

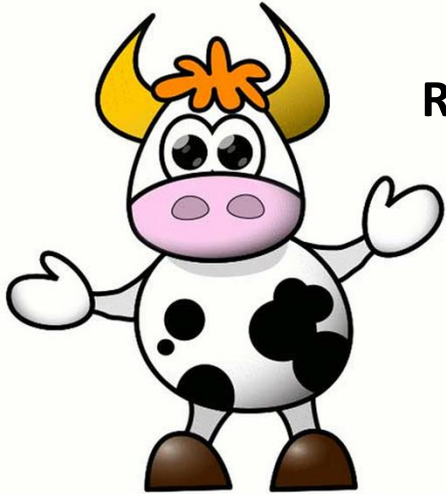


Relationship between claw and foot disease/disorders traits and conformation traits in Czech Holstein

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Reasons and news



The national cattle health monitoring system was started in the Czech Republic in the beginning of 2017.

- Czech Moravian Breeding Corporation,
- Holstein Cattle Breeders Association of the Czech Republic.

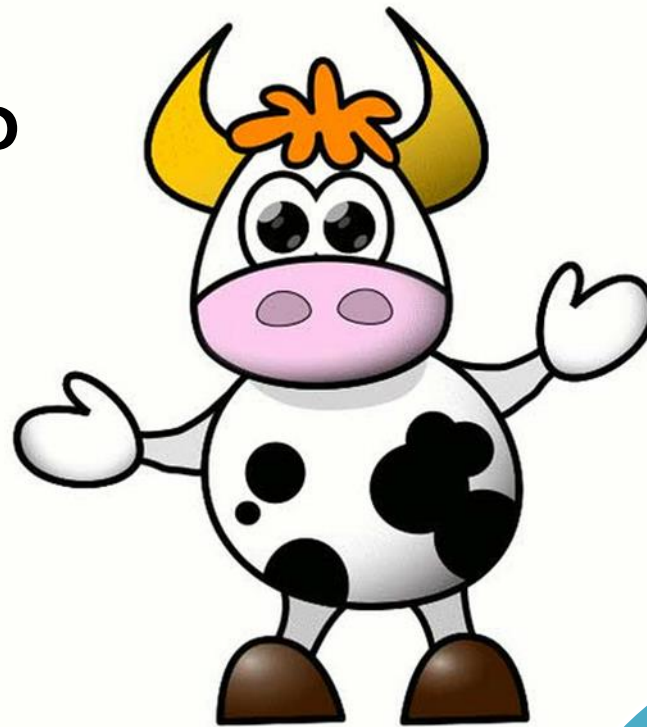
Research in cattle health traits:

genetic and breeding, economic weights, ...

Institute of Animal Science, Prague Czech Republic
Veterinary Research Institute, Brno, Czech Republic



QUESTION ?



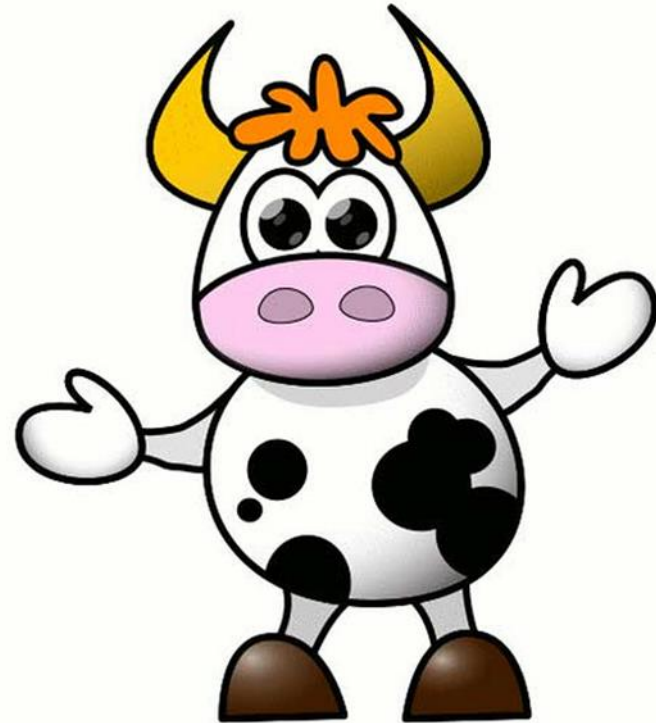
*Feet and Legs
Conformation*

INFO

*Claw and foot
diseases/disorders*

Foot and claw diseases/disorders

- **Skin diseases**
- **Claw disorders**
- **Overall foot and claw disorders**



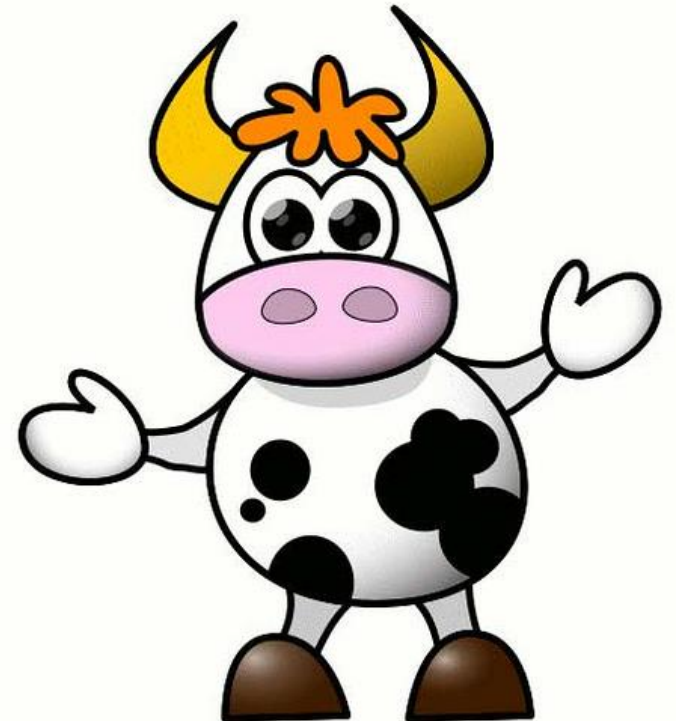
Skin diseases

- Digital and interdigital dermatitis,
- Interdigital phlegmon,
- Heel horn erosion;



Claw disorders

- Ulcers,
- White line abscess and white line disease,
- Horn fissures,
- Double sole,
- Sole hemorrhage;

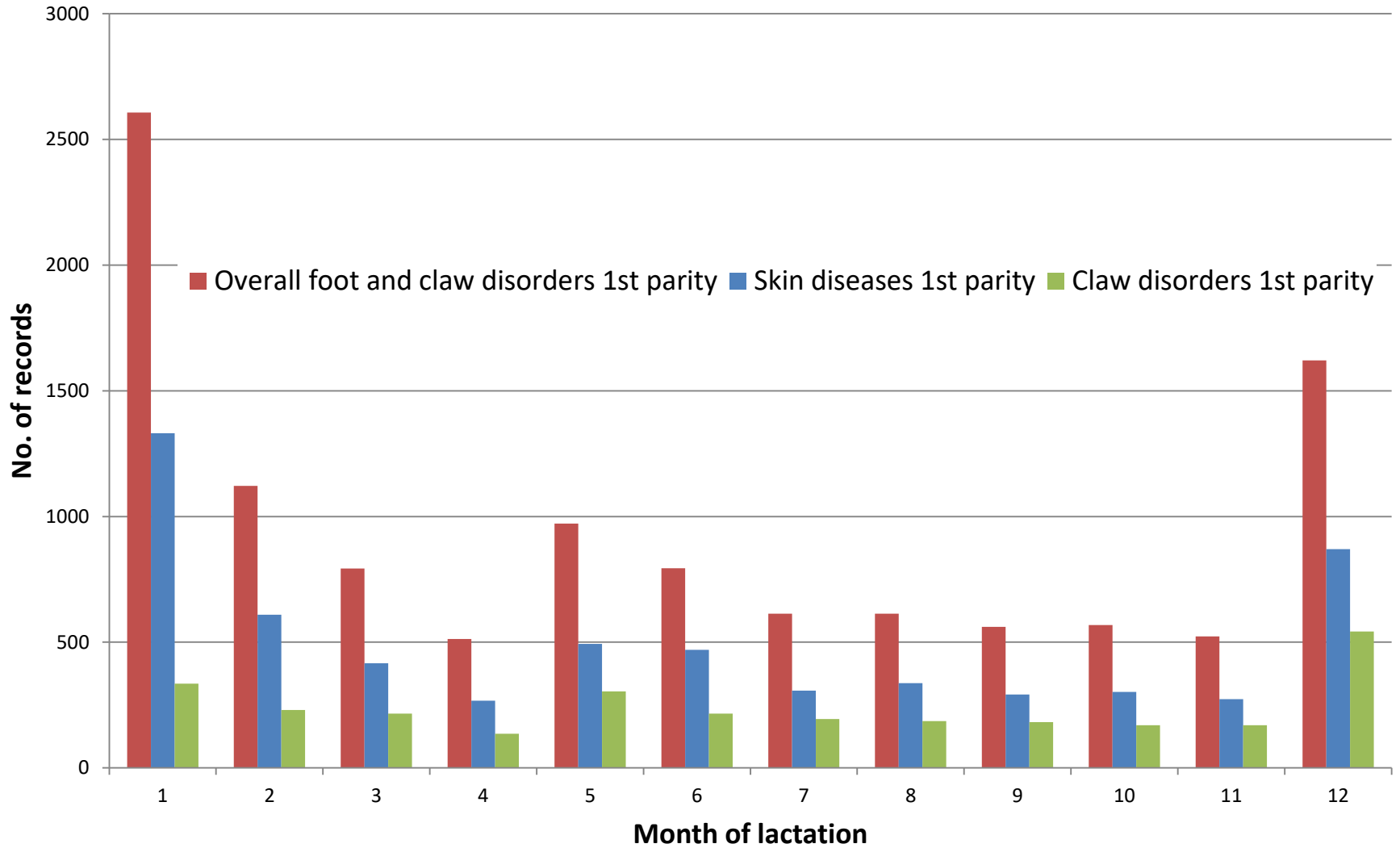


Overall foot and claw disorders

- Skin diseases,
 - Claw disorders,
- +
- Lameness,
 - Purulent claw diseases,
 - Swelling of coronet,
 - Interdigital hyperplasia;



