

DEVELOPMENT OF A WELFARE ASSESSMENT SYSTEM ON FARM AND AT SLAUGHTERHOUSE IN PIGS

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GENERAL INTRODUCTION



MONITORING SYSTEM FOR GROWING PIGS AT FARM

NO european standard for
Animal Welfare

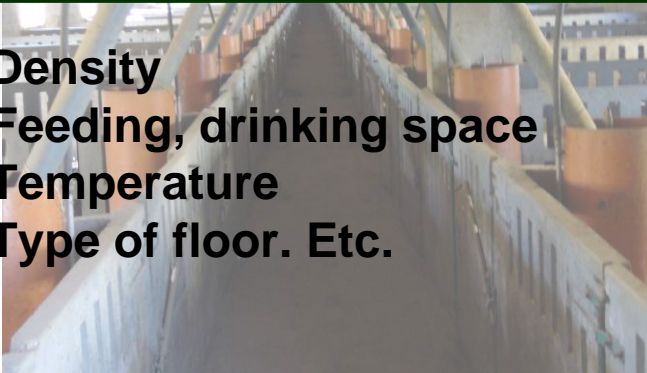
Need for a Scientifically based system

MONITORING SYSTEM FOR PIGS AT SLAUGHTER

MEASURING ANIMAL WELFARE

ENVIRONMENTAL- BASED PARAMETERS

- Density
- Feeding, drinking space
- Temperature
- Type of floor. Etc.



MANAGEMENT-BASED PARAMETERS

- Euthanasia criteria
- Castration procedures
- Hygiene
- Management of sick animals. Etc.



ANIMAL- BASED PARAMETERS

- Wounds
- Tail biting
- Condition Condition
- Social behaviours
- Bursitis.
- Panting; Shivering. Etc.



INTEGRATION OF PARAMETERS IN AN OVERALL ASSESSMENT

4 PRINCIPLES

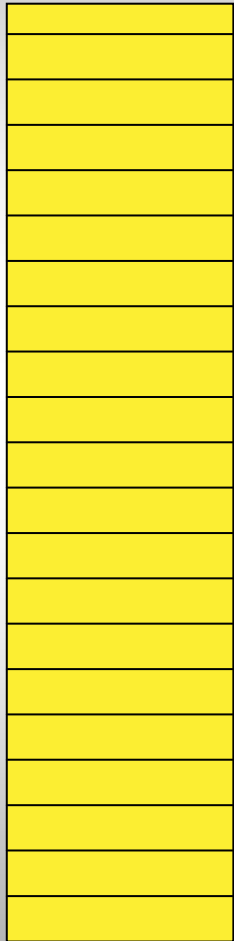
12 CRITERIA

PARAMETERS

Good Feeding	1. Absence of prolonged hunger	Body condition score
Good Housing	2. Absence of prolonged thirst	Water supply
	3. Comfort around resting	Bursities, Manure on the body
	4. Thermal Comfort	Shivering, Panting, Huddling Temperature
Good Health	5. Ease of movement	Space allowance
	6. Absence of injuries	Wounds, Lameness, Tail biting
	7. Absence of disease	Respiratory and enteric problems Skin condition, Hernias Sick animals, Criteria of euthanasia
	8. Absence of pain induced by management procedures	Castration Tail docking
Appropriate Behaviour	9. Expression of social behaviours	Positive & Negative social behaviours
	10. Expression of other behaviours	Exploratory Behaviour
	11. Good Human- Animal relationship	Human-Animal relationship test
	12. Positive emotional state	Qualitative Behaviour Assessment

