

## Introduction

Biosecurity on farms is considered essential to prevent the entry and/or transmission of disease, which could negatively affect production.

Biosecurity is defined “as the implementation of measures that reduce the risk of disease agents being introduced and spread” (Bottoms, K. et al, 2009).

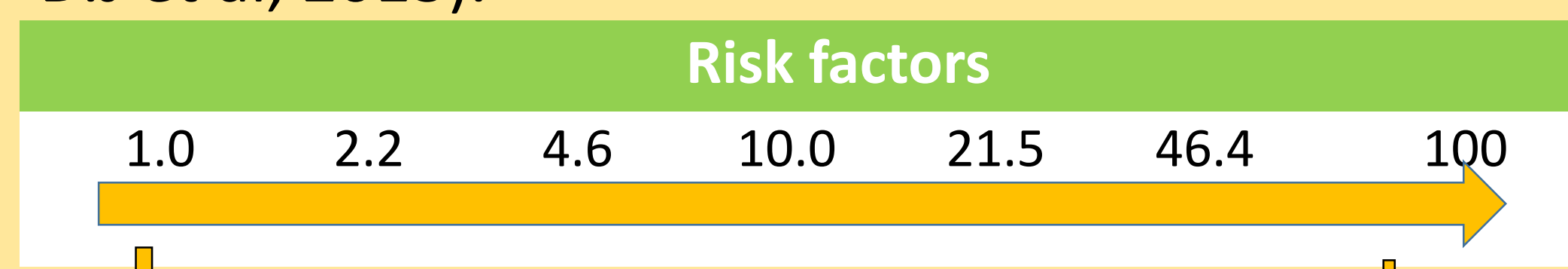
**The aim of this work is to review the different tools available for the assessment of biosecurity in farms and see if they fit correctly in the different productions in the world.**



### Production Animal Disease Risk Assessment Program (P.A.D.R.A.P).

- Risk Scoring system based on Expert Opinion (EO).

This tool was developed by a group composed of 21 veterinarians and research. Questions about risk factors for the occurrence of clinical PRRS outbreaks and possible responses were identified by the group. The Delphi survey was used to establish the scores for each question (Holtkamp, D.J et al, 2013).



- Risk Scoring System based on statistical analysis.

A multivariable statistical analysis was performed and from the analysis observed that a number of variables were considered significant and could not be eliminated, however other variables could be eliminated (Holtkamp, D.J et al, 2012). The results obtained allowed farms to be classified as low, medium and/or high risk according to the risk of an PRRS outbreak.

### Delphi survey

The questionnaire is answered individually and anonymously without any discussion within the group.



Answers are then analysed and the results presented



Discussion



The questionnaire is handed out again and the experts can take the opportunity to change their answers given in the first questionnaire



### Biocheck.Ugent.

It was designed by a group of experts. The system is constructed in such a way that it can be used on all herd types.

A survey was used for the development of this tool and a “weight” was attributed to each question.

(Laanen et al, 2013).

The sum of the scores for each sub-categories were totally added to sum-up a score between 0 and 100.

| Sub-category  | Weight |
|---|--------|
| External biosecurity                                  |        |
| Purchase of animals/ semen                            | 24     |
| Transport of animals, removal of manure/ dead animals | 23     |
| Feed, water and equipment supply                      | 15     |
| Personnel and visitors                                | 17     |
| Vermin/bird control                                   | 11     |
| Environment and region                                | 10     |
| Internal biosecurity                                  |        |
| Disease management                                    | 10     |
| Farrowing and suckling period                         | 14     |
| Nursery unit management                               | 14     |
| Fattening unit management                             | 14     |
| Measures between compartments and use of equipment    | 28     |
| Cleaning and disinfection                             | 20     |
| Overall biosecurity score                             |        |

(Laanen et al, 2013)

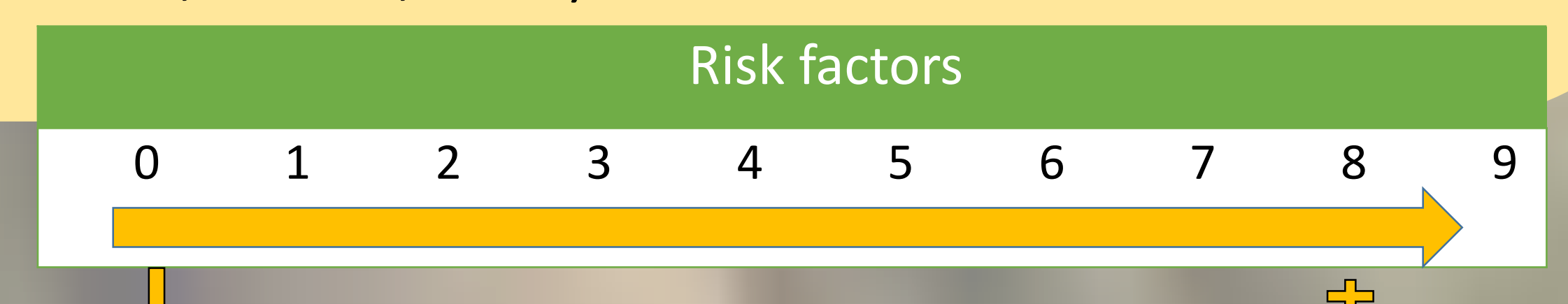
### CONPRRS

#### ConPRRS. Scientific platform and technical support for local and regional PRRS control.

This tool is currently under development. It is aimed to qualitatively assess the risk of external input and re-circulation of PRRS virus on farms. In the meantime, it allows to establish how each farm stands in relation to others.

The scored is based on two aspects: Firstly, on the initial risk and secondly on the risk reduction brought by the different biosecurity measures adopted.

Both aspects were scored, through a survey, by a group of PRRS veterinarian experts. Nine risk points were assigned based on the literature (Dufour, B. et al, 2011).



### Biosecurity plan in swine. Departament d'Agricultura, Ramaderia i Pesca (DARP).

In 2015 DARP launched a Biosecurity plan for swine farms. This tool was designed for all swine diseases, not just for PRRS.

The plan consists of:

1. Program.
2. Survey.
3. Protocol.
4. Control plan.

| Final Scoring | Frequency      |
|---------------|----------------|
| 80-100        | 1 time/2 years |
| 50-79         | 1 time/year    |
| <50           | 2 times/year   |

(DARP, 2014)

## Conclusions

**There are currently a few tools for the biosecurity assessment in farms. These tools rely on qualitative methods, which do not allow to perform a quantitative measure of biosecurity.**