No. of claw disorders according months of 1st lactation



Dataset

Holstein cattle

No. of cows

- 12 720

No. of lactations

- 27 887

No. of animals in pedigree

- 30 563

LIR

Overall foot and claw disorders

- 54.15%

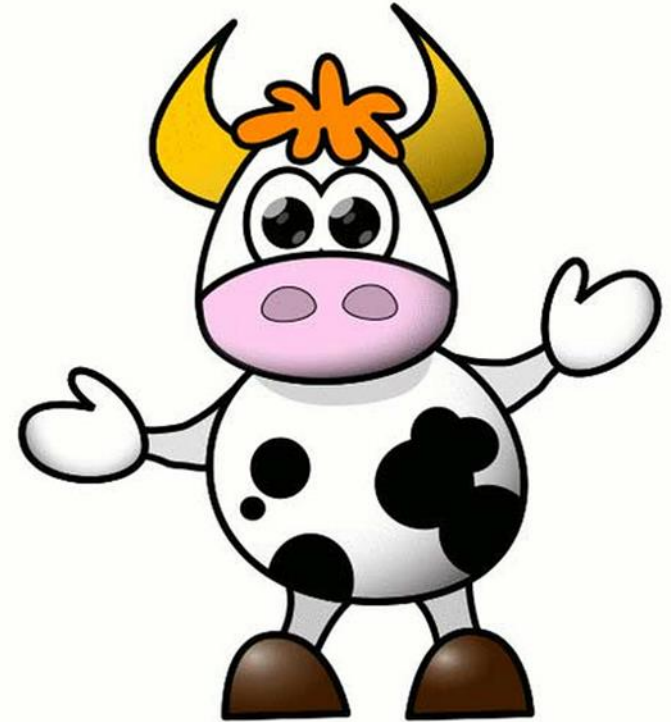
Claw disorders

- 27.16%

Skin diseases

- 32.15%

Method



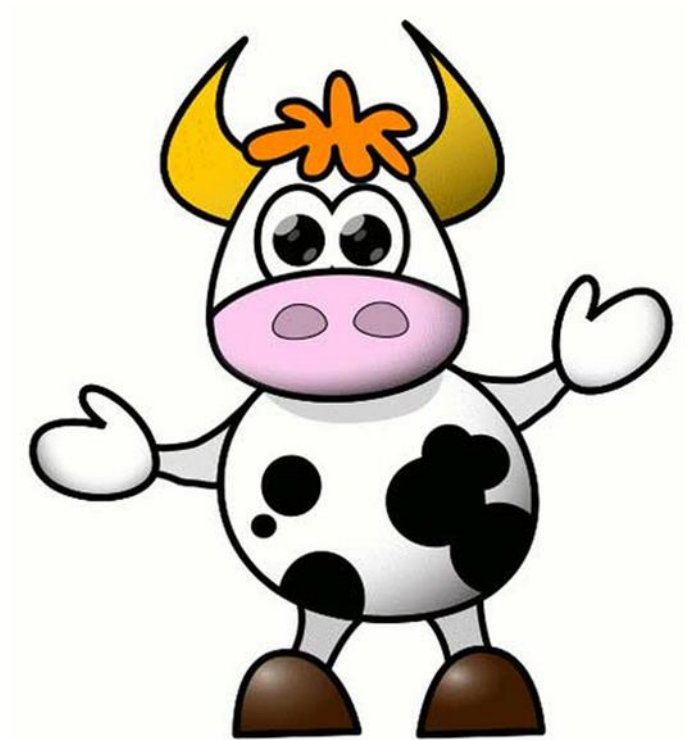
Linear Logistic Regression

Animal Model

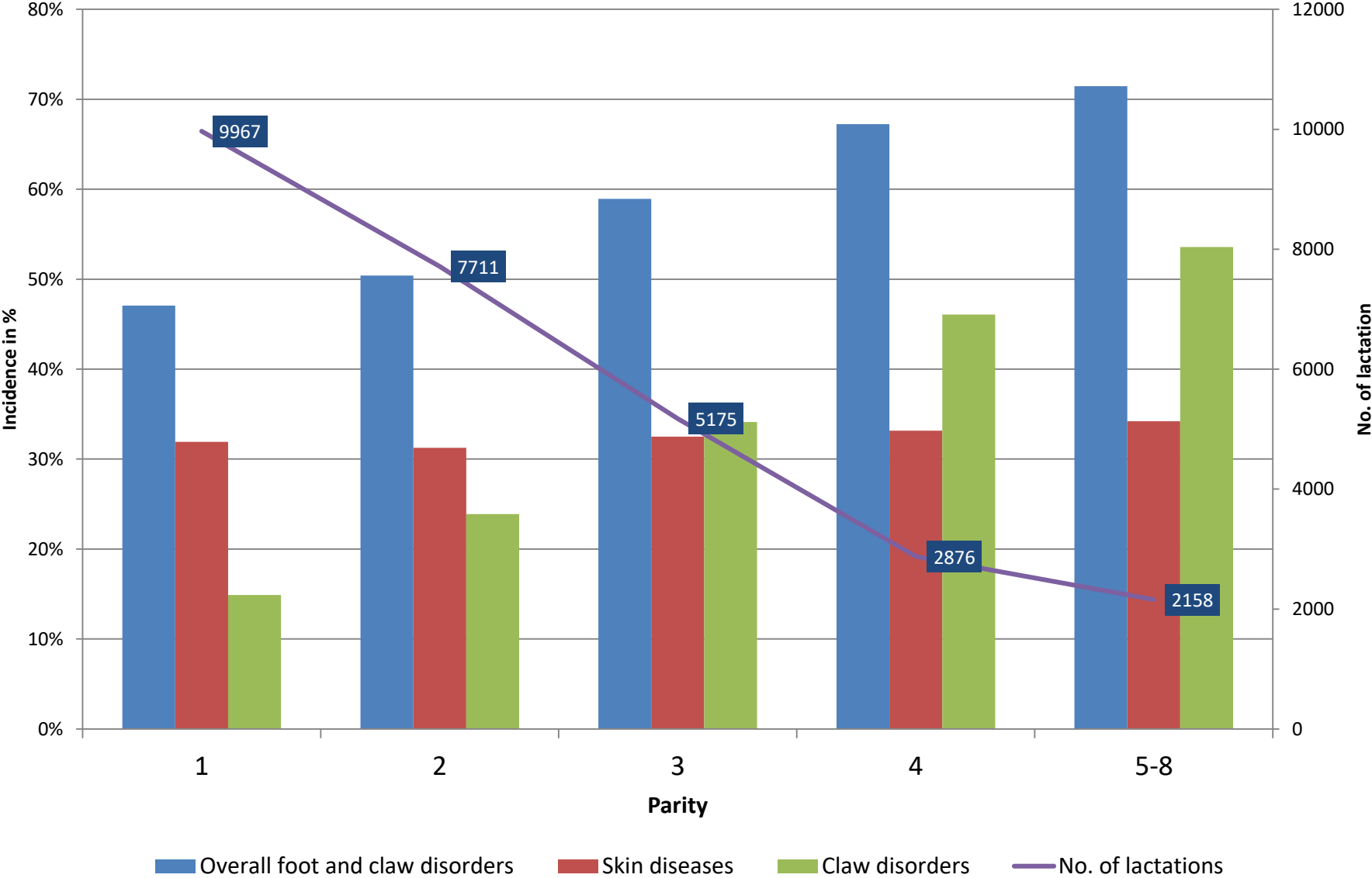
The DMU package [Madsen and Jensen, 2010];
RJMC

Dependent variable

- Claw disorder **in lactation**
- Defined
as a binary variable 0/1



Lactation incidence rate



Effects in model

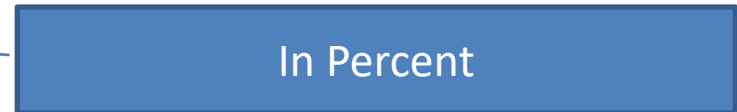
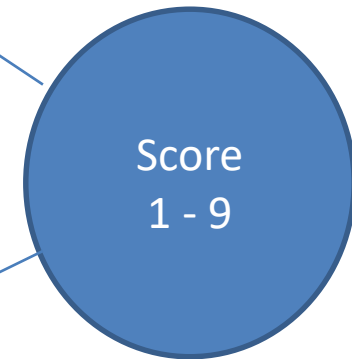


