

UPDATE ON MYCOPLASMA RESEARCH AT THE SDEC

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Alvaro Ruiz just finished his PhD program, which dealt mainly with transmission of *M. hyopneumoniae* and the effects of vaccination. In summary, his results showed that:

- There is a genetic effect on colonization, where some particular boar lines may generate offspring which are colonized less readily
- Sow infection is quite widespread and does not seem to be parity-related (at least up to 6 parities). These results are from nasal swabs tested by N-PCR. These are different from classically held view that sow colonization is parity-dependent. There are some explanations for this discrepancy:
 - N-PCR could be picking up signals from dead or non-attaching bacteria (not very likely in mature animals that have presumably been infected for some time)
 - Sows are infected, but shedding levels are low and do not achieve piglet colonization (probable)
- Sow vaccination significantly reduces the prevalence of colonized piglets at weaning, which could be used in controlling the disease in strict AI/AO offsite systems
- Nursery pig vaccination (without sow vaccination) significantly reduced the prevalence of colonized pigs at 20 weeks of age, suggesting that vaccination does have an effect (although small) on colonization
- Sow vaccination resulted in robust seroconversion of the sows and in efficient transfer of maternal antibodies to piglets, which could be detected up to 7 weeks of age
- Growing pig vaccination also resulted in solid seroconversion, especially with a two-dose regime. One shot vaccination had a delayed seroconversion dynamic, but pigs had similar titers to those receiving two shots at the end of finishing
- Likewise, the double dose reduced colonization prevalence more efficiently than the single dose, although differences were not significant

As a conclusion of all this, I believe that 3-site and especially Multisite systems, will benefit from interventions during lactation that target a reduction in piglet colonization. These can be sow vaccination, treatment of sows with antibiotics or both. However, sow vaccination pretty much preempts us from vaccinating growing pigs, so that this is a decision that must be taken carefully, on a case-by-case approach

Mycoplasma transmission between farms

While doing this project, the researchers also investigated the possible transmission of Mycoplasma between farms by contaminated personnel. A group of researchers visited a Mycoplasma infected sow herd every 15 days for a period of 150 days. They took a shower into the farm and changed their clothes to disposable coveralls and plastic booties. During the visit they interacted extensively with infected piglets and sows, taking blood and nasal swab samples. They then took another shower and changed into their street clothes, traveled 60 miles to the other farm, changed into normal cloth coveralls and rubber boots and entered without an additional shower. This farm was housing 150

naïve gilts, which were Mycoplasma negative. The researchers again interacted considerably with these animals.

Blood samples and nasal swabs from the naive farm remained negative to Mycoplasma throughout the experiment, up to 180 days after first contact. These results demonstrate that transmission between farms by personnel is not a major concern, as long as certain minimal precautions (showering between farms, change of clothing) are taken. This suggests that down times between visits are probably not needed, at least in the case of Mycoplasma.