Does suckler cow genotype matter at calving?

D.E. Lowe and F.O. Lively

Agri-Food and Biosciences Institute (AFBI), Hillsborough, Co. Down, BT26 6DR, UK

Introduction (1)

- Need **sustainable** suckler cow systems
- What are important traits?

❖ **Produce a healthy calf every 365 days**

- easy calved
- good mother
- optimal milk supply
- good temperament
- sound legs, feet, udders
- fertile
- efficient feeder

Introduction (2)

- Importance of genotype
- Where do we source suckler cows from?
  - From dairy herd
  - From suckler herd

	Contribution to total carcass output (%) in 2015	
Breed	**Dairy origin dam**	**Suckler origin dam**
Charolais	2	37
Limousin	10	35
Belgian Blue	7	3
Simmental	2	8
Blonde D'Aquitaine	1	3
Aberdeen Angus	14	7
Hereford	5	2
Holstein Friesian	53	1

BovIS Bovine Information System

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Objectives

Compare 2 suckler cow genotypes at calving

- Limousin Holstein (LH)

- From AFBI dairy herd
- Influence Holstein genetics
- Problem of biosecurity

- Stabiliser (S)

- Composite breed
- Maternal & terminal traits

Methods

	Cow Numbers	
	LH	S
Year 1	50	33
Year 2	46	37
Year 3	45	45

- All cows crossed with Stabiliser

- Grazed under lowland conditions at AFBI Hillsborough, under similar management

- In autumn transferred to AFBI Loughgall for winter housing; penned according to breed and condition score and offered grass silage-based diets

Measurements

- Cows scored at calving for Years 1-3:
  - » Calving difficulty
  - » Cow temperament
  - » Mothering ability
  - » Milk supply

Scores

Calving Difficulty	
Score	**Descriptor**
1	Unassisted
2	Minimal assistance
3	Assistance using ropes
4	Assistance using ropes and calving aid
5	Difficult calving
6	Caesarean section

Cow temperament	
Score	**Descriptor**
1	Very quiet
2	Quiet
3	Average
4	Wild & aggressive
5	Very wild and aggressive

Mothering ability	
Score	**Descriptor**
1	Readily accepts
2	Accepts after encouragement
3	Rejects calf
4	Aggressive

Milk supply	
Score	**Descriptor**
1	Too much milk
2	Plentiful
3	Limited
4	No milk

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Measurements

- Colostrum analysed for milk composition in Years 1 & 2:
  - Protein
  - Fat
  - Lactose
  - Casein
  - Urea Nitrogen

- Used a commercial Fourier Transform Infrared (FTIR) Spectrometer, "Milkoscan"