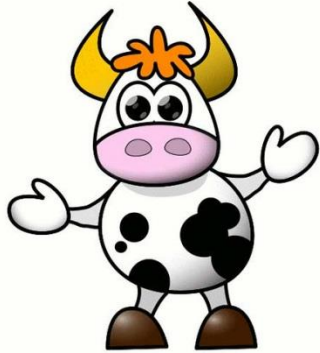
- Herd 7
- Year of calving 1999-2018
- Season of calving 4 (4 x 3 months)
- Class of age at calving 13
- Parity 5
- Type traits (score, classes, percent)



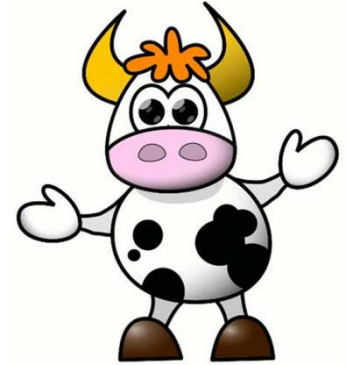
Type traits

- Stature,
- Body condition score (BCS),
- Rear legs rear view,
- Rear leg set (side view),
- Foot angle,
- Locomotion,
- Feet & legs score;





Heritabilities



Skin diseases

15.01 %

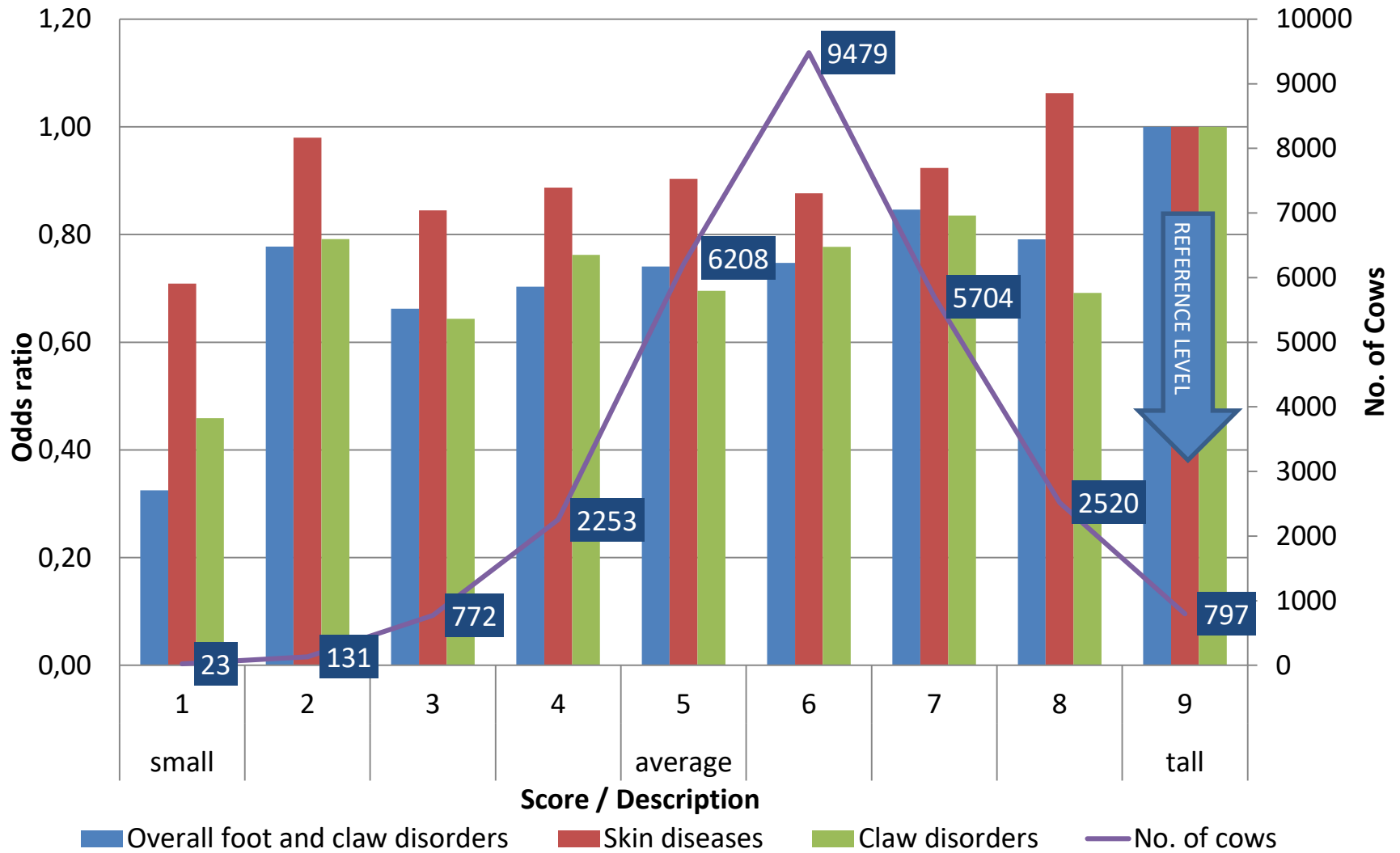
Claw disorders

25.9 %

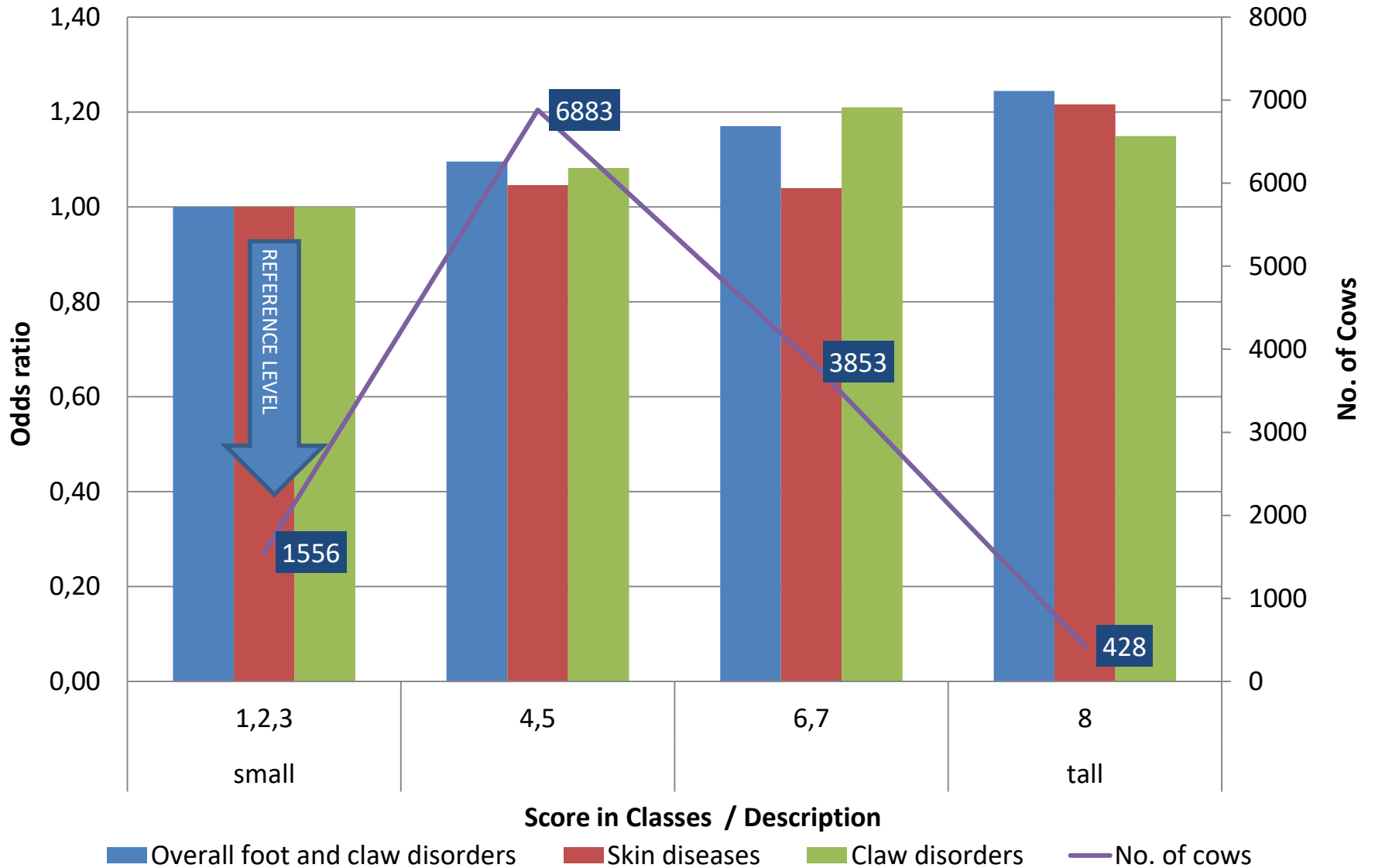
Overall foot and
claw disorders

20.9 %

STATURE

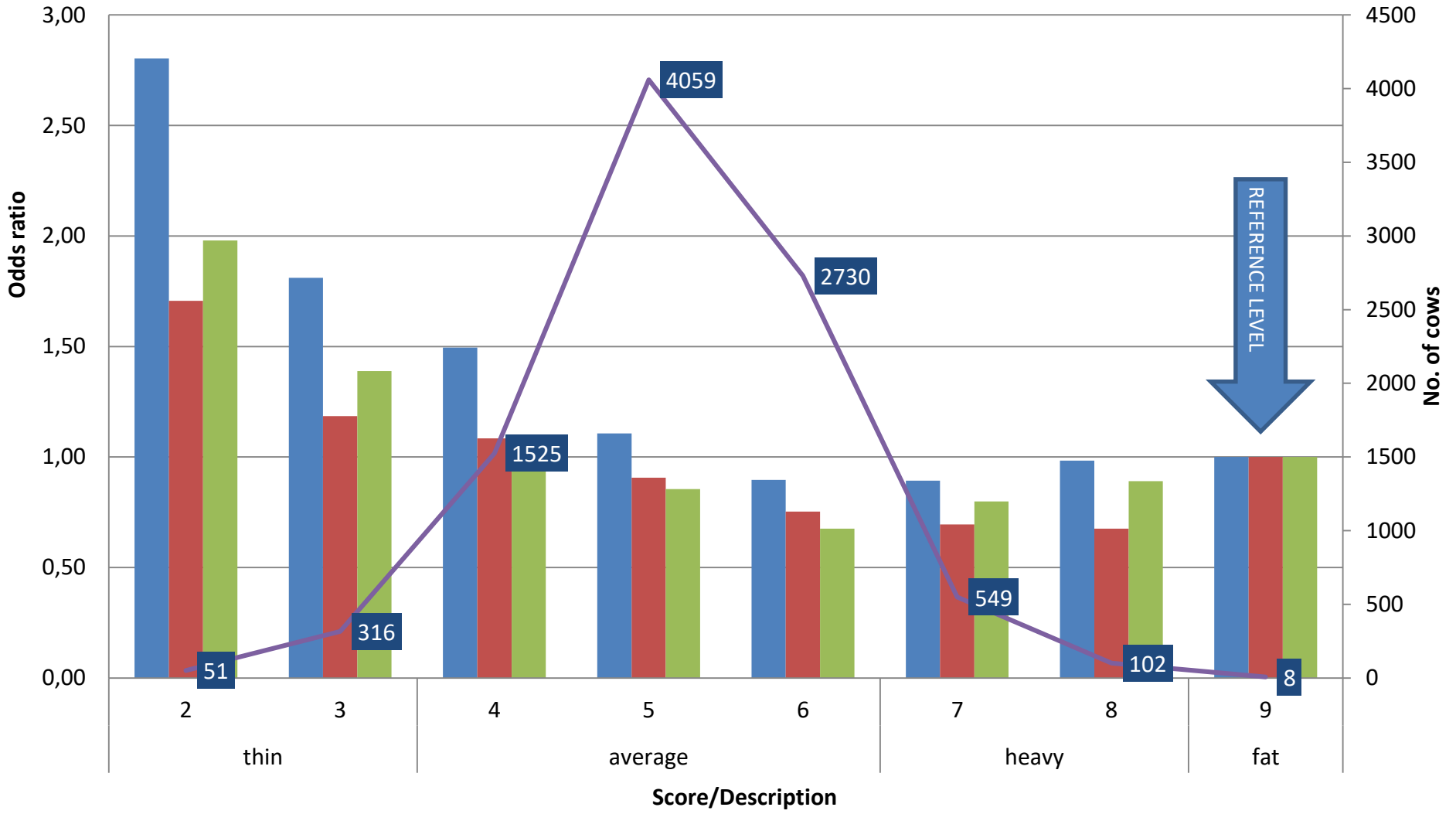


STATURE



