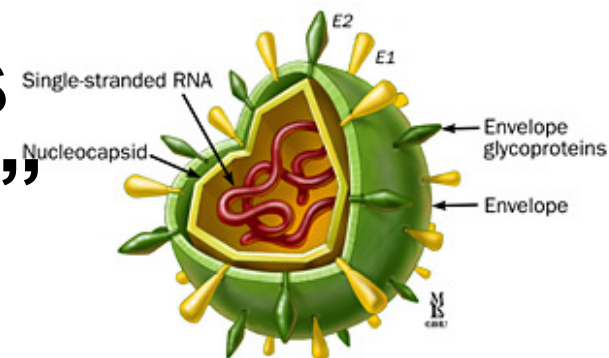


AHAW Opinion

“Animal health safety of fresh meat derived from pigs vaccinated against CSF”



- Recurring infection of domestic pigs in Europe
- Changing clinical picture
 - Shifting from per acute to even sub clinical
- Non vaccination policy in domestic pigs, vaccination possible
- Stamping out and destruction of millions of pigs

- **Modified Live virus vaccine: C-strain**
 - Rapid immunity response post vaccination
 - No serological differentiation from infection
 - Oral application possible
- **Marker vaccine: sub unit**
 - Differentiation possible but:
 - Immunity gap
 - No oral application
 - Accompanied diagnostic assays can be improved

Mandate on safety of fresh meat from vaccinated pigs

To provide an opinion on the safety of fresh meat derived from vaccinated pigs for animal health, both from marker and conventional vaccines, taking into account the different control, eradication and surveillance measures required, including the use of new tools and techniques, such as the RT-PCR.

Mandate on Safety of fresh meat from vaccinated pigs

- a) What is the risk that wild type virus is present in fresh meat obtained from pigs vaccinated in an emergency situation during an outbreak?*
- b) What are the sampling schemes and testing procedures needed to be applied to detect field virus in fresh meat derived from pigs vaccinated following an emergency vaccination during an outbreak? Pig vaccination status considers both marker and conventional vaccines.*

- Modified live vaccine (MLV)
 - In case of emergency vaccination serology cannot be used to differentiate vaccinated from naturally infected animals.
 - rRT-PCR is highly sensitive and has the ability to differentiate vaccinated from naturally infected animals.
- Sub-unit marker vaccine
 - The immunity gap is long
 - Differentiation between vaccinated and naturally infected animals is possible by serology

No data from literature could be used due to:

- Design and purpose of the experiments were different
- Tests have been improved since some experiments were conducted
- Sample size was not always indicated and limited in other cases

- The Model is herd-based
 - comparable to the NAADSM model (Harvey et al., 2008)
 - simulates transmission between herds based on disease specific parameters
- Output enumerates number of infected herds containing virus positive animals
 - compared to published CSF model (Backer et al. 2008)

