

# Control strategies: Immunisation of the breeders



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### Highlights

**The immunisation of the sows must always be carried out through their vaccination, because the exposure of pregnant sows to field viruses is a very risky practice in which frequently, the adverse effects are more serious than the possible benefit expected.**

**The vaccination of the sows will depend on the epidemiologic situation of the farms with regard to the PRRSV and on the production conditions on the farm.**

**On stable farms where negative piglets are systematically detected, that produce in multiple stages and that are located in low pig density areas it may not be necessary to implement vaccination programmes in producing sows.**

**If, on the contrary, the sow population is not totally stabilised and we do not have the guarantee of weaning negative piglets, it is a farm with growing animals or the farm is located in a high pig density area, it will be necessary to implement vaccination programmes in the sow population.**

**The vaccination of the breeder population will help to shorten the length of an outbreak of the disease, so it would be recommended as a first control measure to limit the virus circulation among the sows. The use of the virus that is causing the outbreak is less interesting, because it increases the economic cost of the outbreak.**

Among the actions that can be implemented on the farms to control the circulation of the virus between the sows, we must highlight their immunisation. Contrary to what happens in the replacement gilts; in the case of sows in production stage the only realistic possibility to achieve an appropriate, uni-

form and enduring immunity between the different groups of animals is the implementation of vaccination programmes. This is so because the exposure of pregnant sows to field viruses can lead, even in animals previously exposed to the virus, to a reproductive failure and the appearance of miscarriages

or of litters infected in utero that will suffer a high mortality during the lactation and the nursery stage, and that will contribute to the preservation of the infection in the growing animals. On the contrary, the administration of vaccines in previously immunised or infected sows is considered a safe practice, and although occasionally some cases of transplacental infection may appear, it is not probable that it has clinical consequences, and due to this, the potential benefits of the maintenance of a high and homogeneous immunity status in the breeders exceeds the risk assumed with the vaccination.

Nevertheless, unlike what happens with the adjustment of the replacement gilts (that is considered a compulsory practice), the immunisation of the breeders is an additional measure that will be implemented or not on the farms depending on some determinants that may recommend, or not, its use. Among these determinants we must highlight the starting point on the farm regarding the stability of the breeders, the production system (especially if it is site 1 of a farm with multiple stages or if there are growing animals) and the degree of isolation of the farm. If the farm is considered stable and negative piglets are weaned systematically, it is a site 1 farm and it is isolated, it is possible that the adjustment of the replacement gilts is enough for the control of the infection in the sows and in all the production stages, and that it is not necessary to complement this measure with the periodical vaccination of the adult sows. If, on the contrary, the breeder population is not completely stabilised and there is not the guarantee of weaning negative piglets, or if on the farm there are growing animals in which the virus may be, potentially, circulating, or if the farm is in a high pig density area, it will be necessary to carry out

specific actions on the sows in the production stage to guarantee that the average immunity level remains high. In these cases, vaccination will be recommended. This is because in the previously mentioned situations it is very probable that the sows are being repeatedly challenged throughout their productive life, so keeping a high immunity level in the population becomes a necessity to achieve an effective control of the infection. Since at least some of these determinants are present on most of the pig farms, the vaccination of the sows to keep a high average immunity level and to protect the population against recirculations of the virus is a very common practice.

It has also been confirmed that when there is an outbreak of the disease in the breeders, their vaccination helps to shorten the length of the outbreak, so the vaccination of the breeders would be recommended as the first control measure that helps to limit the virus circulation among the sows. This measure has proven to be more appropriate in an outbreak situation than the exposure to field viruses. This is due to the fact that, while the exposure to the field virus that causes the outbreak, while it lasts, reduces the length of the outbreak and the time needed to produce negative piglets at weaning, the expenses related to the outbreak, basically due to the loss of piglets, are much higher, because the exposure of the sows to the field virus will lead to a higher incidence of reproductive failure in the short term and to an important increase in the number of infected piglets at birth that will have an inappropriate performance during the lactation and growing stages.

## References

- Corzo *et al.*, 2010 Virus Res., 154: 185-192.
- Linhares *et al.*, 2014 Prev Vet Med, 116; 111-119.

**Table:** Characteristics of a farm that make the implementation of a vaccination programme in the breeders recommendable.

Characteristics of the farm	Vaccination of the breeders
<b>Outbreak situation</b>	Highly recommendable
<b>Farrow-to-finish farms</b>	Recommendable
<b>Unstable farms (i.e. they wean infected piglets)</b>	Recommendable
<b>Farms located in high population density areas</b>	Recommendable
<b>Multiple stages farms</b>	Recommendable if they are unstable or if they are located in high pig density areas
<b>Stable multiple stages farms</b>	It may not be necessary