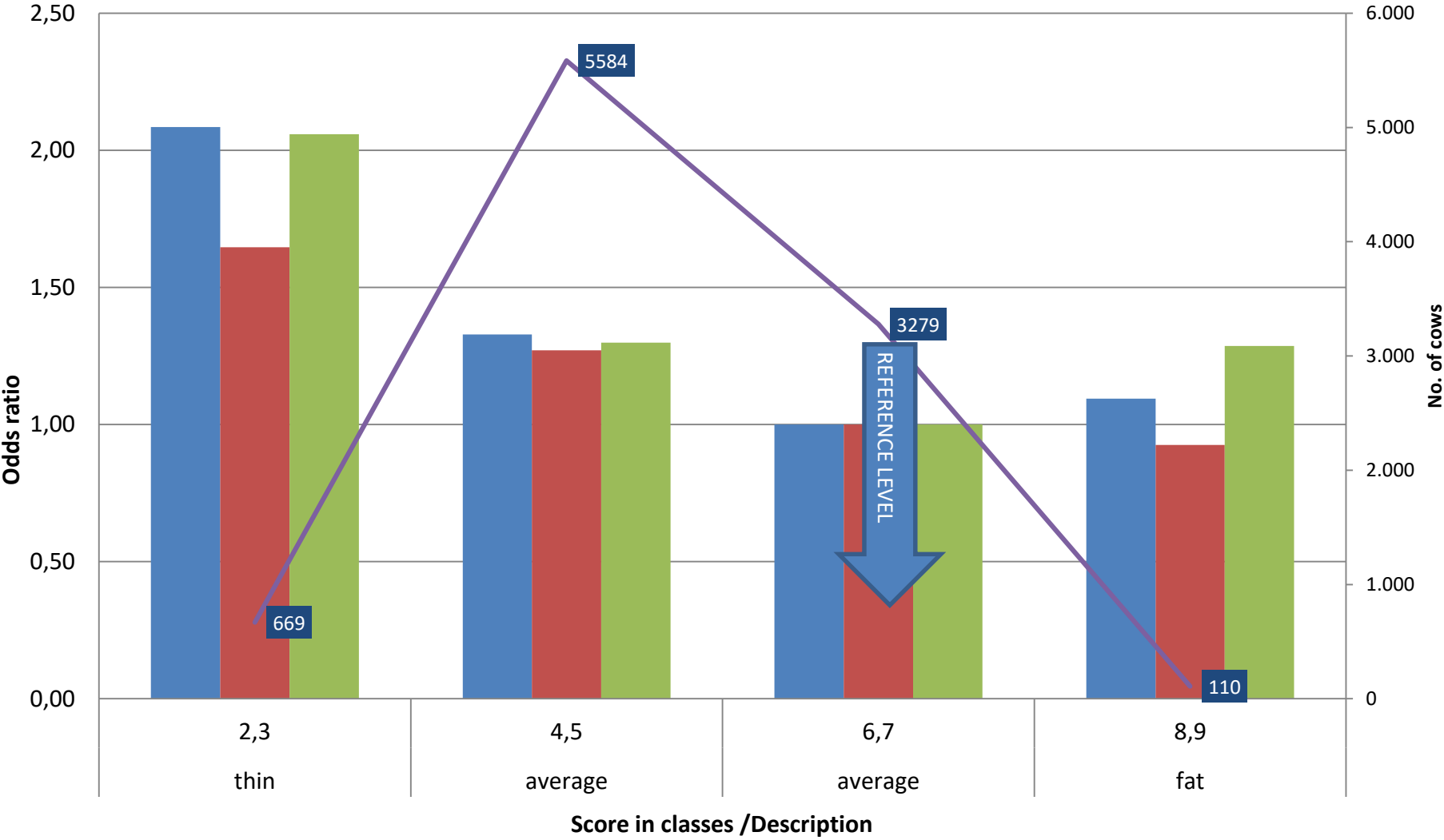
BODY CONDITION SCORE

Overall foot and claw disorders Skin diseases Claw disorders No. of cows

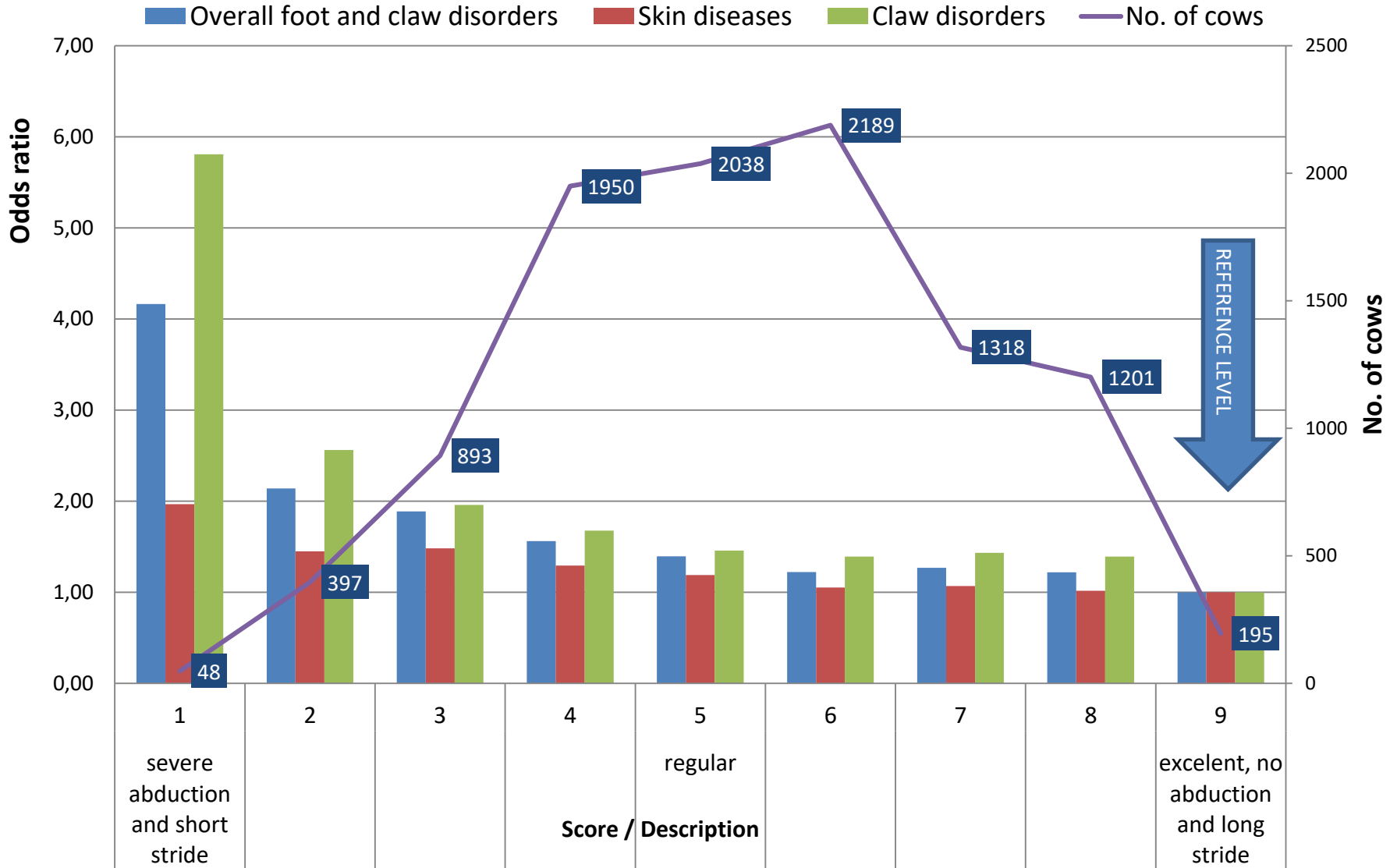


BODY CONDITION SCORE

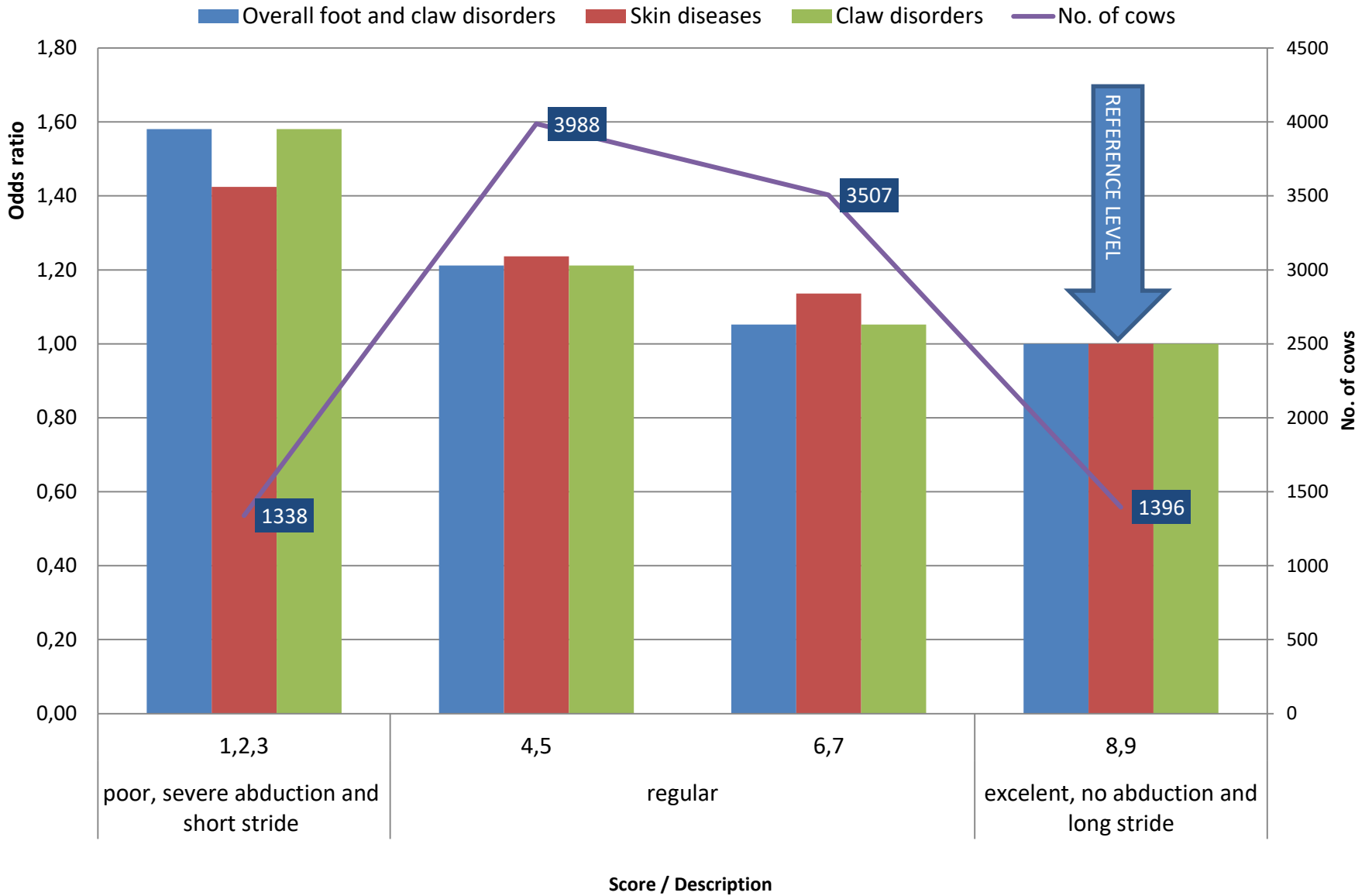
Overall foot and claw disorders Skin diseases Claw disorders No. of cows