SELECTION OF PARAMETERS

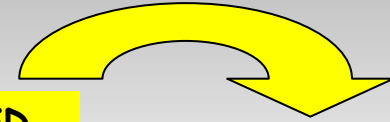
**POOL of
PARAMETERS**



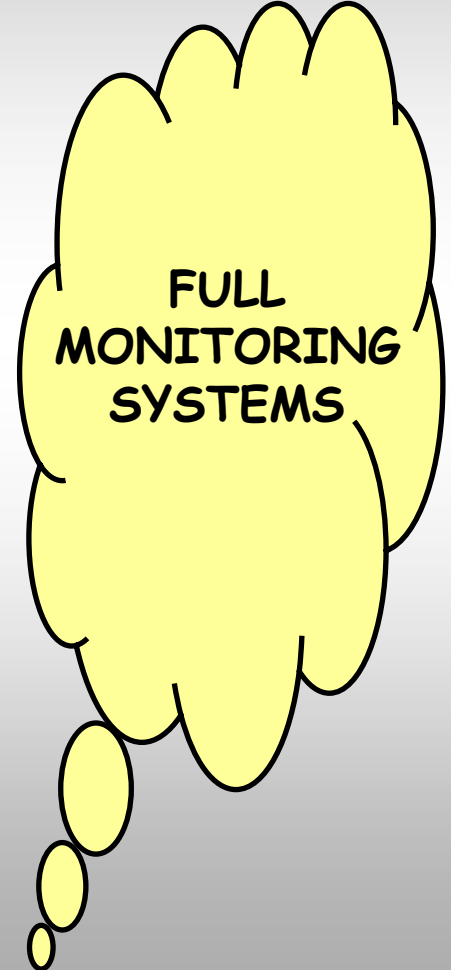
**VALIDITY
REPEATIBILITY
FEASIBILITY**



**SELECTED
PARAMETERS**



**FULL
MONITORING
SYSTEMS**



GENERAL OBJECTIVE

To develop a standardized protocol for the assessment of pig welfare on farm and at slaughterhouse.

SPECIFIC OBJECTIVES

To evaluate the feasibility of the assessment method on different Spanish pig farms and slaughterhouses.

To test the protocol in different housing systems in Spain.

2 FULL MONITORING SYSTEMS

ON FARM

**Time required
5 – 7h**

AT SLAUGHTER

30 Intensive pig farms

11 Extensive Iberian pig farms

10 Slaughterhouses

I

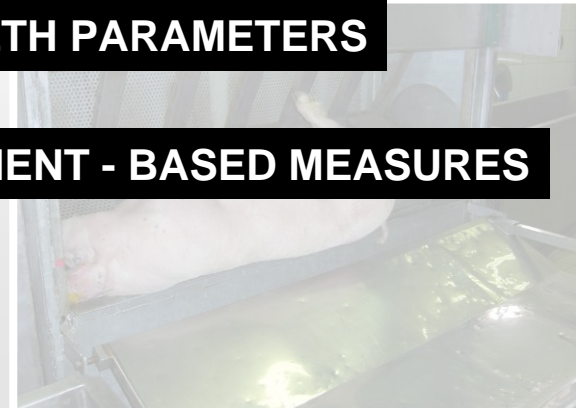
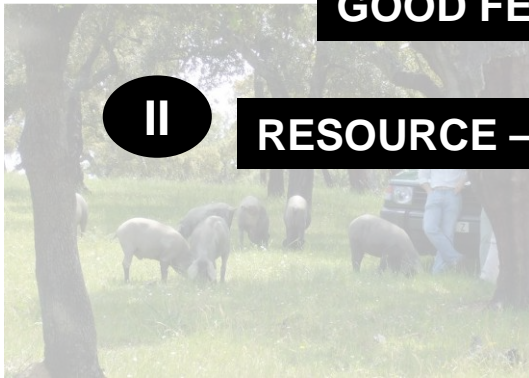
ANIMAL-BASED MEASURES

