Animal-based indicators on carcasses: a tool to monitor pig welfare and management practices on-farm and pre-slaughter

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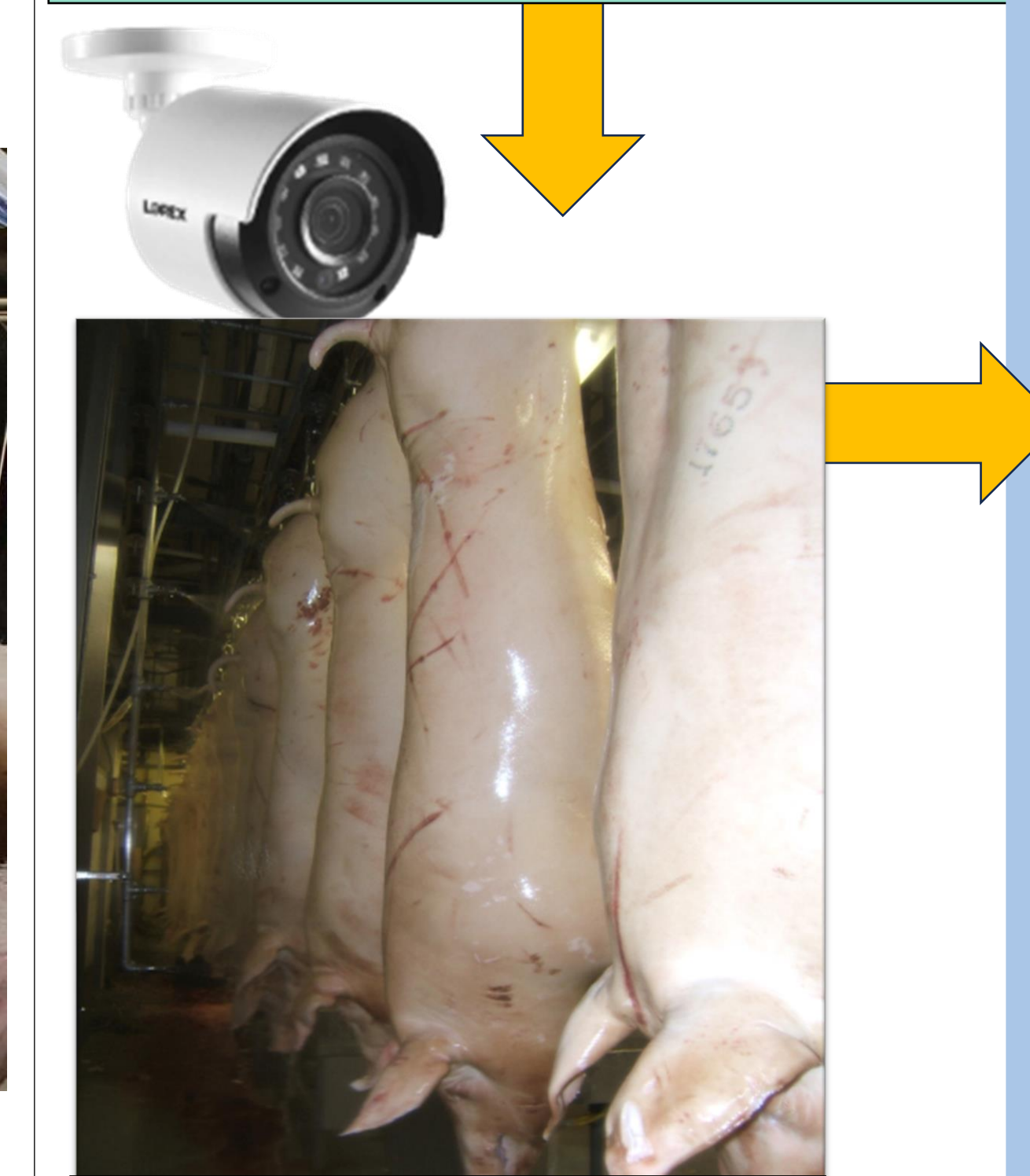## INTRODUCTION

Animal-based indicators (ABI)[1-3]

- Visible on the body/carcass
- Reflect pig-environment interactions
- Inform on welfare on-farm retrospectively

Objective

- Investigate value of monitoring ABI on pig carcasses as a welfare assessment tool

Iceberg indicators

Abattoir data (ABI)