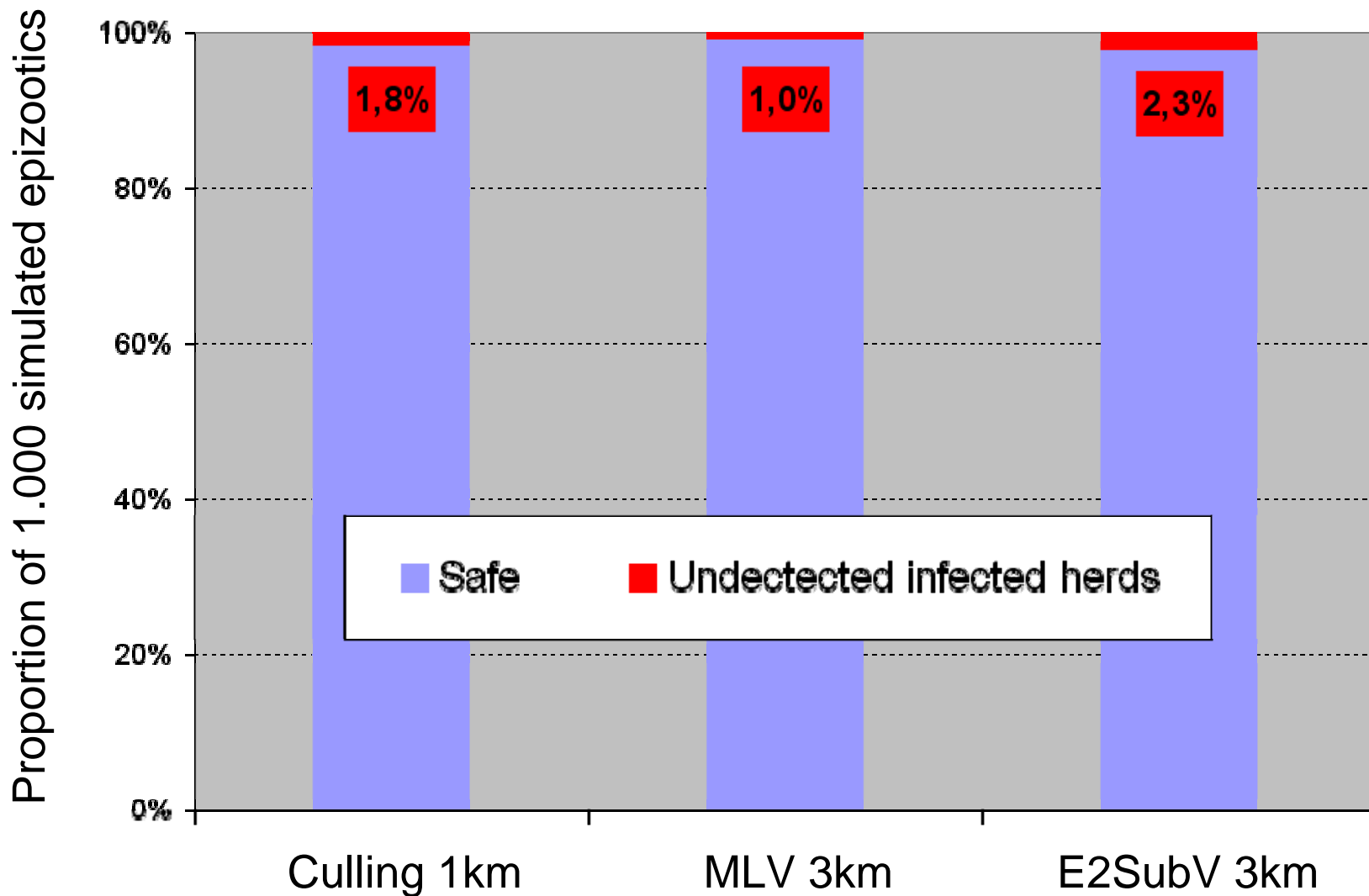
All scenarios: Stamping-out of CSF detected herds, standstill in 10km, and

- **Culling:** pre-emptive culling of premises within 1km radius around each detected case.
- **MLV:** emergency vaccination of premises within 3km radius around the detected case, assuming protection within 4 days post vaccination (“blocking immunity”).
- **E2SubV:** emergency vaccination of premises within 3km radius around the detected case, assuming protection within 14 days post vaccination (“blocking immunity”) and DIVA property.

