



LINKAGE OF DRIVING PERFORMANCE TEST PARAMETERS IN OLD KLADRUBER HORSE



Ivan Majzlík, Lea Andrejsová, Luboš Vostrý and Barbora Hofmanová

Czech University of Life Sciences Prague, Kamýcká 129, 165 21 Prague 6, Czech Republic, e-mail: majzlik@af.czu.cz

Motto: A horse's conformation is its overall shape of form.

Conformation has also been described as the relationship between form and function (Wagoner, 1999).

OBJECTIVE

The aim of this study is to assess the relation between driving performance test parameters consisting of type and driving parameters in Old Kladruber Horse breed which is preferable used as a carriage horse.

Possible linkage of parameters could be used as a usefull selection tool (*could lower the number of selection criteria in selection scheme*).

MATERIAL AND METHODS

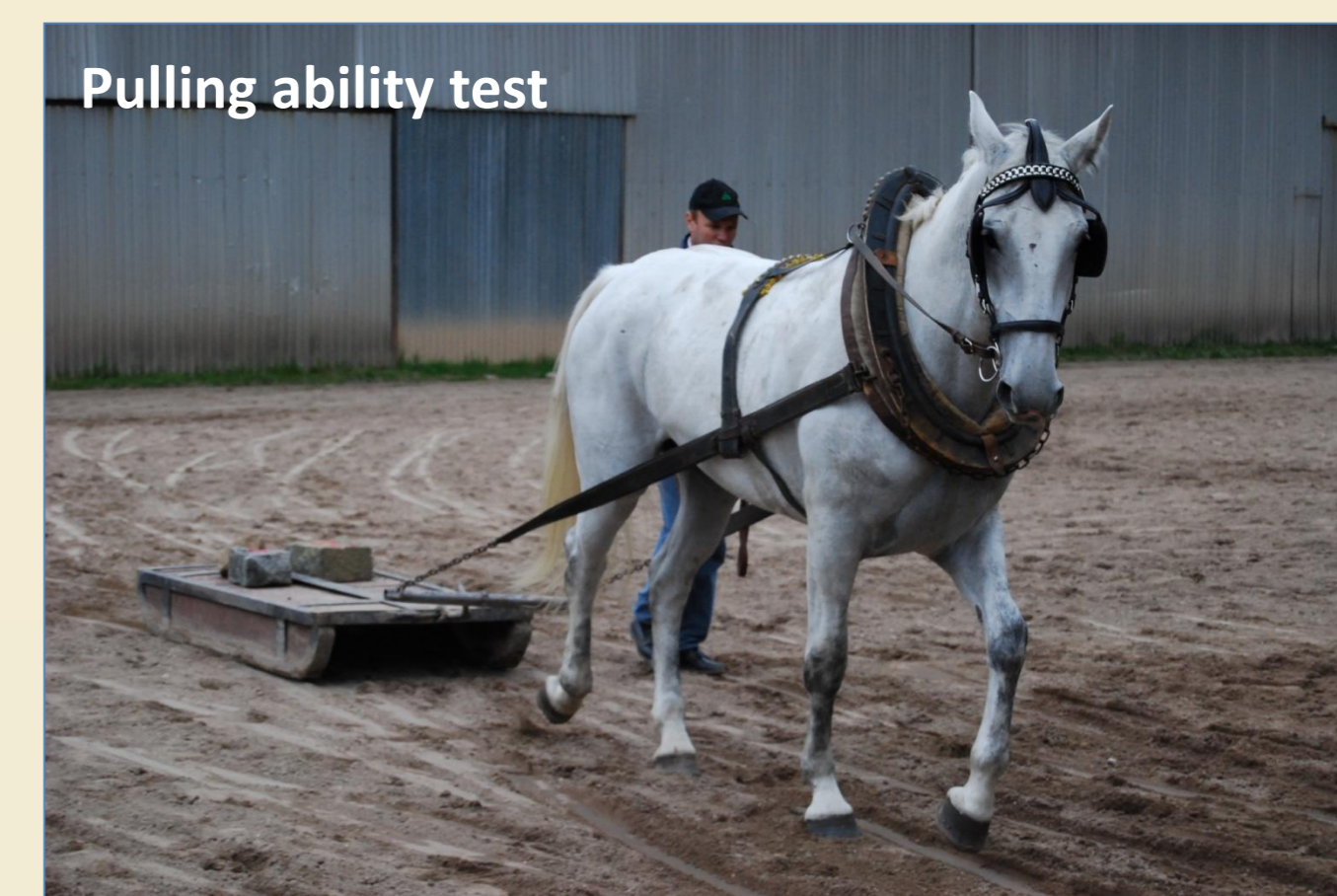
The study is using dataset of performance test of 495 horses at the age at least 4 years tested in space of time 1997-2007.