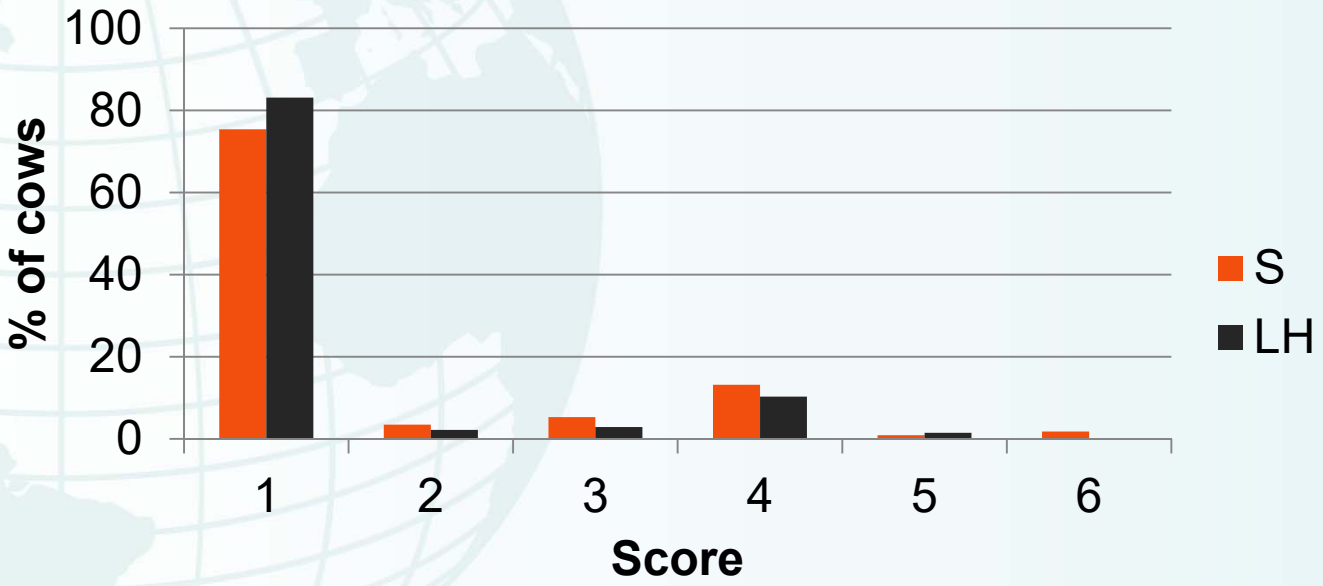
Statistical analysis

- Genstat 16th edition, (VSD International, 2015).
- Continuous variables analysed as a one-way ANOVA
- Scoring variables were fitted with breed as a two-dimensional contingency table using a random permutation test

Results

Calving difficulty

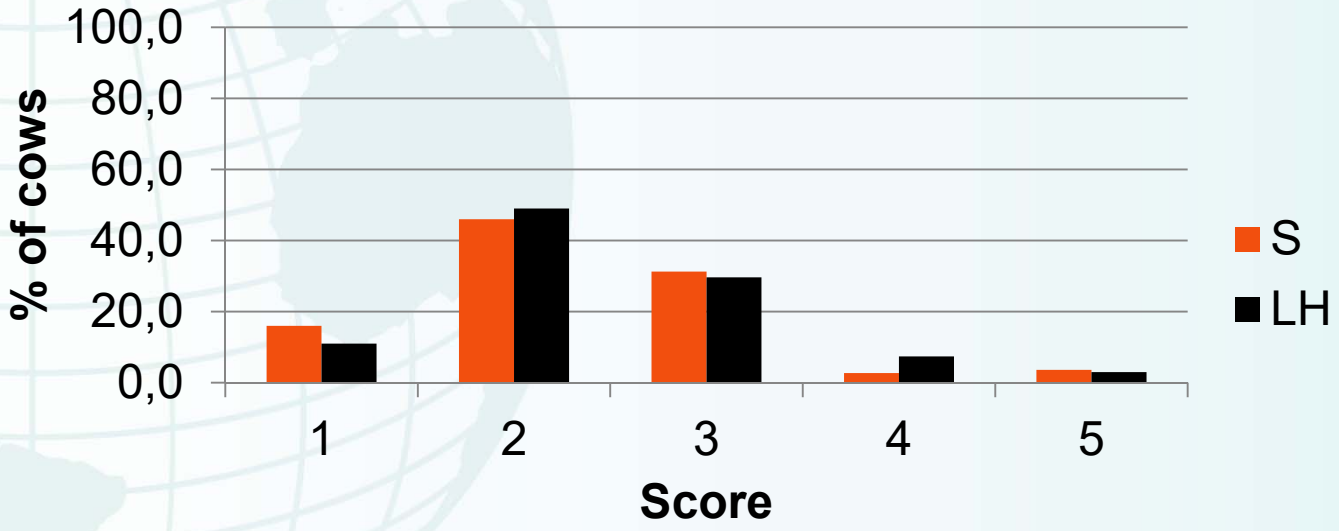
Combined data for 3 years.



