Development of linear profiling in the Holsteiner horse - Practical experience -

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Verband der Züchter des Holsteiner Pferdes e.V.

3rd International workshop on linear profiling in the Warmblood Horse on 24th February 2016 in Marbach / Germany

Holstein linear system
DEVELOPMENT

- **Since 2010:** linear profiling of foals using an assessment sheet
- **2014: Pilot study:** linear profiling of mares at the studbook registration and mare performance test in Schleswig-Holstein using
- **2015: Pilot study:** linear profiling of young stallions at the preselection for licensing
- **2015:** Start of the project “Implementation of new sustainable strategies to promote equine health” within the EU-funding program “European innovation partnership” (EIP)
  → One part of the project is the extension of linear profiling
**Holstein linear system**

**DEVELOPMENT**

**Linear profiling of FOALS**

**Since 2010:**
- linear profiling using an assessment sheet
- every trait in the scheme will be judged (“trait by trait”)
- only offspring of young or outcross stallions
- extending the trait scheme in consultation with the judges (adding of new traits etc.; from 10 to 22 traits)

**Since 2016:**
- linear profiling of all presented foals
- only striking traits will be recorded
- using a tablet PC for data collection
- personal documentation support (young breeders)

**Holstein linear system**

**DEVELOPMENT**

**Linear profiling of MARES**

**Since 2014:**
- linear profiling of mares at the studbook registration and mare performance test in Schleswig-Holstein
- using the mobile system of the Oldenburger Verband with an adapted trait scheme or using an assessment sheet
- number of traits: 25 conformation traits  
  38 performance traits  
  36 performance traits for movement under rider
- Since 2016: only striking traits will be recorded (time saving)
Holstein linear system
DEVELOPMENT

Linear profiling of YOUNG STALLIONS

Since 2015:

- linear profiling of young stallions at the preselection for licensing
- the same number of traits as the mares
- different approach of assessment: division of the trait complexes among the four judges (aim: to relieve the judges and to increase the precision of linear profiling)
  - 1. judge: free jumping
  - 2. judge: type, topline, trot
  - 3. judge: forelimbs, walk
  - 4. judge: hindlimbs, canter, correctness (movement), behaviour

Holstein linear system
PRACTICAL EXPERIENCES

<table>
<thead>
<tr>
<th>Year</th>
<th>Foals registration</th>
<th>Mares studbook registration</th>
<th>Mares performance test</th>
<th>Stallions preselection</th>
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<td>419</td>
<td>310</td>
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Holstein linear system

PRACTICAL EXPERIENCES

1. Regular judge training is necessary
to improve the data quality!

- Knowledge of the trait scheme
- Comparability in linear profiling between the judges (avoidance of preferences)
- Using of the full linear scale (-3 to +3)
- Agreement between the linear profiling and the value notes → value notes will be maintained (value notes: foals: type and gait; mares/stallions: type, topline, forelimb, hindlimb, walk, trot, canter)

Holstein linear system

PRACTICAL EXPERIENCES

Linear profiling of 1,786 foals in 2016

Linear trait distribution

Using of the full linear scale!
Holstein linear system

PRACTICAL EXPERIENCES

Linear profiling of 1,786 foals in 2016

Using of the full linear scale!

Linear trait distribution

Number of observations

0 100 200 300 400 500 600

(Breed) Type  Caliber  Hind  Head  Length of neck  Set of neck  Shoulder  Strength of back  Height of withers  Length of croup  Length of hindlimb  Pastern  Forefoot  Hind foot  Gaits

Linear traits

-3 -2 -1 0 1 2 3

Holstein linear system

PRACTICAL EXPERIENCES

Linear trait distribution

Relative frequency (%)

Judge 1 (548 foals)

Judge 2 (385 foals)

(Breed) Type  Caliber  Head  Length of neck  Set of neck  Shoulder  Strength of back  Height of withers  Length of croup  Length of hindlimb  Pastern  Forefoot  Hind foot  Gaits
### Linear profil of a foal

**Holstein linear system**

**PRACTICAL EXPERIENCES**

**Agreement between the linear profil and the value notes?**

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**Holstein linear system**

**PRACTICAL EXPERIENCES**

**Agreement between the linear profil and the value notes?**

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Holstein linear system

PRACTICAL EXPERIENCES

2. Personal assistance for the judges

- On-site support of the judges
- Operating of the Tablet-PC by the assistance (searching for the foal dataset and entry of linear data)

Advantages:

- The judge can focus exclusively on linear profiling
- Substantial time saving (can start directly with linear profiling)

Support by the young breeders:

- Training for the young breeders
- Time problem of students in July (overlapping with examinations)

Thank you!