Encouraging the use of vaccination-to-live as a control strategy for FMD outbreaks.

EuFMD Standing Technical Committee
Vaccination-to-live subcommittee

Stephan Zientara (Chair), Donald King, Labib Bakkali Kassimi, Emiliana Brocchi, Eoin Ryan, Kris De Clercq

Vaccination-to-live

- STC Sub-committee on vaccination-to-live met in Paris, 8th June 2016
- Following on from the work of Paton et al. (2014) presented at Cavtat 2014: The use of serosurveys following emergency vaccination, to recover the status of "foot-and-mouth disease free where vaccination is not practised".
- Sub-committee: *Stephan Zientara (Chair), Donald King, Labib Bakkali Kassimi, Emiliana Brocchi, Eoin Ryan, Kris De Clercq*

Key points

Important to tease out the constraints impeding the adoption of vaccination to live as a strategy and address them where possible.

Can we make the decision process easier for CVOs?

- To decrease uncertainties surrounding the impact of selecting vaccination-to-live as a strategy for FMD control
- To make vaccination-to-live more feasible as a control option

Conclusion: a 3 month waiting period after vaccination and higher level of surveillance may be as good than a six month waiting period after vaccination and surveillance.

Ethical/Sustainability/Environmental issues

- Animal Welfare: Public tolerance for mass culling decreasing

- Sustainability of livestock production important
  - Carbon footprint of livestock culled and unconsumed
  - Restocking post-cull: increase in endemic/production diseases, loss of genetic resources

- Environmental issues:
  - Burning or burying cattle or pigs is considered a serious source of pollution (serious contrast between law of Min. Agriculture and Min. Environment)

- *Evidence gaps: consumer attitudes, environmental impacts*

Economic issues

- What is cost-effective for one MS may not be cost-effective for another
- Six months minimum period to regain freedom: comparative impact of delayed access to export markets; attitudes of stakeholders; attitude of third countries

Evidence gap: economic study comparing costs/benefits of vacc-to-live with regard to variables such as livestock sector as % of GDP, balance of livestock exports versus home consumption

- Meat from vaccinated animals cannot be marketed outside the MS
- Attitudes of major retailers to products from vaccinated animals – what is the impact of segregating products to prevent export of meat from vaccinated animals?

Evidence gaps: retailers and consumer attitudes, impact of vaccinated marketing restrictions

Allocation of costs and responsibilities

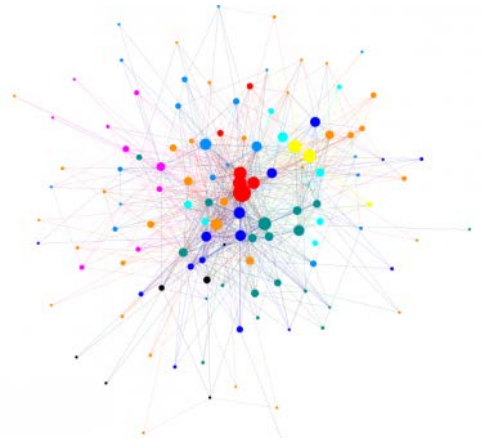
Who should bear the costs?

- Maintaining an antigen bank
- Lowered value of vaccinated animals?
- Reduced value of products from vaccinated animals?

Australia – stakeholders share costs and have role in policy making process

Bringing stakeholders into the discussion now will increase the likelihood of a consensus if a decision needs to be made in the face of an outbreak

The decision making process



- Policy networks – veterinary services, stakeholders, farming and supermarket lobbies, exporters, animal welfare groups
- Control policy "defaults": movement controls, culling infected farms, tracing, biosecurity

- Decision to vaccinate: an active choice
- Time is a factor – 14 days!

- Working environment of high uncertainty with low tolerance for failure – active decision becomes harder
- Modelling outputs will influence the process in some countries – gaps must be addressed (vaccine matching)

Constraint analysis

Technical surveillance issues:

- Design of post-outbreak NSP surveillance: undisclosed virus circulation
- Guideline for interrogation NSP survey results: clustering
- Follow-up of positive results: probang for ruling out positives is questionable

- Design of post-outbreak surveillance in unvaccinated species: sheep undisclosed virus circulation

- Design of post-vaccination monitoring: quality of vaccination programme
- Vaccine matching wit field strain and SP kit matching with vaccine

Quality assurance for vaccination and surveillance

- The quality of vaccination and of post-outbreak surveillance are critical
- How can this be evaluated?
- *Evidence gaps:*
  - *Tool for post-outbreak sample design*
  - *Guidelines for interpreting large scale survey lab results*
  - *Criteria for evaluating the effectiveness of vaccination implementation*
  - *Criteria for the quality of post-outbreak serosurveillance*

Evolving regulatory environment: Advocating for change

Opinion of this EuFMD Sub-Committee:

a six month waiting period does not necessarily provide more confidence in disease freedom than a three month period if specific conditions are fulfilled:

- **Quality of vaccination strategy and implementation (PVM)**
- **Quality of post-outbreak surveillance**
- **Increase the level of confidence**

Suggestion that where vaccination-to-live is used a waiting period applies to regain the status of FMD free without vaccination, either:

(a) A 3 month waiting period: Provide a comprehensive package of quality assurance data and epidemiological analysis to demonstrate the achievement of a high level of confidence in disease freedom,

or

(b) A 6 month waiting period: with surveillance to substantiate freedom of FMD but no requirement for additional quality assurance data (i.e. status quo)

Evidence gaps:

- A methodology for estimating confidence in disease freedom using evidence from different surveillance activities

- A methodology integrating quality criteria into the overall calculation of confidence in disease freedom

Proposal from OIE FMD Ad Hoc group to SCAD

- *"This period can be reduced to three months if effectiveness of vaccination using vaccine compliant with the Terrestrial Manual is demonstrated and additional serological surveillance for antibodies to non-structural proteins is carried out in all vaccinated herds. This includes sampling all vaccinated ruminants and their non-vaccinated offspring, and a representative number of animals of other species, based on an acceptable level of confidence"*

- SCAD accepted proposal; now with Code Commission, to be sent to members for comments and possible decision at General Session in 2017

- An AHG on the methodology for estimating confidence in disease freedom and integrating quality criteria
- Longer term: explore reduction to three months after testing a statistical number of cattle – only possible if supported by tools to estimate level of confidence in surveillance system

Thank you !