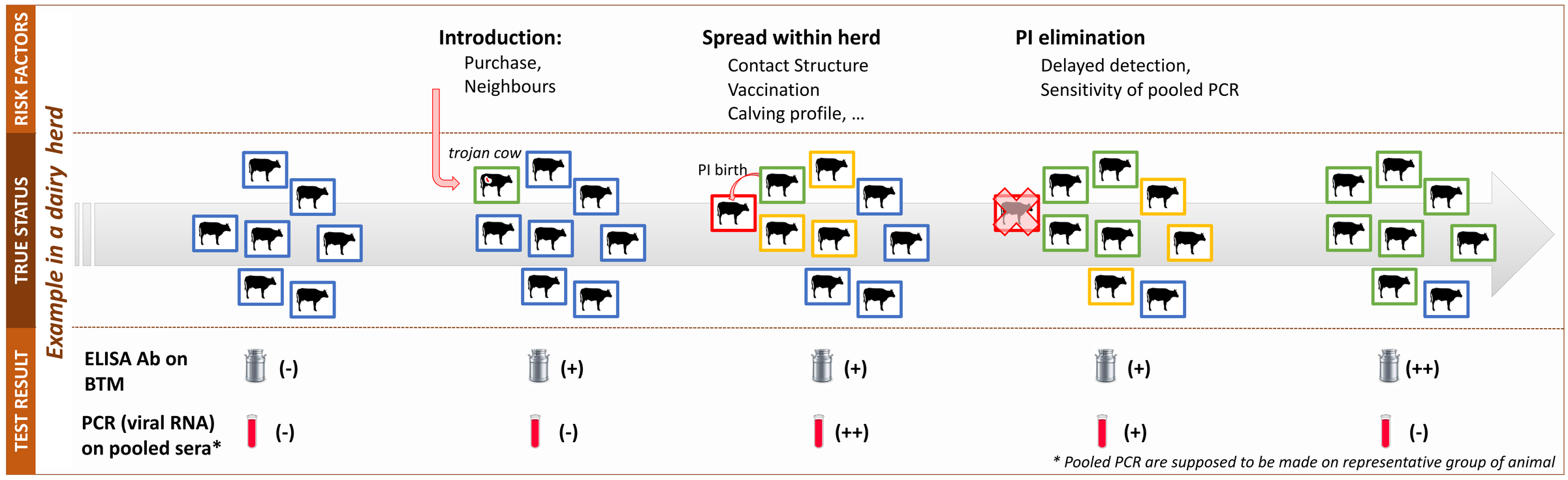
INDIVIDUAL LEVEL



True status definition

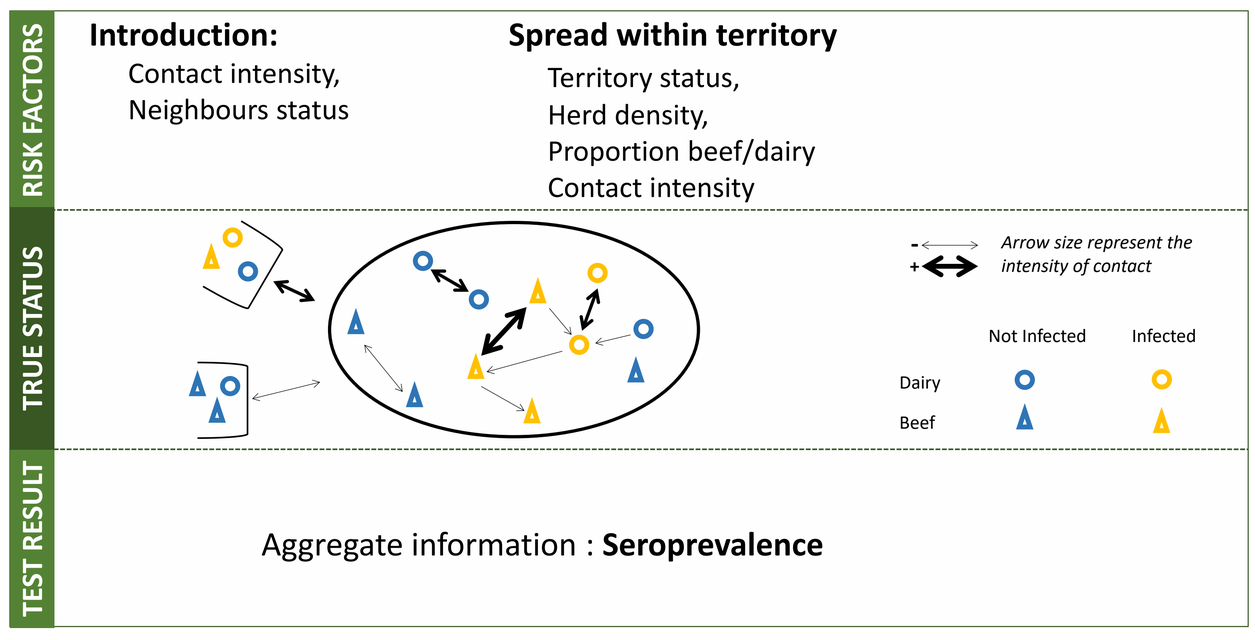
- **Susceptible**: never been infected by BVDV, not immune
- **Transiently infected** : after birth infected by BVDV
- **Recovered**: immune against BVDV after transient infection
- **Persistently infected** : in utero infection by BVDV, lifelong infection by BVDV

HERD LEVEL



* Pooled PCR are supposed to be made on representative group of animal

TERRITORY LEVEL



Conclusion

This conceptual model will serve as a basis for the development of the STOC free model.

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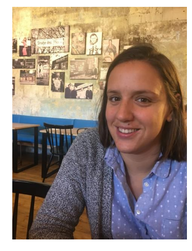

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