The performance test for Old Kladruber Horse includes:

- **conformation parameters** (Type, Body line, Fundament, Body harmony, General impression)
- **basic riding abilities** (Riding abilities-dressage test, Walk, Trot, Canter)
- **driving and pulling abilities** (Marathon, Driving course, Driving dressage test, 1st, 2nd and 3rd pulling).

All parameters are evaluated on 10-point scale.

Data were analysed by package SAS (2005) – the linkage of parameters was estimated by Pearson's coefficient.



Tab 1: Pearson's correlation coefficients for the parameters of driving performance test

Parameter	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00	0.69	0.56	0.77	0.30	0.39	0.24	0.36	0.35	0.12	0.28	0.31	0.11	0.06	0.08
2		1.00	0.3	0.88	0.26	0.36	0.22	0.27	0.34	0.08	0.22	0.26	0.14	0.09	0.10
3			1.00	0.72	0.28	0.40	0.29	0.33	0.41	0.06	0.24	0.24	0.11	0.11	0.12
4				1.00	0.28	0.37	0.21	0.28	0.33	0.12	0.26	0.29	0.12	0.08	0.09
5					1.00	0.87	0.43	0.48	0.62	0.08	0.21	0.23	0.11	0.09	0.17
6						1.00	0.58	0.69	0.77	0.12	0.29	0.30	0.16	0.12	0.19
7							1.00	0.64	0.55	0.14	0.29	0.27	0.07	0.04	0.07
8								1.00	0.75	0.18	0.30	0.29	0.12	0.12	0.12
9									1.00	0.09	0.29	0.28	0.12	0.15	0.17
10										1.00	0.37	0.37	0.24	0.20	0.21
11											1.00	0.88	0.19	0.19	0.21
12												1.00	0.19	0.17	0.20
13													1.00	0.79	0.74
14														1.00	0.75
15															1.00

1 - Type, 2 – Body line, 3 – Fundament, 4 – Body harmony, 5 – Riding abilities (dressage test), 6 – General impression, 7 – Walk, 8 – Trot, 9 – Canter, 10 – Marathon, 11 – Driving dressage test, 12 – Driving course, 13 – 1st pulling, 14 – 2nd pulling, 15 – 3rd pulling

black – weak relationship, green – low relationship, blue – middle relationship, red – high relationship

RESULTS

- The means of parameters evaluated varied between 6.5 - 8.7 points with C.V. 8.3 – 16.5 %.
- All correlations showed positive values – see Tab 1.
- The highest values of correlation showed the parameters of conformation ($r_p = 0.40 - 0.88$).
- The parameters of riding abilities are correlated on low to middle level.
- The lowest level of correlations showed the parameters of driving and pulling abilities one to each other and also to all the parameters evaluated.

CONCLUSION

- The linkage of performance test parameters is in a good agreement with the official methodology of performance test for Old Kladruber breed (<http://www.nhkladruby.cz>).
- Higher levels of correlations are typical for complex traits (Type x Body harmony, Riding abilities x General impression).
- Linkage between Riding abilities and General impression is an example confirming that the presentation of the horse is influenced by quality of conformation.
- Particularly the complex traits seem to be suitable for breeding value estimation.