LOCOMOTION

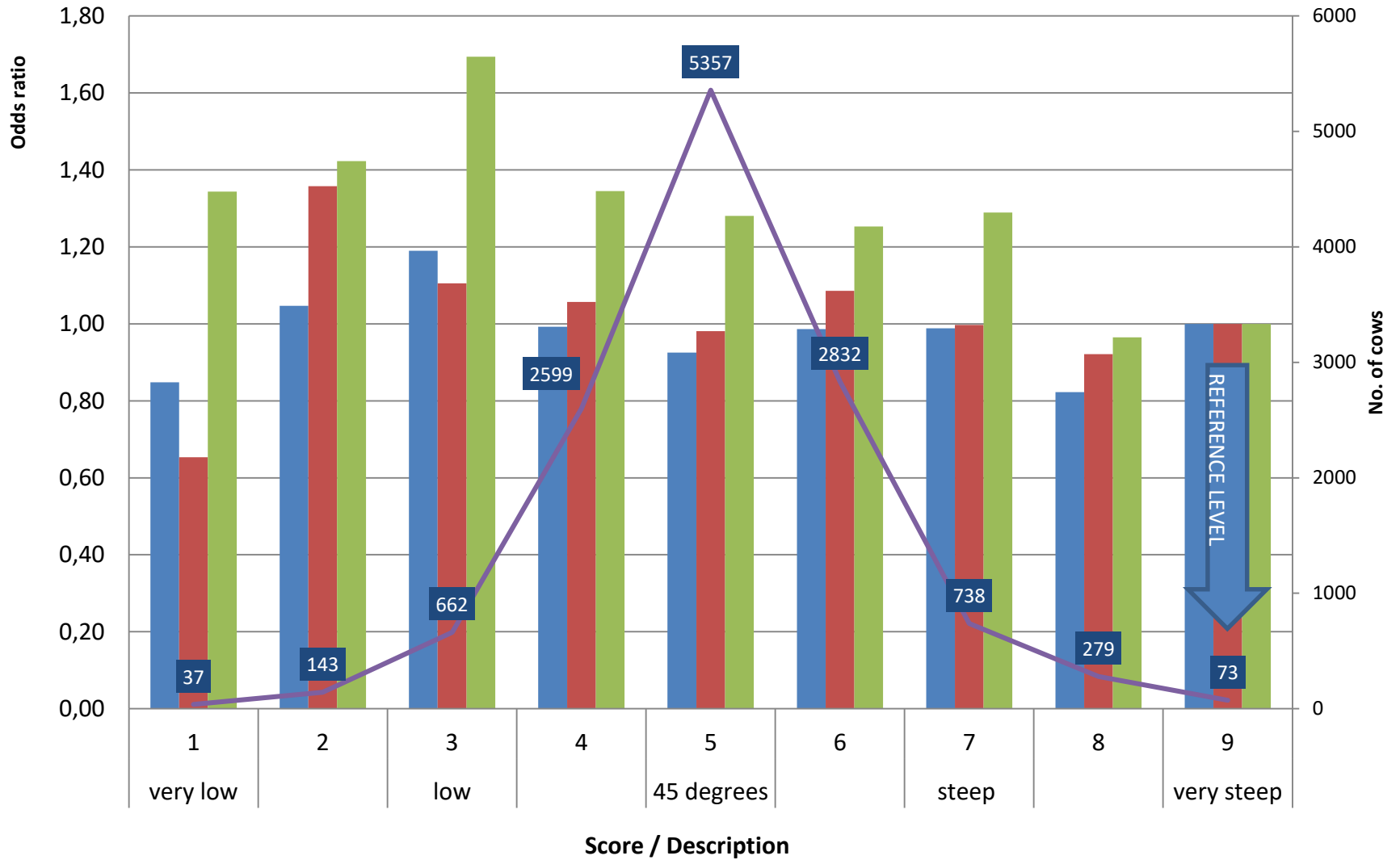


LOCOMOTION



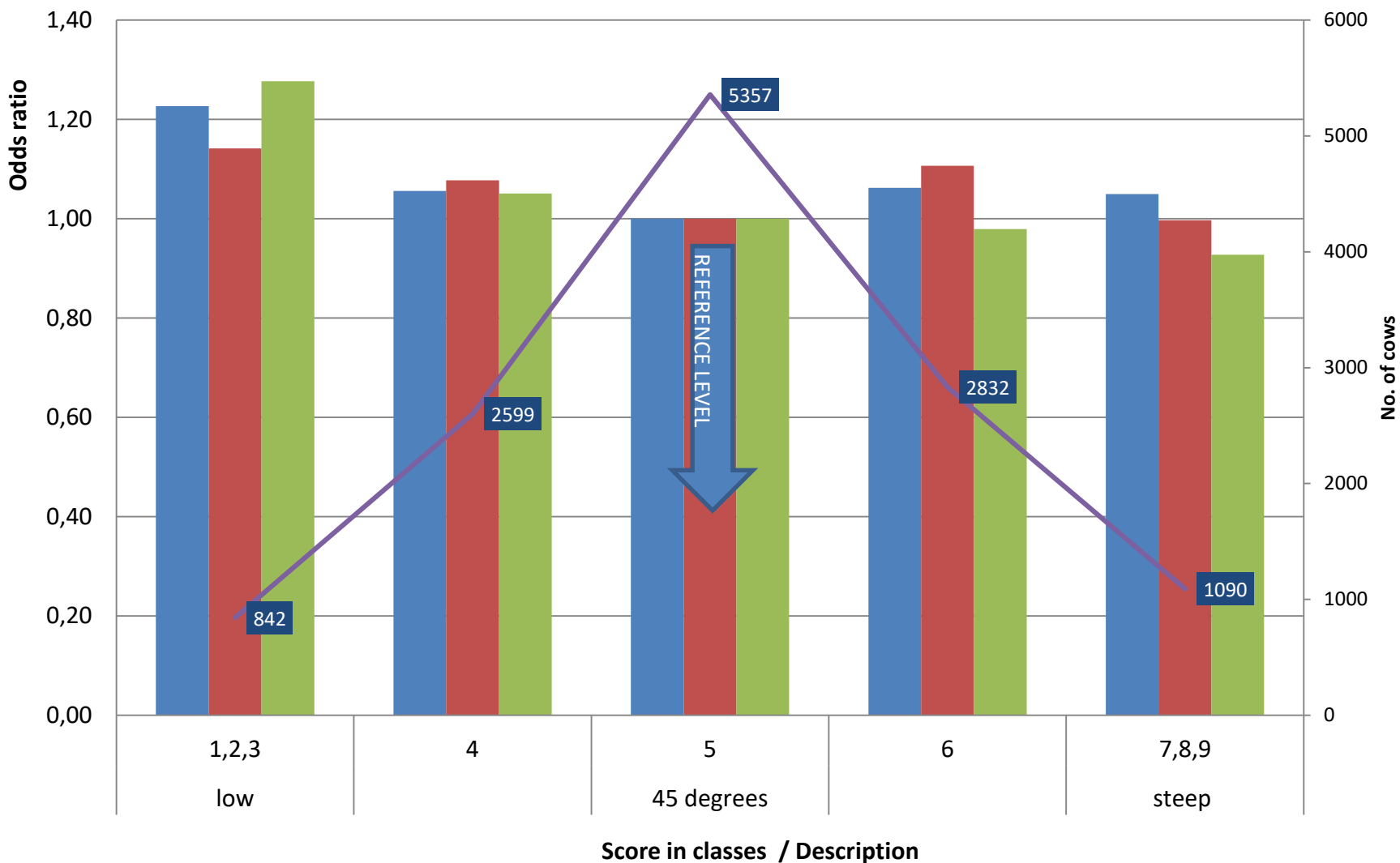
FOOT ANGLE

■ Overall foot and claw disorders
 ■ Skin diseases
 ■ Claw disorders
 — No. of cows