BEHAVIOUR PARAMETERS

GOOD FEEDING, HOUSING, HEALTH PARAMETERS

II

RESOURCE – BASED AND MANAGEMENT - BASED MEASURES



MEASURING GOOD FEEDING // HOUSING // HEALTH

ON FARM

INDIVIDUAL Level

PEN Level



3 POINT SCALE

0

Good welfare

1

2

Poor welfare



x 10 pens / farm

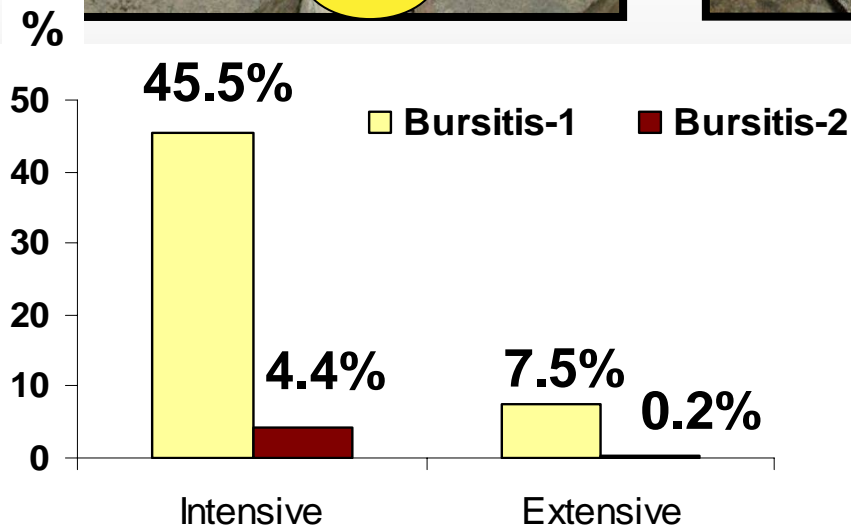
Or > 40% pigs within a herd

ON FARM

MEASURING GOOD FEEDING // HOUSING // HEALTH

Criteria 3. COMFORT AROUND RESTING

EXAMPLE 1: BURSITIS



Preliminary results risk factors

Age ($p < 0.0001$)
Density ($p < 0.05$)
Type of floor ($p < 0.0001$)

ON FARM

MEASURING BEHAVIOURS

Criteria 9. EXPRESSION OF SOCIAL BEHAVIOUR

SCAN SAMPLING OF BEHAVIOURS

ACTIVE pigs

SOCIAL behaviours

“POSITIVE”

NEGATIVE

Expression of
OTHER behaviours

EXPLORATION → Pen
→ Material
“OTHERS”



Start

Waiting

1

2

3

4

5



10 min

2'30''

2'30''

2'30''

2'30''

2'30''

3 points in a
farm

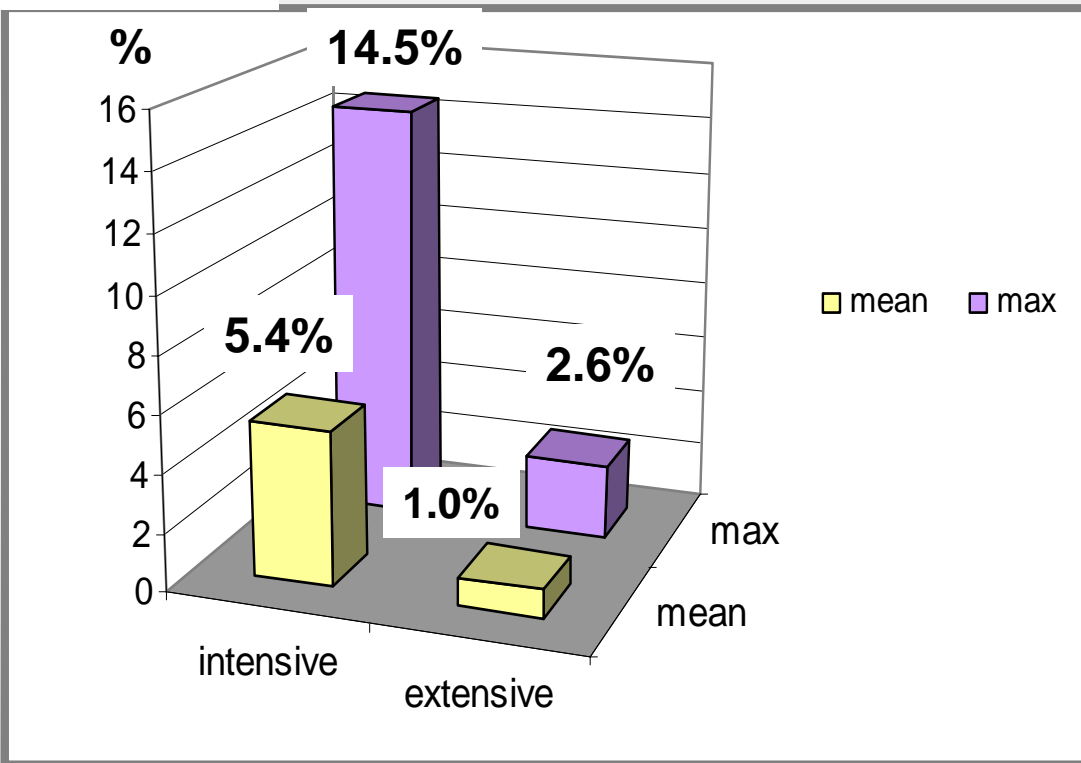
ON FARM

MEASURING BEHAVIOURS

Criteria 9. EXPRESSION OF SOCIAL BEHAVIOUR

NEGATIVE SOCIAL BEHAVIOURS

Occurrence



Intensive pigs show more negative behaviours than extensive Iberian pigs ($p < 0.0001$)

