

Biosecurity in dairy farms

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INTRODUCTION AND OBJECTIVES

Modern veterinary medicine and disease prevention at the herd level is increasingly important (Lin et al., 2003; DERKS et al., 2013) and the application of biosecurity measures are of paramount importance to reduce the spread of diseases.

Preventive veterinary medicine involves the implementation of biosecurity measures focused in reducing the risk of entrance of pathogens (i.e. external biosecurity) and dissemination of existing ones (i.e. internal biosecurity) (Sarrazin et al., 2014; Villaroel et al., 2007; Laan et al., 2013).

The insufficient attention for the application of biosecurity measures could have a significant negative impact on animal health (Faust et al., 2001).

This study involves the assessment of external and internal biosecurity in dairy farms in order to detect critical points and recommend measures to reduce the risk of entrance of pathogens in farms as well as their internal circulation.

MATERIAL AND METHODS

The questionnaire designed for this study consisted of four parts:

- General:** Farms were categorized in four groups according to the total census: <300, 300-500, 500-1000 and > 1000 animals.
- External Biosecurity:** measures related with the introduction of animals in the farm, location, water and food supply, and staff and vehicles (i.e. animals, private, dead disposal, etc).
- Internal biosecurity:** measures related with hygiene, disinfection and handling.
- Personal opinion:** Grade personal perception about their level of compliance with the biosecurity measures and a rank with the most critical biosecurity measures.

The questionnaire was distributed in ten farms around the province of Lleida (9) and Barcelona (1).

The results were analyzed using Microsoft Excel 2011 pivot tables. Biosecurity measures that were not applied in the farm were rated with one point and 0 otherwise. Farms and measures were summed up and scaled in the 0-10 scale. Farms with a rate of 10/10 would be a disaster farm (i.e. no biosecurity measures applied) and 0 would be an exemplary farm (i.e. all biosecurity measures applied).

CONCLUSIONS

Biosecurity measures that have been breached:

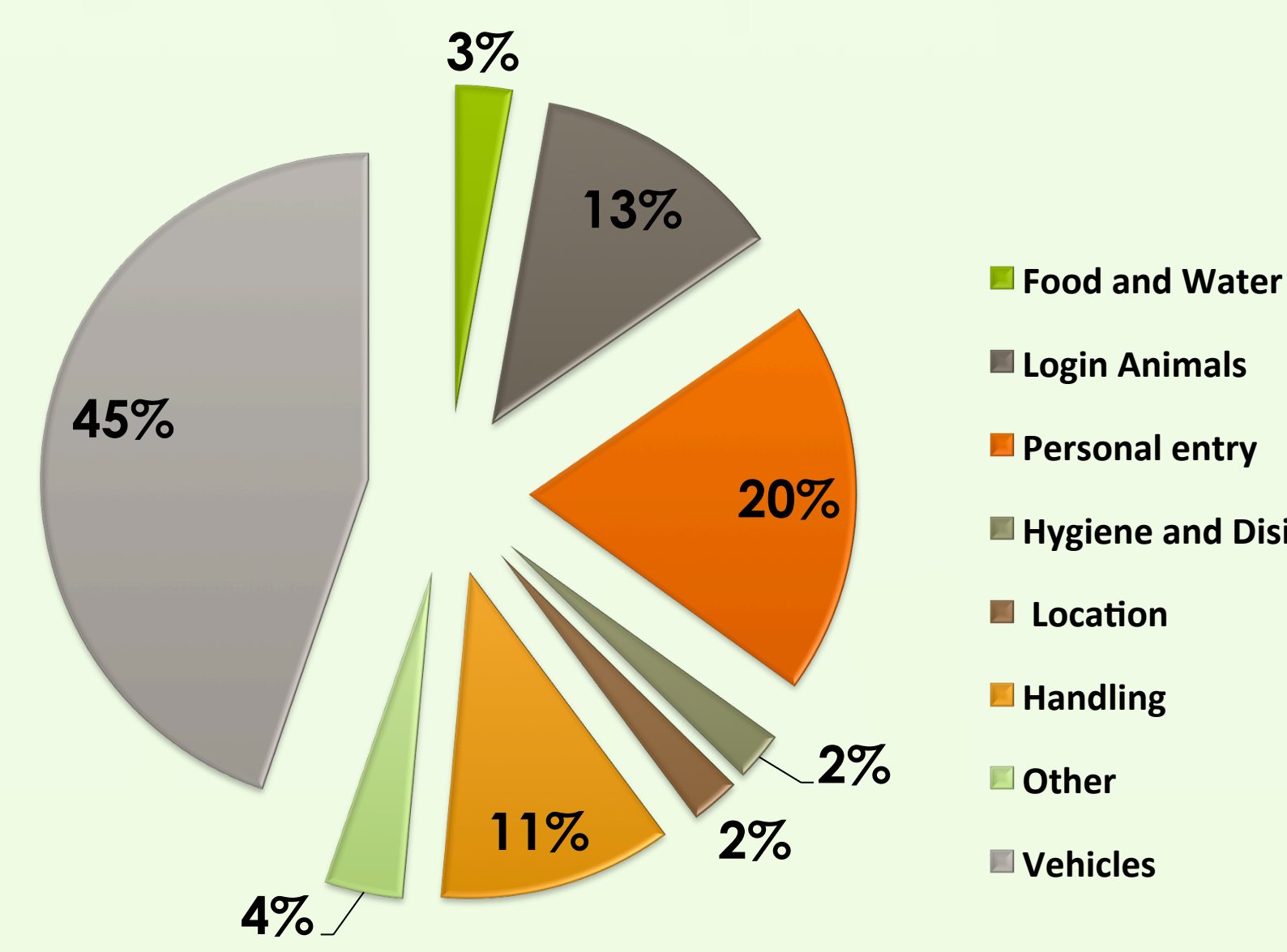
- ✧ Vehicle entrance, Staff, Animals.
- ✧ Management.