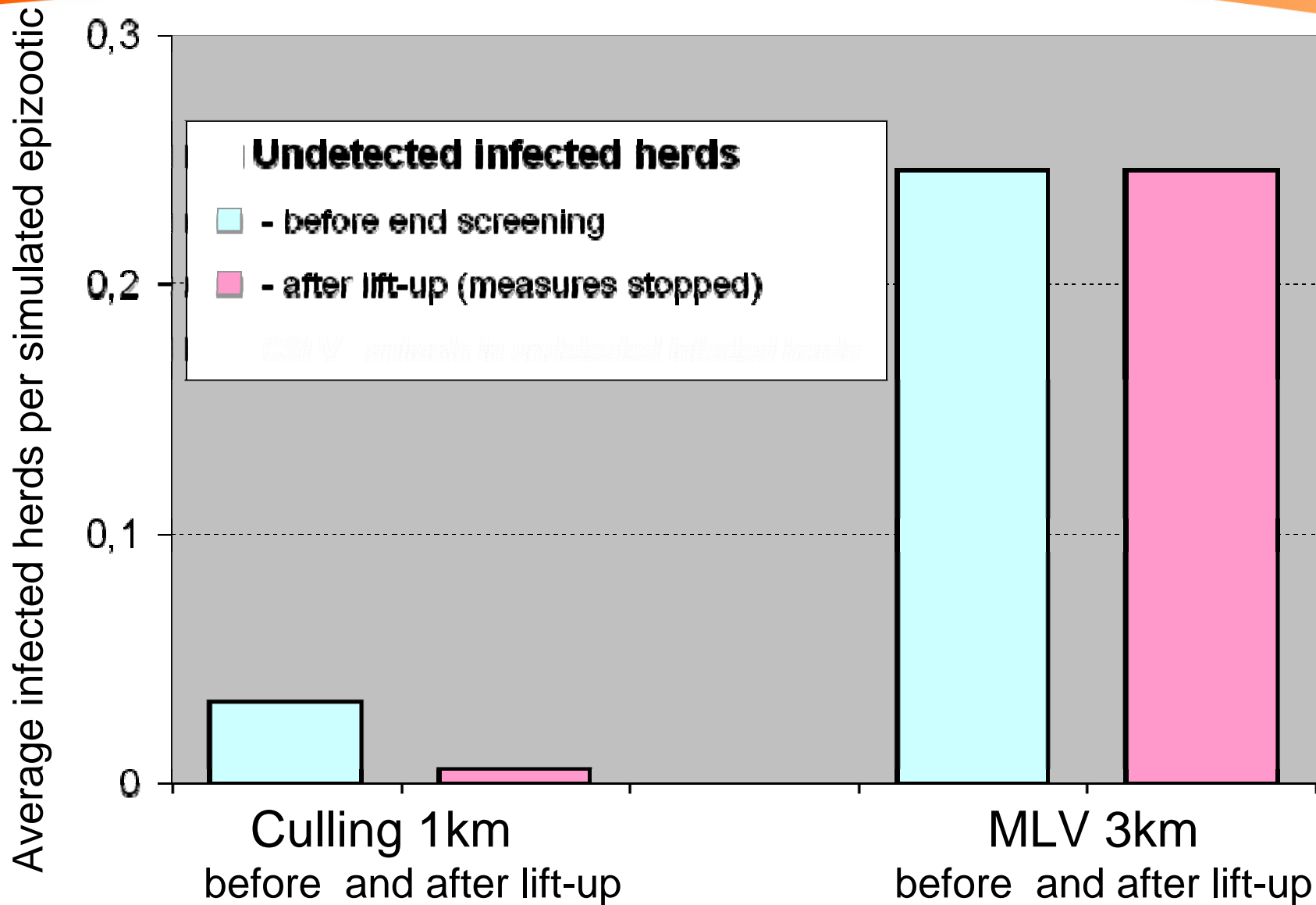
- The whole carcass is considered as “Meat”
- The status of infection is considered by the outcome of rRT-PCR
- “Infected” is used to cover all stages of a CSF infection (incubation, virus positive or antibody-positive)
- Chronically infected pigs are identified either by clinical signs and/or diagnostic testing
- Vaccinated animals that, at an appropriate lift up time, are tested rRT-PCR negative are classified as “zero risk” animals

- Virtual epizootics in an area of 500 X 500 km
 - Fade out excluded
- Running 1000 epizootics
 - Example: B 90 or NL 97 is 1 epizootic
- Strategy to compare:
 - Control by culling in 1 km or vaccination in 3 km
- Lift up 30 days after the last detection either in
 - The whole area (500 X 500 km)
 - The 3 km area around the first detected outbreak
- The actual sampling schemes are used for screening.

