



Biosecurity practices in cattle farming: level of implementation, constraints and weaknesses

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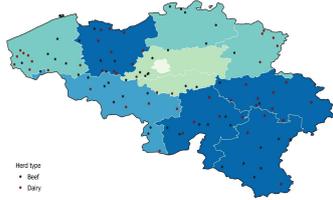
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Introduction:

Biosecurity (BS) is a strategic and integrated approach including the measures preventing the introduction and spread of diseases. In cattle holdings, farmers are the first actors of BS but the level of implementation of biosecurity measures (BSM) is generally low compared to the pig and poultry industries. This study aims at assessing the level of application of BSM preventing the introduction of diseases in dairy and beef herds, the main reasons of non-implementation and the eventual correlation between the importance farmers give to BS and their level of implementation.

Materials and methods:



Survey: Randomised and stratified survey with face-to-face interviews in 100 farms from December 2016 to April 2017 (25 dairy farms and 25 beef farms counting at least 20 cattle heads in both Flanders and Wallonia).

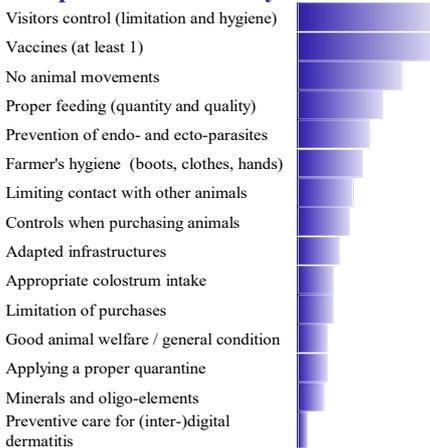
Questionnaire to collect: general profile information, list of BSM perceived as the most important, level of implementation of the different BSM and main reasons of their non implementation.

Analysis methods:

1- Descriptive analysis and Chi square test performed in StataSE14® to identify significant differences by herd types in terms of practices; 2- Assessing the correlation between the importance score of each BSM and its level of implementation by a Spearman's rank correlation test in Stata14®

Results:

1. Farmers' perception: most important biosecurity measures



3. Correlation between importance score and implementation level (N=25)

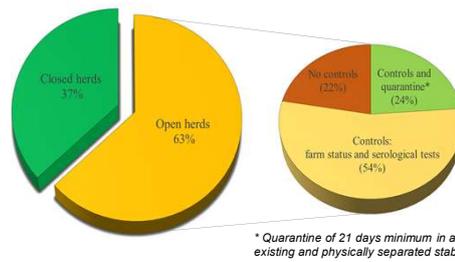
Significant and positive correlation between the BSM importance score and its implementation level ($p= 0.03$ and Spearman's $\rho = 0.43$)

4. Free comments received from more than 5% of cattle holders:

- Need to preserve a natural immunity
- Importance of proper feeding and good animal welfare
- Low prices of animal products do not encourage investments
- No control on birds and wildlife contacts

2. Farmers' practices: main measures to prevent introduction of diseases in the farm

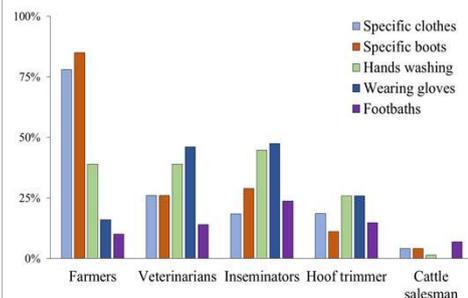
2.1. Control of animal movements



- Closed herd more frequent in dairy farms (50%) compare to beef farms (24%)
- Test at purchase generally limited to 4 diseases: IBR, BVD, neosporosis and paratuberculosis
- No measures against indirect transmission between the quarantine and the other stables
- Main reasons of not controlling the risks related to animal movements: feasibility and space not allowing a proper quarantine (38%), trusting the seller (19%) and perception of its importance (12%)

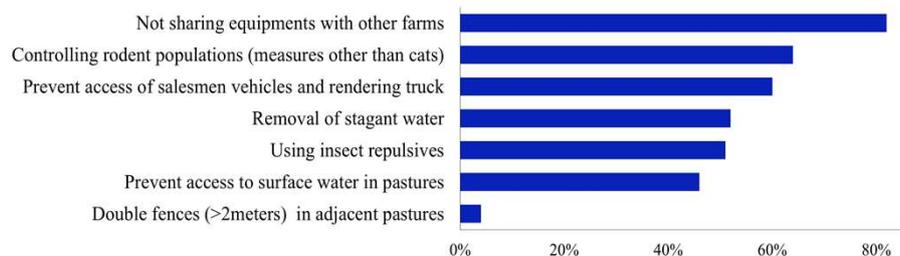
2.2. Control of visitors

Percentage of farmers and visitors implementing hygiene measures in the farm (N=100)



- Most farmers are well aware of the risk related to professional visitors
- Solution to prevent access of cattle salesmen to stables: separated area for calves to sell or a loading area
- Farmers using specific clothes and boots more frequently in dairy herds
- Main reasons of not imposing hygienic measures to visitors: trust and not feeling in position to do so.
- Percentage of farms having footbaths and hands/boot washing facilities for visitor reaches 17% and 36%, respectively.

2.3. Other control measures



Discussion and conclusions:

The level of implementation of the different BSM is generally low. The cost itself does not appear as a barrier (as long as it generates benefits). The key factors in the decision making process seems to be their : importance, efficiency, and feasibility. Diseases introduction through fomites is not controlled in any of the farms visited and should be improved. For the BSM linked to visitors and re-entering animals, most farmers tend to rely on the professionalism of their visitors and event organizers. The level of BSM application by these actors should therefore be investigated to better assess the risk. A specific study targeting farmers' perception and decision making processes would be useful to better understand and promote BSM implementation at farm level. Evidence-based researches aiming at demonstrating the different BSM efficiency and usefulness are also needed in order to change some farmers negative perceptions.