

Eradication and Regional Control Programs



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Highlights

The trend towards the concentration of production, and the agility regarding national and international communications and trade make that the possibilities of introducing pathogens on the farm are probably higher today in comparison with some years before.

In the PRRS control we face two difficulties: control and eventually eradicate the infection on a farm and avoid the entrance of the pathogen from sources external to the farm.

The basic premises for a regional control programme to have a certain degree of success are, essentially, three: confidence between the participants, transparency of the actions and a fluent communication between all the parties.

Any zonal control programme should start by establishing each farm's status, and to this aim we should use a common diagnosis scheme.

In the second stage, the measures should be focused, compulsorily, on reducing the virus circulation on each farm and on avoiding the entrance of new viruses.

Any control programme that leads to the stabilization of the farms will yield economic benefits if that stabilization is kept for long enough.

In the last years, the idea that the PRRS effective control needs coordinated actions at a scale that exceeds that of the farm, has been gaining importance. When we analyse the facts of the current pig production, it is obvious that its complexity is now greater than some years ago. In Spain, as well as in other countries, the trend is towards the concentration of production, this is, less but bigger farms. On the other hand, our production is scattered, and there are areas with high density of animals and areas with almost no pig production. Besides, we must add that the agility regarding international communications and trade have made the import and export of live-stock or semen something quite frequent. All these circumstances have made that the possibility of introducing pathogens on the farm are probably higher in comparison with some years ago.

If we consider these circumstances and we define them within the PRRS control, it is obvious that we are facing two different problems: a) one consists in controlling, and eventually eradicating the infection on an infected farm; and b) a second one lies in avoiding the entrance of the pathogen from sources external to the farm. Certainly, both goals have a series of factors that can only be solved on the affected farm itself, but the spreading of the virus between farms can only be globally faced in an area.

In this setting, a regional PRRS control plan must define, mainly, its long term goal: control or eradication. From our viewpoint, in Spain and in most of the surrounding countries, the reasonable aim is the control, based essentially on the stabilisation of the farms, because with the existing prevalence figures and our farm densities, the eradication is considered a very distant objective.

The basic three premises for a regional control programme to have any degree of success are: confidence between the participants, transparent actions and a fluent communication between all the parties implied.

If we focus on more specific aspects, once an agreement has been established regarding the information to be shared and how to share it, any regional control programme should start by establishing each farm's status, for which we should use a common diagnosis scheme (number of samples, tests, etc.). This first information will allow us to establish a map of the situation in the region. Ideally, the first stage should be accompanied by a sequencing of the isolates from each farm (this will allow us to see the virus diversity and to understand, at least partially, the virus transmission routes) and by a series of surveys on biosecurity that allow us to establish the individual and collective external and internal biosecurity breaches. This information (with the confidentiality restrictions) must be notified to all the participants in the programme.

This initial stage is the base for the establishment of actions that will continue and that must forcibly entail the taking of measures destined to reduce the virus circulation on each farm and to avoid the entrance of new viruses. This is a controversial step because we can choose from different options that will be affected by the particular circumstances on each farm, company or region. In any case, there is a series of compulsory actions: test the replacements and make sure that they are not infected and that they have immunity, establish protocols for the work routines and the management of the animals, establish protocols for the use of the lorries and their cleaning and disinfection, limit the visits to the farm, and establish a plan for improvements in biosecurity, making sure of the training of the staff. At the same time, we should establish an early diagnosis system of the outbreaks and the characterisation of the new cases. From this point, the evolution on each farm will determine the global evolution of the plan.

We must have in mind that a regional or zonal plan is not only beneficial because of the decrease of the impact of the disease at the present moment, but because it also helps to reduce the new cases and it helps to generate information and knowledge that can significantly contribute to future improvements.

Is the regional control viable? Maybe we should define this question according to the expectations. In our opinion, any control programme that leads to the stabilisation of the farms will yield an economic profit if that stabilisation is kept for long enough. In other words, considering that the eradication is not a feasible goal at that time, the assessment of the programme must be done in financial terms.

The previous regional control plans experiences make reference, basically, to the US, where the county of Stevens was a pioneer. In this county, between 2005 and 2011, the negativization of almost all the farms was accomplished. Later on, the county suffered a series of PRRS outbreaks caused by the introduction of a new virus. In this example, in economic terms, the negativization of most of the farms had a very positive financial impact that was much higher than the cost of some new outbreaks. In other words, the resulting benefits were higher than the cost of not having acted or of having had some new outbreaks.

In conclusion, the regional control is feasible provided that we define the goals in a realistic way, the required premises are met, and we establish a clear action and communication plan. We must clearly define the responsibilities and duties of each participant and who assumes the costs of the plan.

References

- Corzo *et al.* 2010. Virus Res, 154:185-192.