➤ It is recommended to:

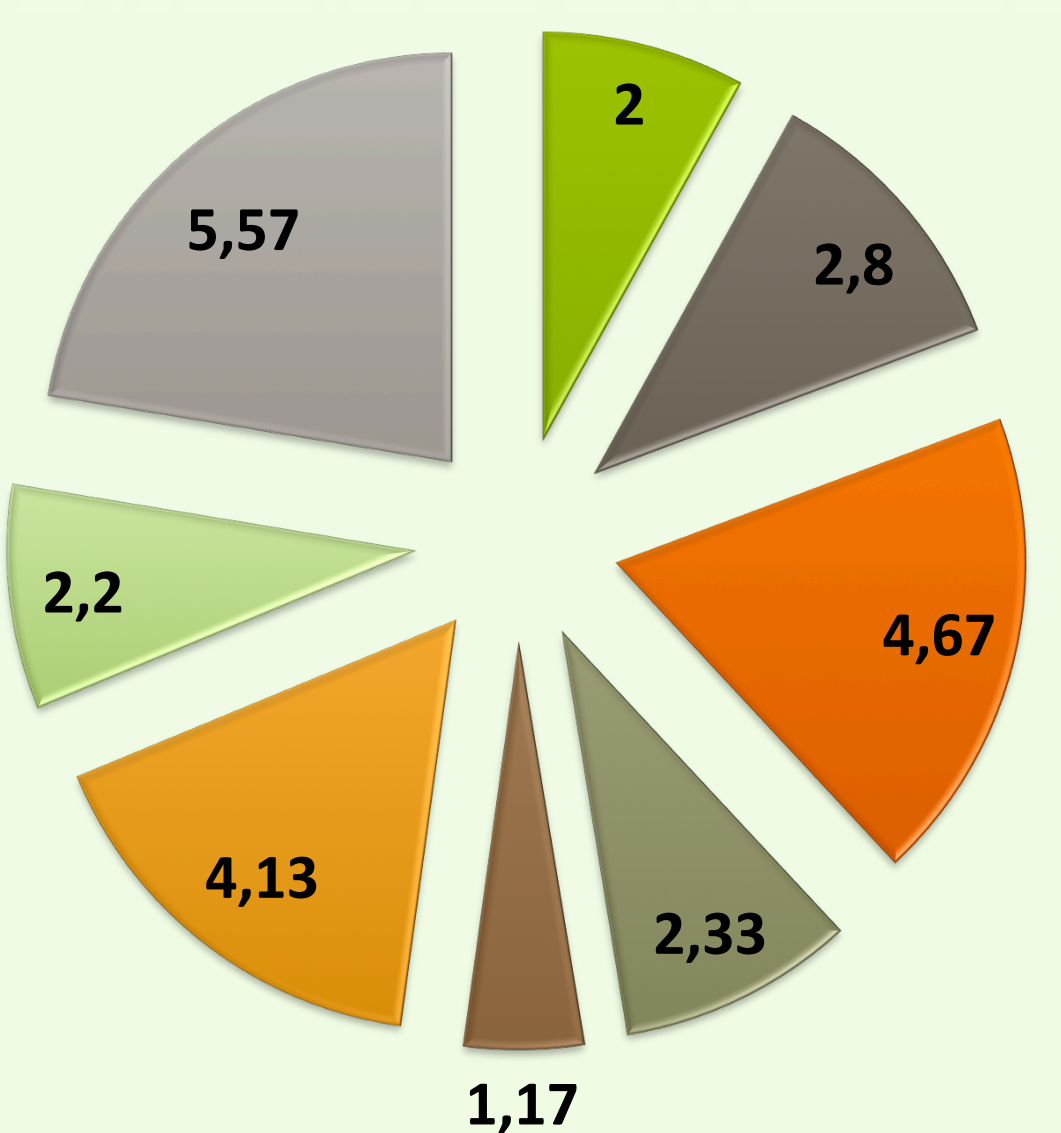
- ✓ Improve staff training
- ✓ Avoid multi species farms
- ✓ Establish a biosecurity program
- ✓ Quarantine
- ✓ Tighter control of staff that comes in contact with animals
- ✓ Use exclusive clothes and boots for each farm
- ✓ Complete fence around the farm
- ✓ Reduce the entry of vehicles in operation (loading and unloading)
- ✓ Establish a monitoring of diseases