ON FARM

MEASURING BEHAVIOURS

Criteria 9. EXPRESSION OF SOCIAL BEHAVIOUR

Selection → Differences between breeds

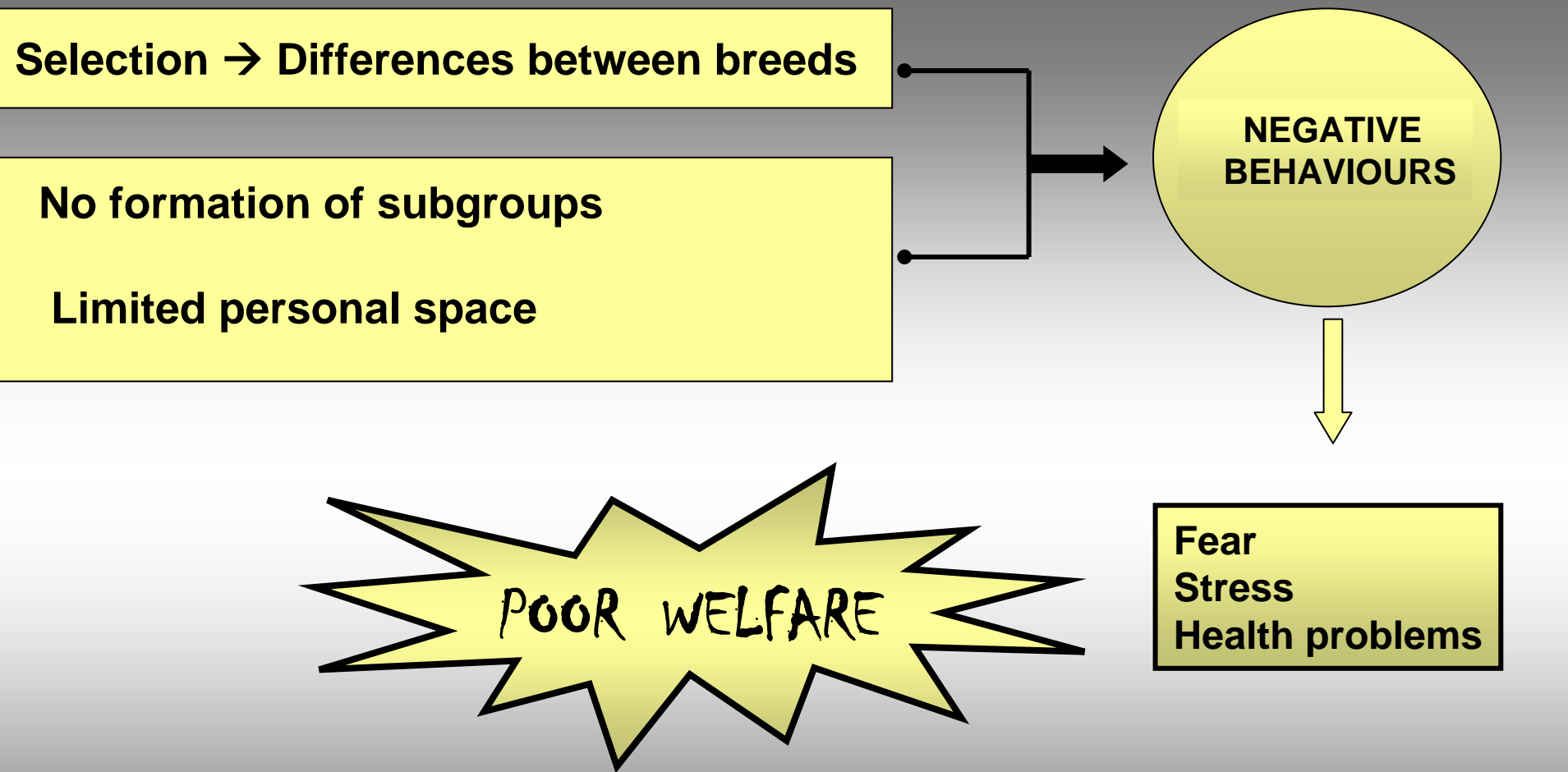
No formation of subgroups

Limited personal space

NEGATIVE
BEHAVIOURS

POOR WELFARE

Fear
Stress
Health problems



AT SLAUGHTER

MEASURE	SAMPLE SIZE	PLACE	ESTIMATED TIME
Slipping	2 lorries	Unloading	1.0 hours
Falling			
Reluctant to move	2 lorries	Unloading	1.0 hours
Turning back			
Dead animals	6 lorries	Unloading/from unloading to lairage	
Sick animals			
Thermal comfort			
Comfort around resting			
Lameness	2 lorries	From unloading to lairage	1.0 hours
Pen facilities	8 pens	Lairage	0.75 hours
Huddling			
Shivering			
Panting			
High pitched vocalisations	12 minutes	From lairage to stunning	0.25 hours
Corneal reflex	60 individuals	Stunning area	0.50 hours
Rhythm of breathing			
Righting reflex			
Vocalisations			
Fresh skin lesions	60 samples	after slaughter	1.0 hours
Penumonia			
Pleuropneumonia			
Pericarditis			
White spots in liver			

