BioSecure

Enhanced and cost-effective biosecurity in livestock production

UNIVERSITY OF COPENHAGEN

PRACTICE ABSTRACT # 6

Biosecurity assessment framework targeting introduction and establishment of *Salmonella* Dublin in dairy farms

As the number of cows in cattle farm increases, so does the importance of protecting them from diseases. This is because larger herds usually mean more exposures to infections for cows coming into contact with each other or with purchased animals or other outside sources of infection.

Bacteria such as *Salmonella* Dublin, which mainly spread via manure and can survive in the environment for a long time, pose an important risk. They can easily spread indirectly through, for instance, contaminated equipment or machinery, or on contaminated clothes and boots of employees and visitors. If biosecurity is not managed properly, the bacteria can establish themselves within the farm and start spreading between animals and barn sections.

To help farmers assess and reduce the risk of introduction and establishment of *Salmonella* Dublin, a Danish PhD student has, together with his supervisors and colleagues, developed a method with an electronic tool that can be used to assess semi-quantitatively (on a scale from 0 to 100) how well biosecurity measures are implemented on dairy farms. This involves visiting farms and observing the farm environment in 12 specific and weighted sections considered particularly important regarding the potential risks of *Salmonella* Dublin, as well as talking to farmers to understand their practices in more detail.

The framework is called 'BAF-SD', and it can both be used as an advisory tool, and as a tool to collect data systematically in field studies on risk factors in dairy farming. Initial testing showed that different assessors got moderately consistent biosecurity scores, even if they had different levels of biosecurity knowledge. The development of the framework is described in a peer-reviewed scientific paper (Petersen et al. 2023: https://doi.org/10.3390/ani13162649).

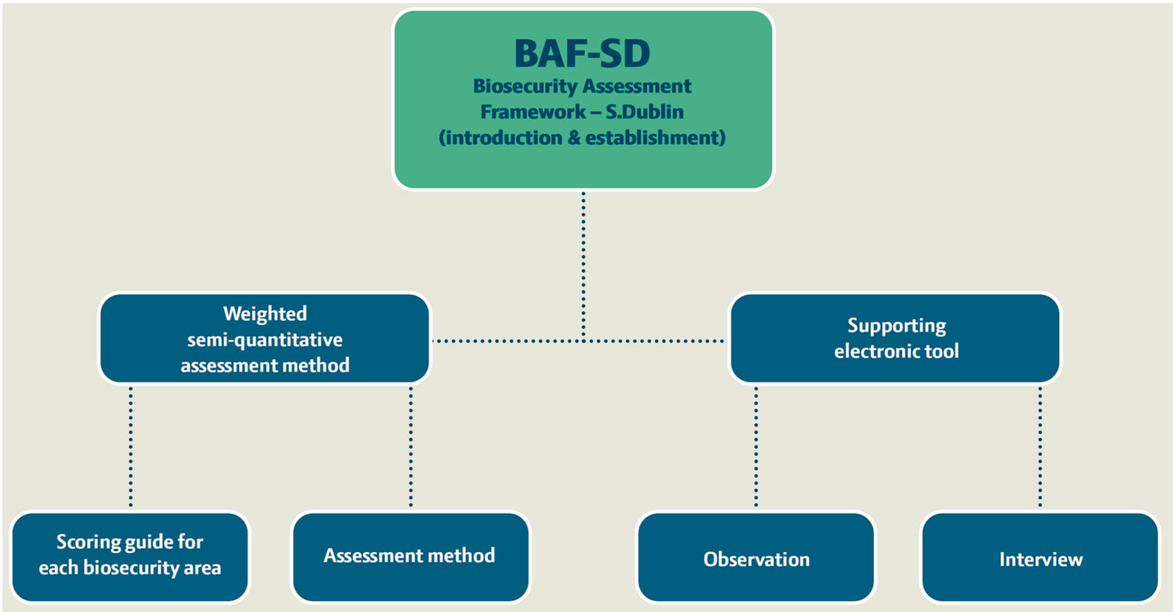

Figure 1 from Petersen et al., 2023: https://doi.org/10.3390/ani13162649

"Semi-Quantitative Biosecurity Assessment Framework Targeting Prevention of the Introduction and Establishment of *Salmonella* Dublin in Dairy Cattle Herds" by Petersen et al. Animals 2023, 13(16), 2649

Link to open access paper:
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