Production chain data

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Finisher

Abattoir

MATERIALS & METHODS

- 15 Western Canadian finisher barns
- 26 batches, 1–2 batches/barn
- 3733 pig carcasses assessed at 1 abattoir
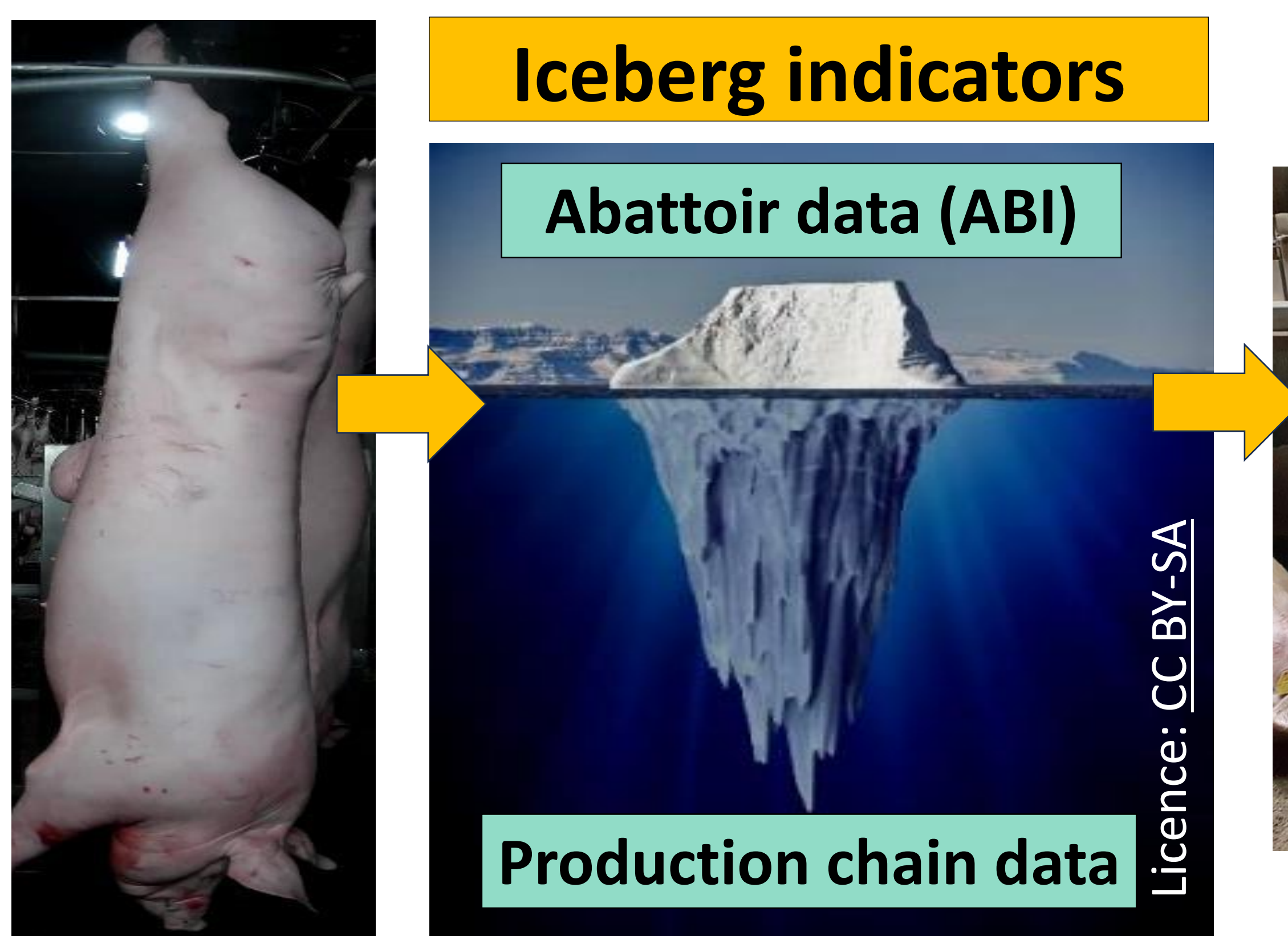
Assessments

- Camera installed on wall opposite slaughter line (post-scalding & dehairing)
- Carcasses passing camera were recorded
- ABI severity scored by 2 technicians

Scoring scales

- Skin lesions (shoulder, middle, rump) — 0–3
- Tail length
- Tail bite lesions — 0–2
- Loin bruises
- Human handling lesions — Present/Absent

Data analysis

- Summarized descriptively to determine % of carcasses with different ABI & severities

RESULTS & DISCUSSION

Skin lesions

Moderate

Score 2 = from 5 to 10 visible lesions

91% of carcasses

Severe

Score 3 = more than 11 visible lesions

1% of carcasses

- Fresh skin lesions → Aggression during transport & lairage
- Could be addressed by ↓ mixing events
- Can be used to track the effectiveness of management practices to mitigate aggression

Tail length

99% of carcasses docked

64% docked short

Score 3 = Docked: ≤2cm

- Tails docked short → Potential strategy to curb tail-biting risk?

Tail bite lesions

40% of carcasses

Score 1 = Mild

1% of carcasses

Score 3 = Severe

- Docking is insufficient to curb tail biting
- Provides feedback for need of additional management practices to ↓ tail biting & monitor their effectiveness

Loin bruises

Present on 8% of carcasses

Human handling lesions

Present on 2% of carcasses

- Low % indicates good animal handling practice on-farm & pre-slaughter
- Reflects effective training of staff in Canada

IMPLICATIONS

Monitoring carcass animal-based indicator data:

→ Allows producers to review management practices that work well & those that can be adjusted to improve welfare
→ Offers a valuable tool for providing feedback to producers, abattoir staff, & for use in monitoring in animal care programs
→ Helps improve reporting of animal welfare metrics for benchmarking & transparency targets (building consumer trust)
→ Can help meet national & international demands for higher quality produce

References
1 van Staaveren et al. (2017) *Animal,* 11(1):140-6
2 Maisano et al. (2020) *Animal,* 14(1):108-18
3 Dawkins (2021) Oxford University Press, USA