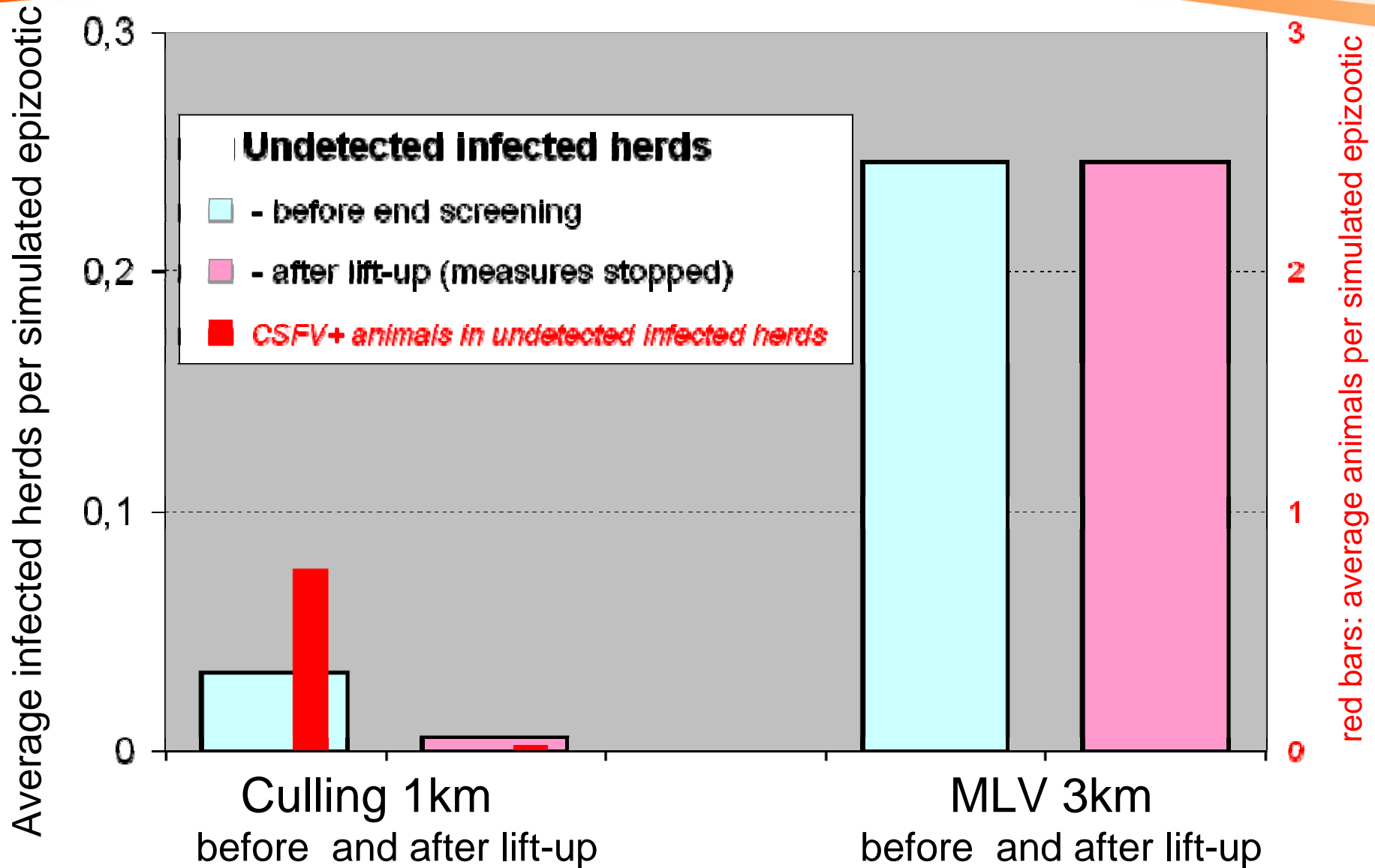
Epidemic situation after Lift-up (full epizootic)



Undetected infected herds (3km focus)



Undetected infected herds (3km focus)



Conclusions – Risk CSF virus present in meat

- ***None** of the considered strategies can reduce the risk in the intervention area to **absolute zero**.*
- *All **additional action** taken **decreases** the risk of undetected CSFV+ animals.*
- *In vaccinated infected herds, **the number of CSFV+ animals will be very small** since they are either recovered or dead since lifting of restrictions is foreseen to be taken place a certain time span after detection of the last outbreak.*
- *Any lower **compliance** with application standard of control methods will increase the risk for infectious animals remaining after lift-up.*

Conclusions – sampling schemes and testing procedures

- *Sampling and testing of **just a proportion** of the animals in a herd, may **result in no detection** of an outbreak when vaccination is applied.*
- *Final screening in **MLV vaccinated** herds is only possible with **rRT-PCR**.*