PRRS virus eradication:

By BRAD LEUWERKE and LAURA SCHULZ

ATIONAL eradication of porcine reproductive and respiratory syndrome virus (PRRSv) has been a topic discussed between several swine veterinarians during recent meetings held in Minnesota and Iowa.

When last investigated, losses due to PRRS cost the swine industry an estimated $500 million annually (Neumann et al., 2005). These costs can be ill afforded at any time, let alone now with the current state of the swine industry.

Discussion among veterinary groups has focused on impressive scientific and technological advancements made in the last three to five years that are providing exciting new tools for producers and veterinarians to use in PRRSv eradication. Complete eradication of PRRSv is not a new idea since its discovery nearly 20 years ago, but up until this time, there hasn’t been an organized plan for that eradication.

The swine industry has been able to eradicate other diseases such as pseudorabies, hog cholera, atrophic rhinitis, swine dysentery and mange. This last achievement, along with the recent success of regional PRRSv eradication in small pockets within the U.S., provides optimism that PRRSv will one day be on this list of eradication successes.

It is recognized that a concerted and coordinated effort by all producers and veterinarians is necessary for PRRSv eradication from the U.S. swine population to happen. Eradication of PRRSv will require the prevention of new virus breaks in individual farms and regions, a thorough assessment of all biosecurity risks that herds possess, access to continually updated databases providing regional PRRSv status and new virus diagnostic and monitoring techniques.

As an industry, with practices including herd closure and all-in/all-out pig flow, we have become very good at eliminating PRRSv from populations of pigs, but as we create these negative groups of animals, the challenge becomes preventing virus re-entry into these herds. Reducing the frequency with which naïve or stable populations become re-infected will remain the biggest challenge to successful eradication of this virus.

One area of technology that the Swine Vet Center has been intensely involved in is the filtration of barns to prevent aerosol entry of PRRSv into facilities. Barn filtration has already shown its value as the number of sow farms and boar studs that have adopted this technology have increased and the frequency of PRRS breaks has decreased.

As filtering technology has advanced and the costs to filter a barn have decreased, estimates within several farms have shown that the prevention of only one or two PRRS breaks over a 10 year period will more than pay for the installation and maintenance of the filtration system. Filtration may not be a necessity in areas where the density of farms and the frequency of virus introduction is low, but as eradication moves into regions of increasing swine density, filtration will be one of the most important components of achieving eventual success.

Filtration of barns can only be successful once producers and veterinarians can be assured that a farm is at low risk for all other additional routes of virus entry. The PRRS risk-assessment tool, originally developed by Boehringer Ingelheim Vetmedica Inc., has been an excellent means for trained personnel to help producers systematically understand what their risks are for new virus entry into a farm.

The risk assessment process requires the producer and/or veterinarian to answer a series of questions regarding each site’s internal and external risks as they relate to PRRSv introduction. Upon completion of the survey, a score is given to the site. This score is a reflection of the site’s risk of PRRSv introduction, which helps a producer determine the necessary steps needed to reduce the risk of virus entry.

Regional risks

Similar to the importance of understanding the risk of new PRRSv entry into a farm or site, the awareness of regional risks of PRRSv entry will be an important part of eventual PRRSv eradication. Regional success has already been demonstrated in parts of the country where local producers, practitioners and university swine veterinarians are working together to create, maintain and advance regions of PRRSv-negative status.

Currently, additional regional meetings are being planned in Minnesota and other states to expand PRRSv-negative areas. The success of these regional eradication projects will require complete producer support, including how resident herds maintain PRRSv-negative status as well as how choices on where pigs flow in and out of an area are made.

Surveillance is another important component of PRRSv eradication. Technological advancements that allow producers and veterinarians to monitor large populations of pigs using methods that are simple for producers to implement within their farms are currently being evaluated and validated.

Key Points
- A concerted effort by all producers and veterinarians is necessary for PRRSv eradication.
- Reducing the frequency with which stable populations become re-infected remains the biggest challenge.
- Air filtration will be one of the most important components of success.

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