

Practical assessment of reactivity and associations to rideability and performance traits



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Background

- Limited knowledge of assessing reactivity in practice e.g. along with field tests
 - Especially the possibility of using an already existing part of the evaluation system
- Limited knowledge of the associations between reactivity and traits as rideability and performance

Objectives

Increasing the knowledge of practical assessment of temperament

I.to investigate the possibility of measuring reactivity at the evaluation of the conformation for Danish Warmblood horses

II.to investigate how reactivity associates with rideability and performance traits

Data collection



8/10/2009 11:42:50.590

Material and method

- A total of 322 Danish Warmblood mares were scored during the field tests
- A questionnaire was filled in by the owners
 - Questions related to the temperament of the horse
 - Questions related to training, trainer and transportation
- Reactivity was defined by a behaviour score
 - degree of arousal and aversive behaviour



Score	Behaviour
0	No reactions, Forward 1, Backwards1
1	Sideways1, Sideways45-90, Forward5, Backwards5
2	Head movement, Pawing, Snorting, Sideways
3	Defecation, Rear, Passage

Material and method

Two ways of estimating the correlations between reactivity, rideability and performance traits

1. Partial correlation with adjustment for evaluation place and trainer (Pearson)

2. Raw data (Spearman Rank)



Results

- No significant effects of location, trainer and length of training on the behaviour score
- A low correlation between ratings from owners and reactivity
 - Indicating that horses considered nervous by their owner also were scored as highly reactive



Results

- Reactivity had a low negative correlation to rideability
- Indication that horses may be sensitive and response quickly to the riders aid without being reactive
- Reactivity had a low negative correlation to free jumping
 - Less reactive horses reviewed higher grades in free jumping
- No association between reactivity and the performance traits in dressage



Considerations

- No standardized behaviour test
- Influence from handler



Conclusions

- To some extent, it is possible to measure reactivity in a practical situation despite the different locations and backgrounds of the horses
- The results also suggest that highly reactive horses received lower grades in both rideability and free jumping

However, further research is needed including additional validation of a behaviour score

Perspective

Evaluation of reactivity in relation to field tests would provide some opportunities

- For some riders to select the less reactive horses
- To carry out genetic studies with the higher reliability
 - The heritability of reactivity and genetic association to performance traits



Thank you for your attention



Appendix

Behaviour	Description
Defecation	The elimination of faeces, however, in the present study defined as a limited amount of faeces
Snorting	A broad-band sound of forceful exhalation through the nostril but are characterized by an audible flutter pulsation (Waring 1983)
Head movement	Including head shaking, head tossing and throwing up the head
Pawing	Striking in a swift motion made by a single front leg (Waring 1983)
Rear	The forequarters are raised into the air while the hind legs are on the ground (McDonnell & Haviland 1995)
Forward_1	Move forward with slow four beat gait (Strand et al. 2002). Only one to five steps
Forward_5	Move forward with slow four beat gaits (Strand et al. 2002). Moving more than five steps
Backwards_1	Taking one or more steps in walk backwards
Backwards_5	Taking five or more steps in walk backwards
Passage	Leg motion with little or no forward movement of the body (Waring 1983). Animated from trot where the legs are raised with more elevation often associated with audible hoof contact with the ground (Le Scolan et al. 1997)
Sideways_1	Moving sideways in walk (any side) from one step to 45° from the start position (parallel to the judges)
Sideways 45-90	Moving sideways in walk (any side) more than 45° and up to 90° from the start position (parallel to the judges)
Sideways_90	Moving sideways in walk (any side) more than 90 °from the start position, which will require the handler to bring the horse back to a new start position

Appendix

Results from the questionnaire regarding about the training and transport of the mares

General questions about training and transportation

1: Training period before the evaluation?	1 month: 8 (3,3 %)	1-2 month: 100 (41.3%)	2-3 month: 108 (44.5%)	More than 3 months: 26 (10.9%)
2: Who has trained the mare?	Owner: 28 (11.6%)	Professional: 177 (73.1%)	Others: 37 (15.3%)	
3: Where has the mare been trained?	Home: 52 (21.5 %)	The evaluation place: 5 (2.1%)	Other: 181 (75.6%)	
4: How long was the transportation time to the evaluation place?	Less than 1 hour: 107 (44.2%)	1-2 hour: 102 (42.1%)	2-3 hours: 29 (12 %)	More than 3 hours: 4 (1.7 %)
5: Who is answering this questionnaire?	Owner: 119 (74.4%)	Trainer: 19 (11.9%)	Both 18 (11.3%)	Others: 4 (2.5 %)

Questions about the mare's temperament

Questions	1	2	3	4	
6: When the mare meets new things she is?	Nervous 9 (3.7%)	104 (42.9%)	50 (20.7%)	79 (32.6%)	Calm
7: How does the mare react when isolated from other horses in e.g. the riding arena?	Nervous 2 (0.8%)	47 (19.7%)	61 (25.6%)	128 (53.8%)	Calm
8: How does the mare react in novel surroundings?	Nervous 5 (2.1%)	94 (39.2%)	84(35.0%)	57 (23.8%)	Calm
9: How does the mare react to humans?	Suspicious 0 (0%)	8 (3.3%)	21(8.8%)	210 (88.0%)	Trusting
10: How does the mare react to other horses?	Aggressive 1(0.4%)	16 (6.7%)	60 (25%)	163 (68.0%)	Friendly
11: What does the mare do when she meets new things?	Flights 6 (2.5%)	Freezes then flights 37 (15.4%)	Freezes then approaches 122 (50.8%)	75 (31.1%)	Approaches
12: When disturbances from the surrounding environment occur e.g. sound under training the mare is?	Non focused 6 (2.5%)	86 (36.1%)	98 (41.2%)	49 (20.6%)	Focused
13: How does the mare react to new commands?	Unwilling 2 (0.8%)	11 (4.6%)	67 (28.0%)	159 (66.5%)	Willing
14: How is the mare in general when she is trained?	Stubborn 2 (0.8%)	8 (3.3%)	34 (14%)	197 (82.4%)	Obedient
15: How is the mare's general cooperation? She is:	Uncooperative 0 (0%)	7 (2.9%)	27 (11.3%)	206 (85.8%)	Cooperative