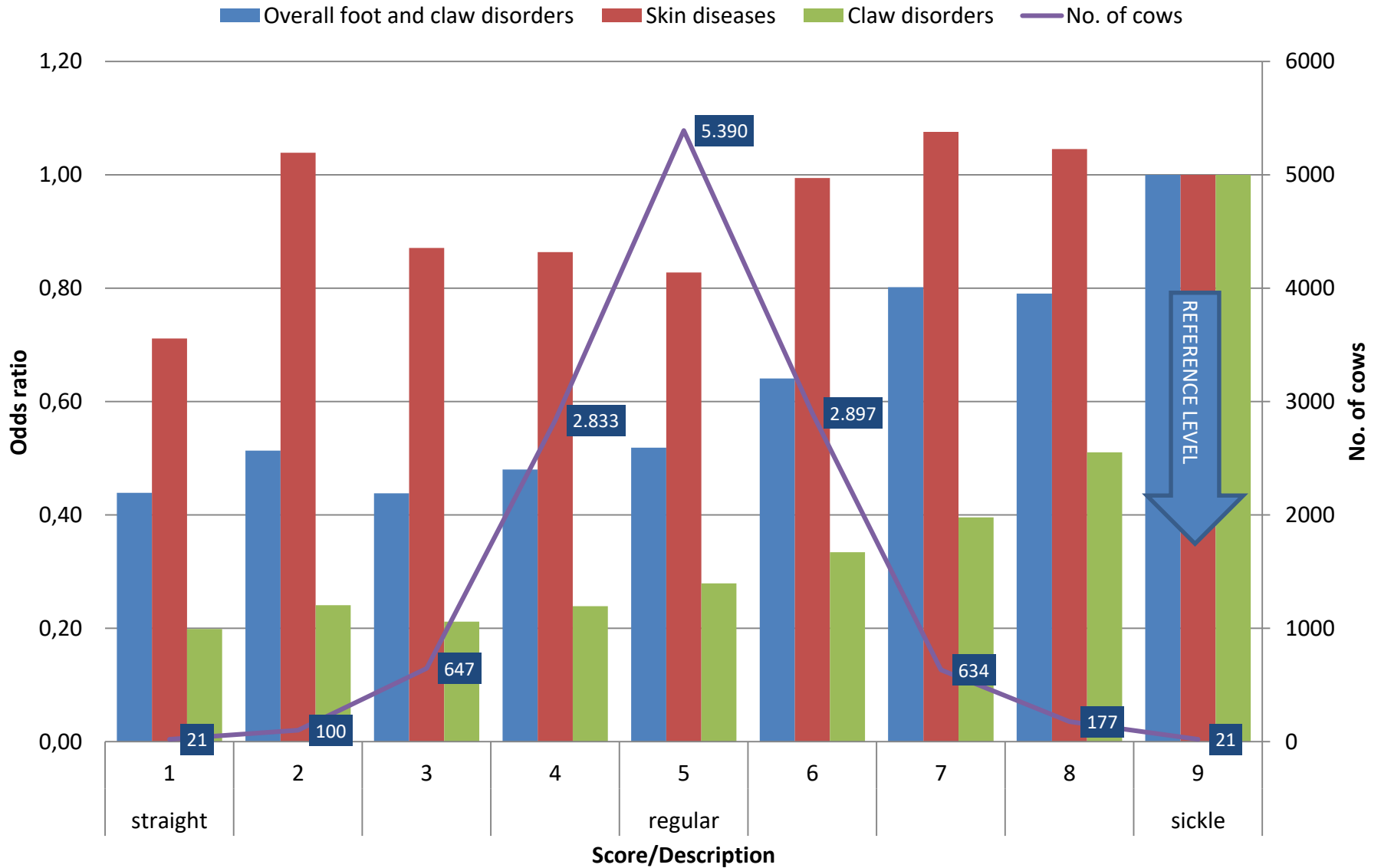


FOOT ANGLE

Overall foot and claw disorders Skin diseases Claw disorders No. of cows

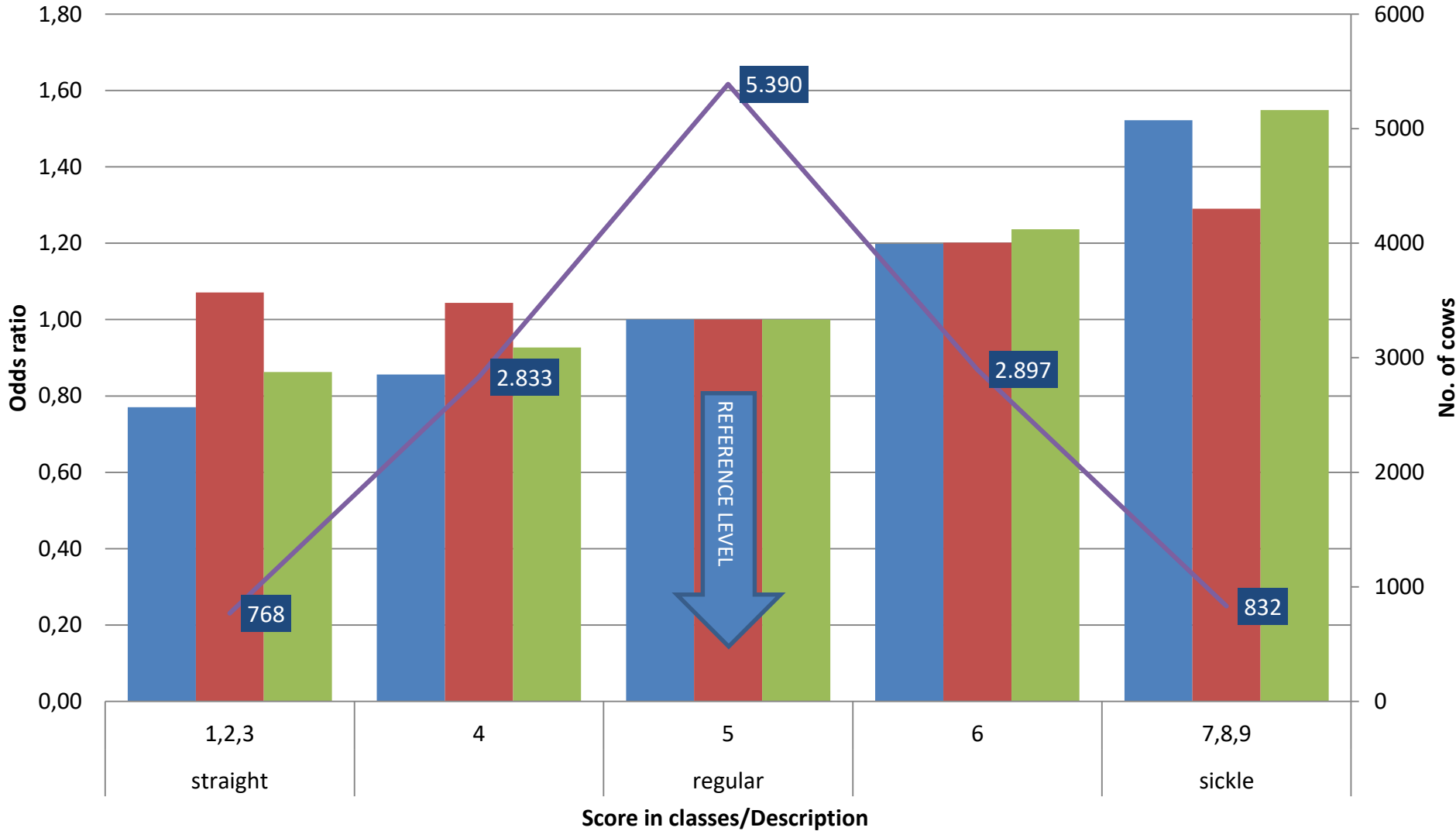


REAR LEG SET - SIDE VIEW



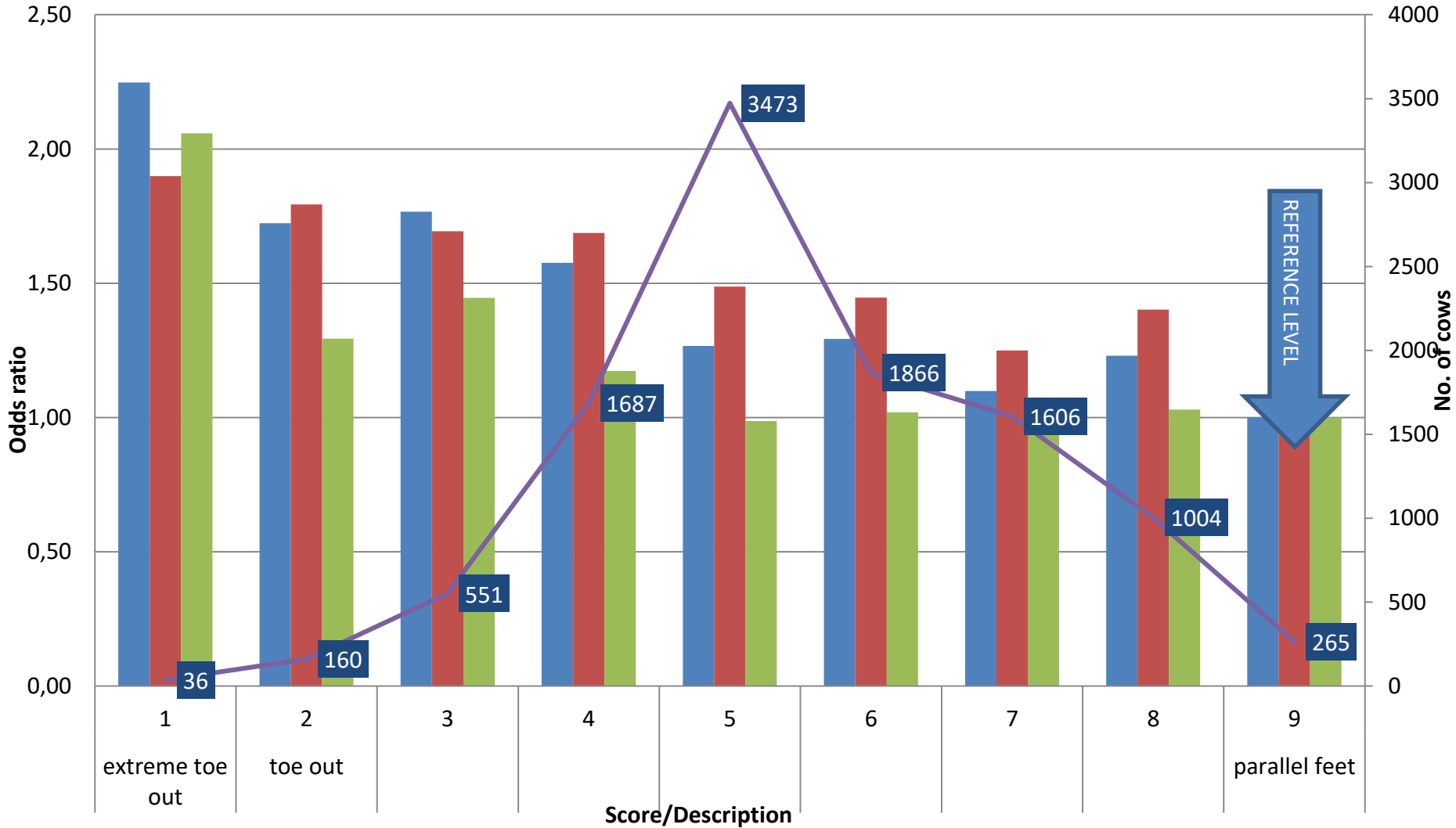
REAR LEG SET - SIDE VIEW

Overall foot and claw disorders Skin diseases Claw disorders No. of cows



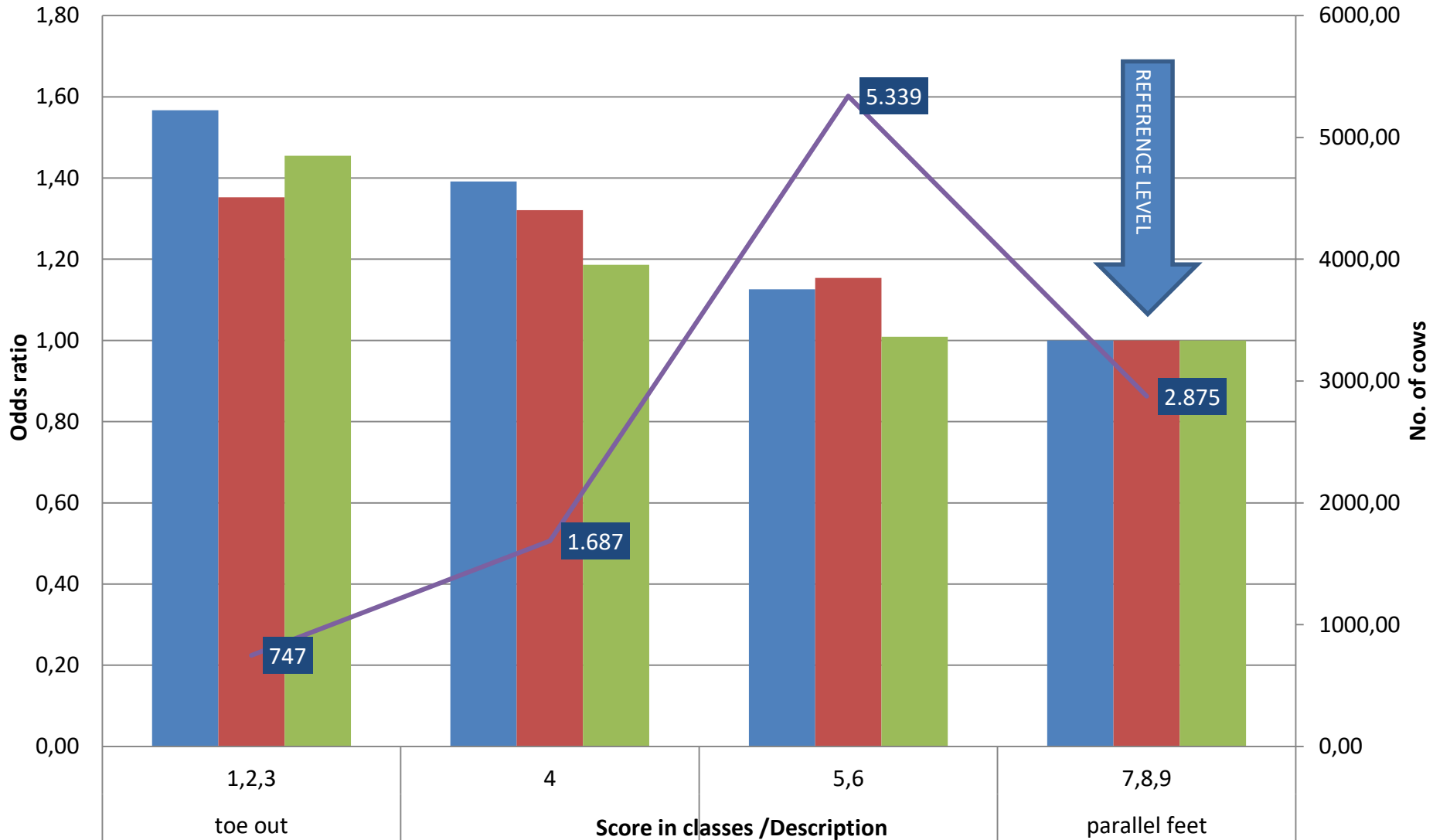
REAR LEGS - REAR VIEW

■ Overall foot and claw disorders
 ■ Skin diseases
 ■ Claw disorders
 — No. of cows

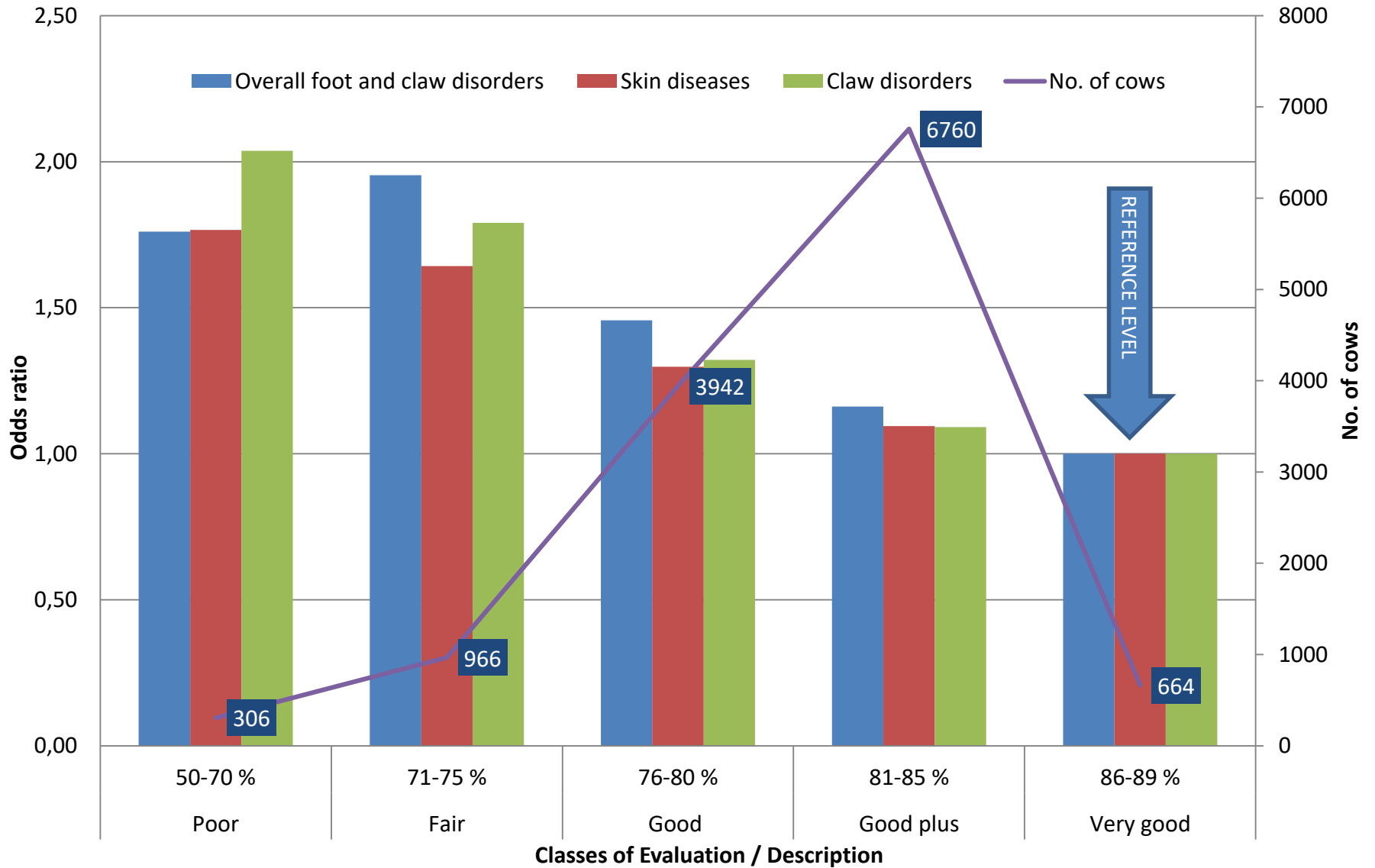


REAR LEGS - REAR VIEW