UNLOADING

AT SLAUGHTER

Criteria 5. EASE OF MOVEMENT

SLIPPING AND FALLING



UNLOADING

AT SLAUGHTER

Criteria 5. ABSENCE OF GENERAL FEAR

RELUCTANT TO MOVE



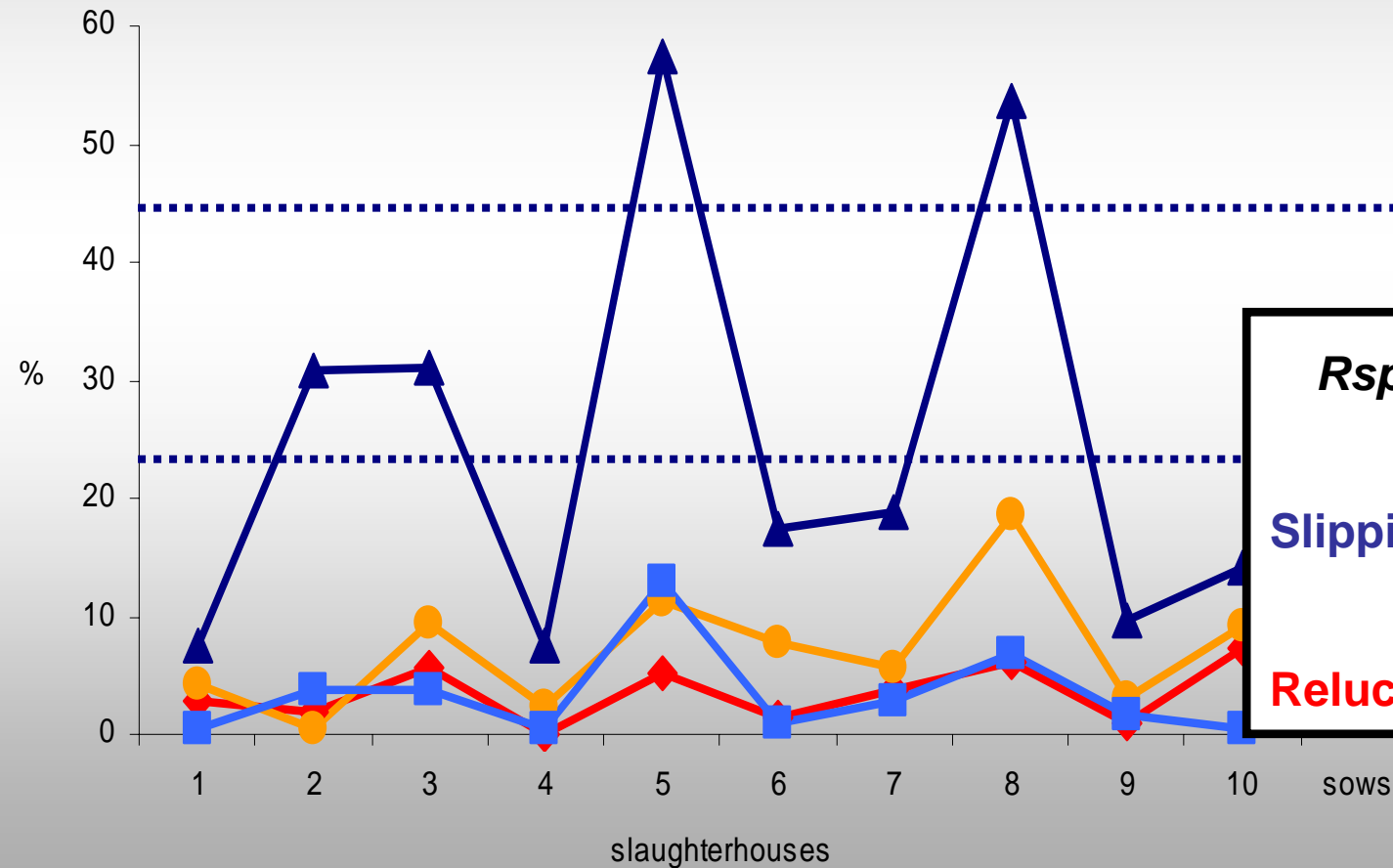
TURNING BACK



UNLOADING

AT SLAUGHTER

Reluctant to move Turning back Slipping Falling

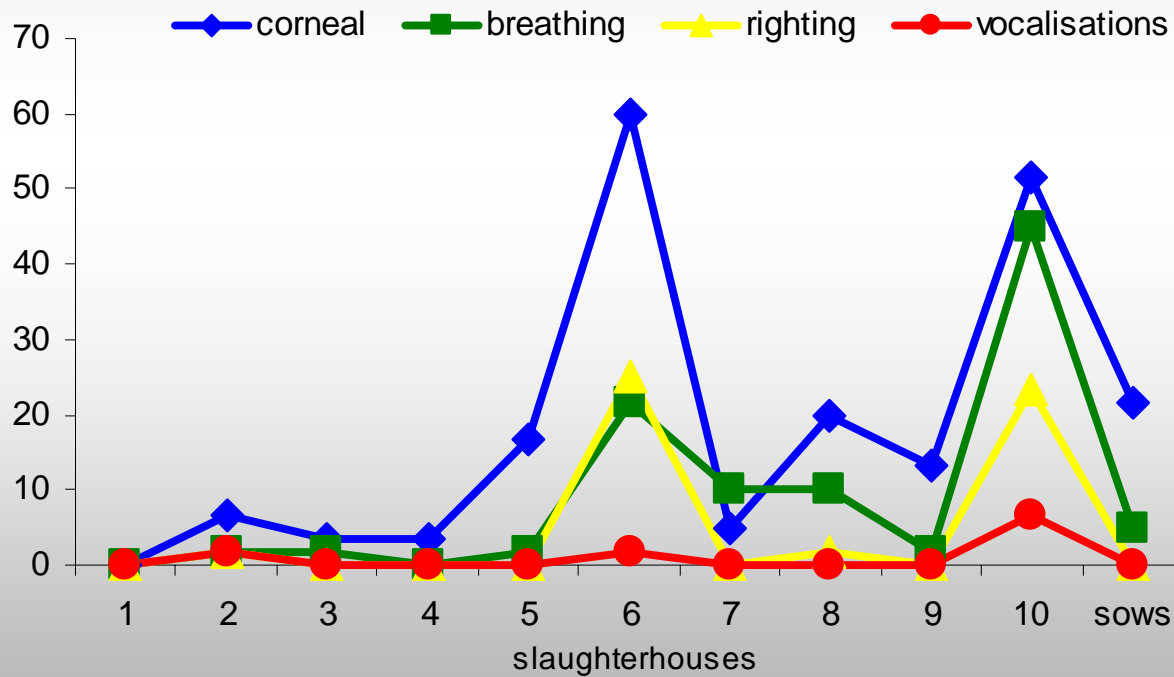


STUNNING

AT SLAUGHTER

Criteria 8. ABSENCE OF PAIN INDUCED BY
MANAGEMENT PROCEDURES

CORNEAL REFLEX



CONCLUSIONS

The methodology is feasible on Spanish intensive and extensive farms as well as in the slaughterhouses assessed.

The assessment protocols allow comparison among farms and among slaughterhouses.

In order to interpret variations in the prevalence of animal-based parameters, environmental and management conditions should be taken into consideration.



Moltes Gràcies