- **No significant effect of dam genotype**

Cow temperament at calving

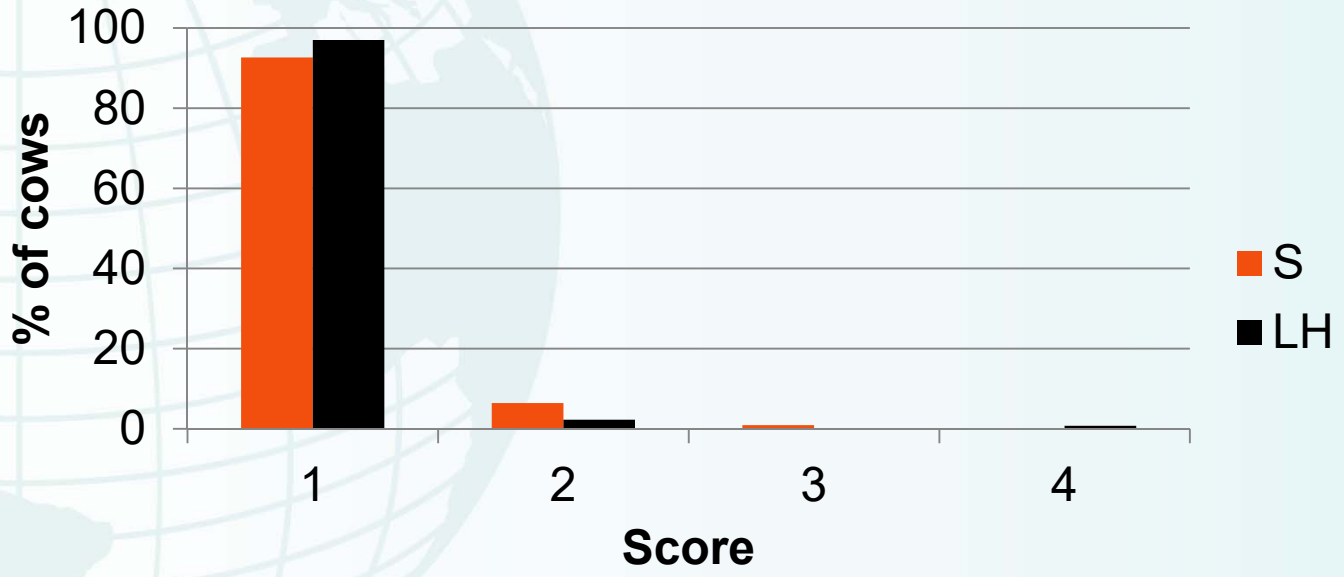
Combined data for 3 years



- **No significant effect of dam genotype**

Mothering ability

Combined data for 3 years



- **No significant effect of dam genotype**

Milk supply

	Score	Descriptor	S	LH	*sig*
Year 1	2	Plentiful supply	66%	79%	p= 0.088
	3	Limited supply	34%	17%	
Year 2	2	Plentiful supply	68%	100%	p<0.001
	3	Limited supply	32%	0%	
	2	Plentiful supply	85%	94%	ns
Year 3	3	Limited supply	15%	5%	

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Milk composition (g/kg)

Year 1	S	LH	sem	*P*
Casein	103.2	96.8	5.45	ns
Fat	30.0	86.2	38.67	ns
Lactose	29.1	28.0	1.35	ns
Protein	146.5	140.3	7.65	ns
Urea- Nitrogen	154.5	112.9	23.6	ns

Milk composition (g/kg)

Year 2	S	LH	sem	*P*
Casein	76.8	85.0	6.01	ns
Fat	13.1	48.8	11.43	p=0.05
Lactose	28.2	26.5	1.37	ns
Protein	133.6	147.8	11.32	ns
Urea- Nitrogen	454.8	440.9	103.12	ns

Milk composition (g/kg)

Year 1	S	LH	sem	*P*
Casein	103.2	96.8	5.45	ns
Fat	30.0	86.2	38.67	ns
Lactose	29.1	28.0	1.35	ns
Protein	146.5	140.3	7.65	ns
Urea- Nitrogen	154.5	112.9	23.6	ns

Conclusions

- Both dam breeds had good maternal attributes at calving
- Superior within-breed genetics used in current study
- Further work required on performance of progeny to assess impact of milk supply

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Implications

- Current work assessing calving parameters using a terminal sire
- More research is required on other optimal traits for a suckler cow
    - feed requirements
    - feed efficiency
    - fertility
    - longevity

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