

PORK SAFETY

Title: Analysis of Salmonella Pre-Harvest Control Strategies – NPB #11-082

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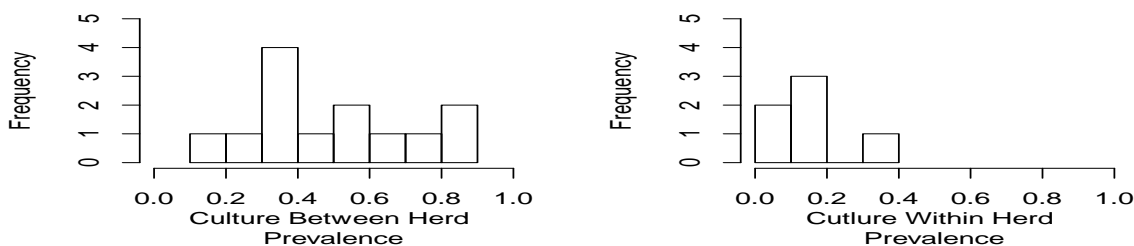
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Scientific Abstract:

Summary. The purpose of this project was to provide a comprehensive description of the efficacy of mandated control programs for pre-harvest *Salmonella* spp. used by major pork exporting/importing nations. Such information enables the industry to be aware of the approaches used that may affected trade and food safety.

The 1st and 2nd aspects of the project were to describe mandated *Salmonella* spp. specific pre-harvest control approaches in major pork exporting/importing countries. We searched grey and peer reviewed literature for reported programs and contacted individuals in these countries. The information was difficult to find and verify. Our conclusion is that no countries have mandatory *Salmonella* specific pre-harvest control programs except Denmark. Denmark requires mandatory declaration of *Salmonella* spp. status prior to sale and testing of purchased feeds for *Salmonella*.

The 3rd aspect of the project was to collate estimates of the prevalence of *Salmonella* spp. pre-harvest in the United States. We used data from two prior reviews and an updated review of the literature. We collated estimates of the prevalence of *Salmonella* positive herds and the within herd prevalence(Figure 1.)



The 4th aspect of the project was to summarize the efficacy of mandated programs. The Danes suggests their combined pre-harvest and post-harvest approach is effective but the importance of the pre-harvest component is not clear¹⁻⁴. An assessment of the Belgium voluntary program which focused unilaterally on primary production concluded *“The evaluation of this Salmonella action plan demonstrated that it had only little effect*

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on the level of Salmonella infection in pigs.”⁵ The European Food Safety Commission has published 2 cost benefit assessments of pre-harvest control of *Salmonella spp.* in finishers⁶ and breeding’s⁷ and concluded “*On the basis of current scientific advice and the experience of Member States, it is not possible at this time to demonstrate cost-beneficial interventions to reduce Salmonella infections at EU level in either breeding pigs or slaughter pigs, or in combinations of both herds. Sensitivity analyses indicate that positive cost-benefits can be found only in extreme scenarios.*”⁷

The 5th aspect of the project was to summarize the findings about the effect of pre-harvest interventions- antibiotics, commercially available *S. choleraesuis* vaccines and feed management. We used previously published reviews of Salmonella pre-harvest interventions and the GRADE process to assess the efficacy⁸. The GRADE process uses 4 factors to reach a conclusion for adoption of an intervention- the quality of the evidence, the cost benefit, the balance of benefits and harms and the balance of values and preferences. The panel concluded it was unlikely that any intervention assessed would be strongly recommended for adoption based either on lack of evidence for an effect, or very low cost versus benefit (i.e. would cost much more than the benefit)