

INTEROBSERVER RELIABILITY OF DIFFERENT METHODS TO EVALUATE SOWS' BODY CONDITION

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INTRODUCTION

- Maximizing production and ensuring sustainability are two central goals of modern pig farming and to achieve that is crucial to prioritize an adequate the body condition of sows.
- Deviations of the ideal body condition of sows will result in negative outcomes, irrespective of the moment of gestation



INTRODUCTION

- To avoid these deviations, it's necessary to evaluate the body condition of sows
- This allows interventions to be done time wisely ensuring a higher percentage of females in their optimal physical state
- Different methods are available to measure sows' body condition and there is no consensus of which method is the most reliable

OBJECTIVES

The aim of this trial was to compare the reliability of different methods to assess sows' body condition within the same observer and between different observers.

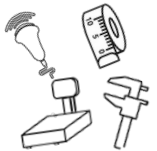
MATERIALS AND METHODS



8 Observers



22 Sows



3 Measuring methods



Caliper



Mode A ultrasound (Lean-meter; Renco. Minneapolis. MN. USA)

MATERIALS AND METHODS

3 Measuring methods



SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
The sow is visually thin, with hips and backbone very prominent and no fat cover over hips and backbone.	The hip bones and backbone are easily felt without any pressure on the palms.	It takes firm pressure with the palm to feel the hip bones and backbone.	It is impossible to feel the bones at all even with pressure on the palm of the hands.	The sow is carrying so much fat that it is impossible to feel the hip bones and backbone even by pushing down with a single finger.

RESULTS AND DISCUSSION

- Gestational age of sows: 4 days, 43 days and 85 days
- Parity rangend from 0 to 11

Descriptive data of sows enrolled in the trial

	Mean	Min	Max
Weight (kg)	289	183	396
Renco left side (mm)	14.41	6	21
Renco right side (mm)	14.26	7	22
Caliper	15.91	5	21
BCS	3	1	5

RESULTS AND DISCUSSION

Intraclass Correlation Coefficient (ICC)

- Inter: reliability between observers
- Intra: reliability within the same observer
- Higher ICC = higher reliability

	INTER (%)	INTRA (%)
Renco	0.48	0.30
Caliper	0.88	0.87
BCS	0.51	0.54

- The caliper showed the highest ICC values
- The renco showed the lowest values
- Observer previous training might be important when choosing a method

MATERIALS AND METHODS

Experienced



- 6 Observers
- Previous experience
- Master degree

Inexperienced



- 11 Observers
- No previous training
- Most undergrad students (veterinary or animal scientist)

RESULTS AND DISCUSSION

Experienced Observers

	Pre-training		Post- Training	
	Inter (%)	Intra (%)	Inter (%)	Intra (%)
Backfat	51	37	67	63
Caliper	74	80	86	87
BCS	35	42	50	41

- Experienced observers always have better ICC
- For trained observers methods BCS had the lowest values regardless of the moment

- Training always improve the ICC, with greater results for inexperienced observers
- The results concerning the caliper are in agreement with the previous trial

Inexperienced Observers

	Pre-training		Post- Training	
	Inter	Intra	Inter	Intra
Backfat	15	27	31	15
Caliper	55	47	69	68
BCS	27	17	34	25

FINAL REMARKS

- Factors that may have influenced the results include observer bias and the level of observer training.
- Addressing the latter might require additional focus, particularly in subjective assessment methods.
- Objective methods have a better precision to measure sows' body condition.

THANK YOU!



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