Overall foot and claw disorders Skin diseases Claw disorders No. of cows

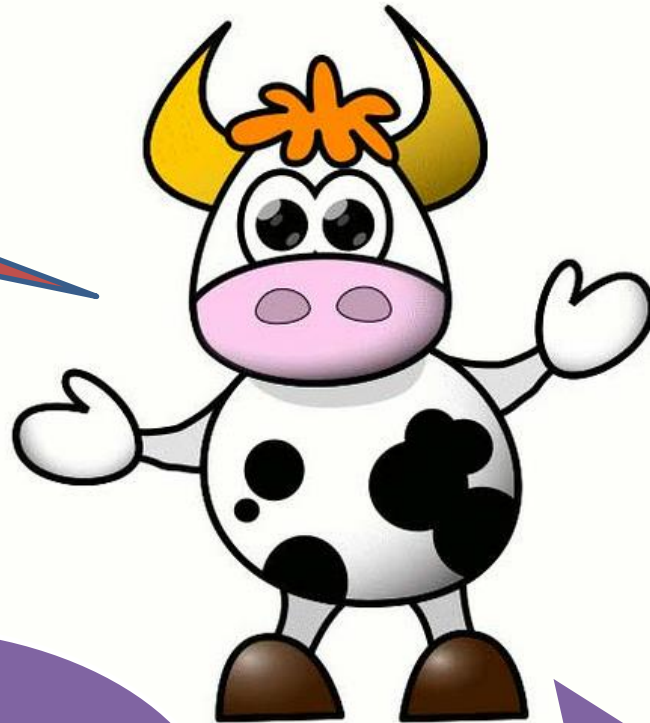


FEET and LEGS score



Answers:

YES, but



*Feet and Legs
Conformation*

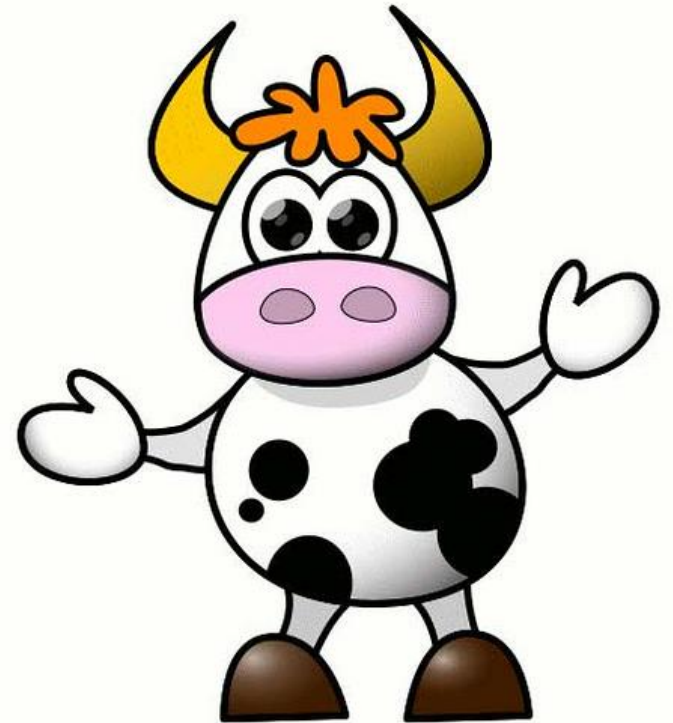
INFO

*Claw and foot
diseases/
disorders*

Conclusions

Hints for problems with foot and claw disorders

- *Low* Feet and Legs score
- *Poor* Locomotion
- *Poor* BCS
- *Sicled* Legs Side View
- *Toe out* Rear View
- *Low* Foot Angle



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Abstract 28 584 session 55 "Heat stress / functional traits in cattle"



THANK YOU FOR ATTENTION!