Simplified welfare assessment method for young bulls in pens

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INSTITUT DE L'ELEVAGE idele

Avec la contribution financière du compte d'affectation spéciale développement agricole et rural CASDAR

MINISTÈRE DE L'AGRICULTURE ET DE LA SOUVERAINETÉ ALIMENTAIRE
Liberté Égalité Fraternité

Simplified welfare method assessment for young bulls in pens

Social concern regarding animal welfare is increasing

Cattle industry has adopted welfare assessment indicators and measures

Measures of the indicators:
- ✅ Cows
- ✅ Young fattening bulls

Practicability of measures in group
Inability to get in pens

BeBoP project

Design a simplified method of welfare assessment for young bulls in pens

Accurate

Practical for routine evaluation

Riskless for animals and evaluators

Simplified welfare assessment method

List of **ANIMAL-BASED** indicators

Observation method

1 **Overall fattening barn**
5min

Overall emotion state, posture, activities

2 **Pen**
5min/pen

Animal-human relashionship, stress behaviour, body and health condition

3 **Fattening batch**

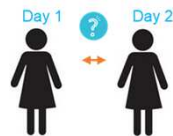Growth, mortality and health performances

Simplified method
Observation at the pen level
Resting animals

Scientific value?

Inter-observers reliability / Reproductibility

Sensibility ?

Comparison to individual assessment method

Practicability ?

Test on commercial farms

2 experimental farms : Les Etablières, Lanaud

198 young bulls Limousin and Charolais, in 25 pens, seen at beginning and end of fattening

2 trained observers for each session

Assessments repeated on 2 consecutive days

Results
Simplified welfare assessment method

Indicators	Prevalence	Reliability inter-observers	Reproductibility
Thin Body condition	4.0%	Good	Good
Apathy	0.1%		
Pitted hair	0.5%	Acceptable	Acceptable
Strong nasal discharge	0.7%	Acceptable	Poor
Coughing in pen	24.5%	Good	Poor
Long scraping	0.5%	Good	Poor
Short scraping	4.3%	Good	Poor
Injury	11.4%	Good	Poor
Diarrhea	2.4%	Acceptable	Acceptable
Lameness	1.7%	Good	Good
Dirtiness	2.9%	Good	Good
Human acceptance of approach	17.8%	Acceptable	Acceptable
Reactivity to disturbance	1.0%	Acceptable	Poor
Stereotypic behaviour	1.4%	Good	Poor

Prevalence : variable but sufficient to test concordance on most indicators

Results
Simplified welfare assessment method

Weighted kappa coefficient	
Kw ≥ 0,61	Good
0,61 > Kw ≥ 0,21	Acceptable
0,21 > Kw	Poor
	Non evaluated

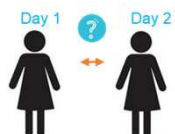| Indicators	Prevalence	Reliability inter-observer	Reproductibility
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Inter-observer reliability: observations are consistent between observers

Weighted kappa coefficient	
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0,21 > Kw	Poor
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Day 1   Day 2

Reproductibility of measurements : mitigated

Results
Convergent validity of simplified welfare assessment method

Weighted kappa coefficient	
Kw ≥ 0,61	Good
0,61 > Kw ≥ 0,21	Acceptable
0,21 > Kw	Poor
	Non evaluated

Indicators	Prevalence simplified method	Prevalence Individual method	Concordance
Thin body condition	4.0%	6.6%	Good
Apathy	0.1%	0.6%	
Pitted hair	0.5%	0.3%	
Strong nasal discharge	0.7%	4.8%	
Coughing in pen	24.5%	10.0%	Poor
Long scraping	0.5%		
Short scraping	4.3%		
Injury	11.4%	30.3%	Acceptable
Diarrhea	2.4%	17.9%	Poor
Lameness	1.7%	3.5%	Acceptable
Dirtiness	2.9%	3.5%	Good
Human acceptance of approach	17.8%	44.4%	Acceptable
Reactivity to disturbance	1.0%		
Stereotypic behaviour	1.4%		

Advantages and limits to each protocol

- Simplified method gives **access to more indicators** (scratching and behavioral) while bulls are resting

- Individual method is more **sensitive**

Assessments are **globally concordant** with the two methods, except for respiratory disorders and diarrhea.

22 French commercial farms on summer 2022

37 overall fattening surrounding

175 pens

1622 young bulls

1 observer

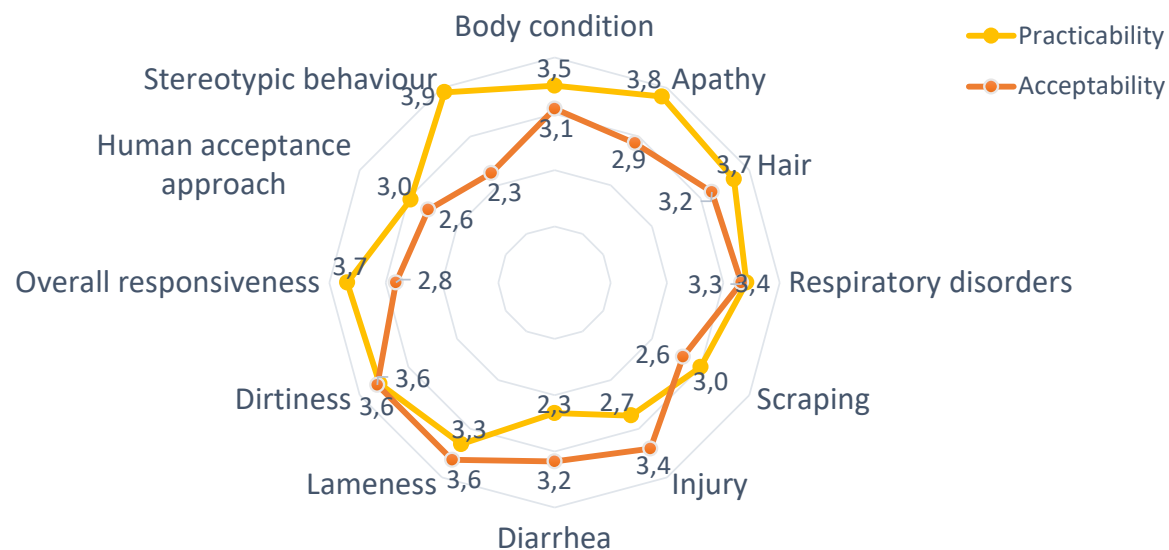**Prevalences** observed on commercial and experimental farms are close

Some indicators have higher prevalences on commercial farms

1h assessment

Acceptability and practicability of indicators

Fairly good **acceptability** by farmers, even if restricted for behavioral indicators

Good **practicability** except for indicators at the rear of animals

Conclusion and prospects

Simplified welfare assessment method

- Some elements of scientific validation demonstrated
- Others remain more mixed
- Riskless for animals and observers
- Fast
- Feasible in commercial farms

Complete scientific validation on-farm for indicators with a low prevalence on experimental farms

Visit up to 30 farm visits to refine external validity

Propose adjustments of welfare assessment for young bulls considering these results to French cattle industry

Thank you for your attention