RESULTS

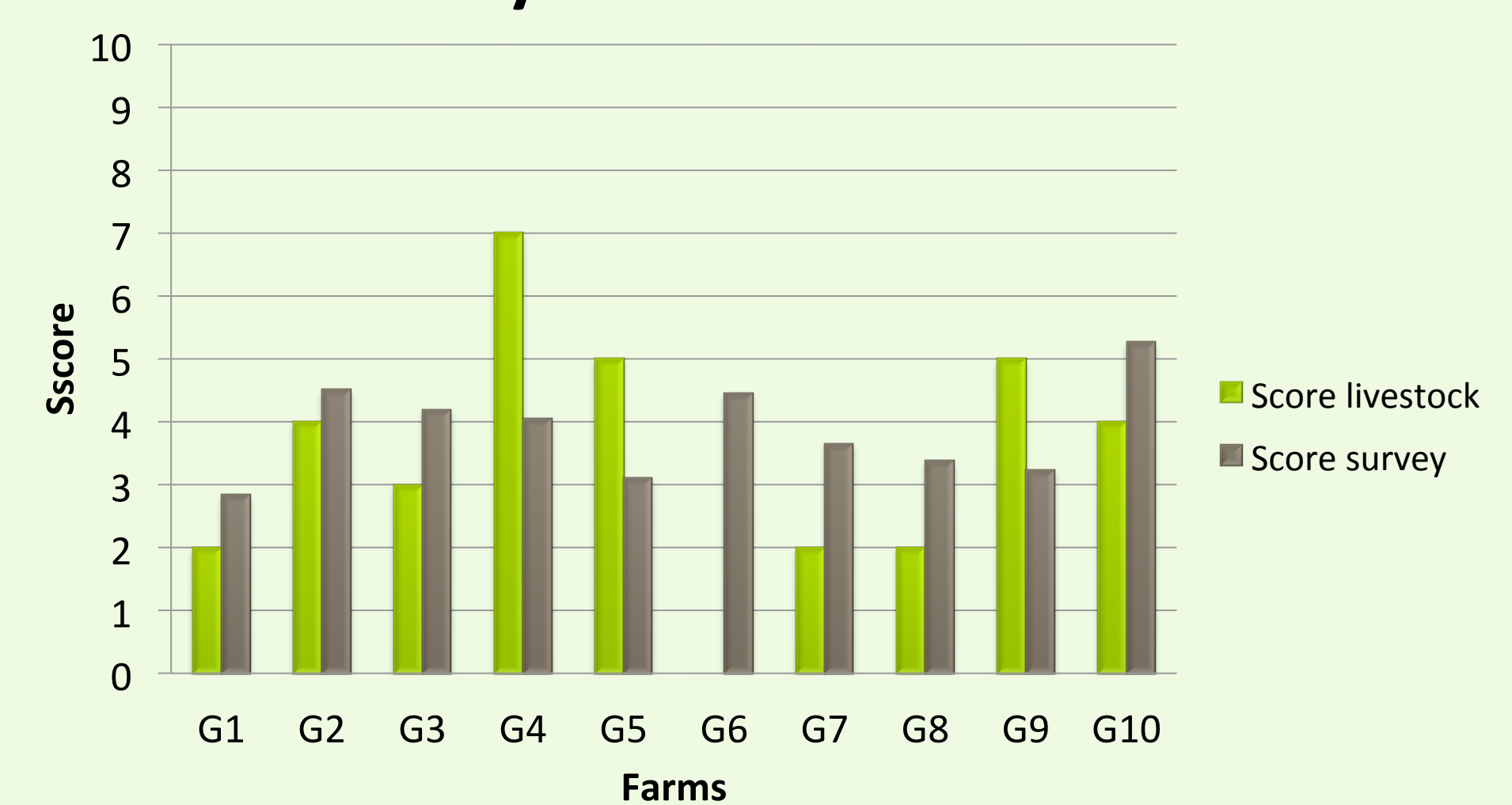
Level of breach of biosecurity measures



Score group on breach of biosecurity measures



Score survey vs. score livestock



Frequency	BSG most important measures for farmers
8	Footbath / arc disinfecting / cleaning and disinfection of vehicles
7	Perimeter of the farm
6	Control input animals
5	Personal hygiene and material used
5	Control of vehicles entering from other farms
5	Control people entering from other farms
4	Control rodents, cats, dogs and pigeons
2	Avoid contact with animals or external assistance to livestock competitions
2	Proper nutrition and quality
2	Proper density
1	Quarantine
1	Dock loading and unloading
1	Proper cleaning and disinfection Truss (milking routine)
1	Disease control in operation

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