

Racehorse conformation and its affect on performance

Lara Pocock and Jennie Litten-
Brown



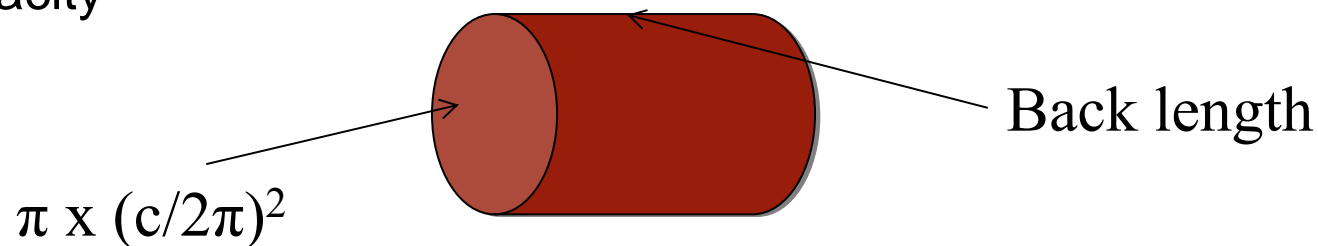
Introduction

- Racehorse conformation has strong links with both performance and movement.
- The shoulder influences the stride length and the type of races a horse will be suitable for.
- Horses with steep shoulders are more likely to suffer from lameness problems (Holstrom, 2003).
- Horses with different types of conformation are suited to better to different types of races.

Materials and Methods

- Conformation data was collected for 171 horses.
- Points measured were; shoulder angle, shoulder length, back length, girth, estimated capacity.
- All racing data was obtained from the Racing Post website; www.racingpost.co.uk

Figure 1: A circular cross section tube to help calculate estimated capacity



Results – Flat only

- Age : rating ($P < 0.001$, $R^2 = 21\%$).
- Height : rating in 2 ($P < 0.01$, $R^2 = 53\%$) and 4 year-olds ($P < 0.05$, $R^2 = 43\%$)
shoulder angle, shoulder length, back length, girth circumference and estimated capacity were not, none of the measurements were correlated to rating in 3 year-olds.
- Rating : girth circumference ($P < 0.05$, $R^2 = 38$) and estimated capacity ($P < 0.05$, $R^2 = 39\%$) in 5, 6, 7 and 8 year olds.
- Rating : height, shoulder angle and shoulder length ($P < 0.05$, $R^2 = 80\%$) in four year-olds
- Rating: height, shoulder length, back length, girth circumference and estimated capacity ($P < 0.01$, $R^2 = 96\%$) in the oldest group.

Conclusions

- Body shape is important in flat racers only where a higher rating is achieved by the larger horse which is in agreement with Smith Thomas (1974), however the age of the animal was important.
- This disagrees with Holstrom (2001) who believed that the conformation – performance relationship was set as young as 8 months of age.
- This work represents a snap shot of data collection at one time point, further research is necessary, however ultimately if this approach worked the results could be used to predict racing success of individual animals.

Acknowledgements The authors gratefully acknowledge the various yards who allowed their horses to be measured including Simon Andrews, Kim Bailey, Mick Channon, Tom Dascombe, Nicky Henderson, John Hills, Jonathan Geake, Henrietta Knight, Seamus Mullins and Richard Phillips.