

**VERBAND HANNOVERSCHER
WARMBLUTZÜCHTER E.V.
(HANN)**

Postal address: Postfach 1743
D-27267 VERDEN
Germany

Telephone: +49 42 31 6730

Facsimile: +49 42 31 67312

E-mail:
hannoveraner@hannoveraner.com

Webpage:
<http://www.hannoveraner.com>

Latest update: March, 1st 2004

1. BREEDING POPULATION

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**3. TESTING PROCEDURES AND DATA
RECORDING**

Stallion testing procedure
Young horse testing procedures
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4. GENETIC EVALUATION

Show-jumping
Dressage
Conformation

1. BREEDING POPULATION

Breed(s)	Hannoveraner
Total number of breeding stallions used for mating	452 (2003)
Total number of mares covered	11,659 (2003)
Number of mares covered by AI	10,364 (2003)
Number of foals registered	7,743 (2003)
Format of ID numbers of horses	31 XXXXXXX
Does the studbook use the unique equine life-number (UELN)? (yes/no)	yes

2. BREEDING OBJECTIVE

Breeding objective (riding horses) (in no more than 50 words)	<ol style="list-style-type: none"> 1) The Hanoverian is bred as a breed, which is particularly suitable for equestrian sports. We strive for horses which, due to their character, their conformation, their movements, their jumping ability and their soundness are suitable as performance and pleasure horses. 2) On this basis we strive for breeding horses with a main emphasis on either dressage, jumping or eventing. 3) With the characteristics mentioned in 1) we also strive for breeding horses which are suitable for driving.
Traits of importance - high: - medium: - low:	<p>dressage, show-jumping, behaviour, fertility, health, conformation and gaits</p> <p>eventing ability</p> <p>driving</p>
Specific breeding policies	special breeding programme for jumping horses

3. TESTING PROCEDURES AND DATA RECORDING

Stallion testing procedure

Disciplines	dressage and show jumping
Name of test	station performance test
Is this test a licensing test? (yes/no)	<p>yes.</p> <p>A total index of at least 90 points are required (0.5 standard deviation below average).</p>
Annual number of tested horses	About 70
Number of test locations	11
Average age of tested horses (years)	3.5
Length of test	<p>70-100 days (private stallions)</p> <p>11 months (State Stud stallions)</p>
Name of recorded variables	<ul style="list-style-type: none"> - Character - Temperament - Willingness to work - Constitution - Ride ability - Jumping ability (free, parcours, cross-country)

	<ul style="list-style-type: none"> - Trot - Gallop - walk
Scale of recorded traits	scores on a range 0 to 10 with increments of 0.5

Young horse testing procedures

Disciplines	dressage and show jumping
Name of test	mare performance test
Is this test a licensing test? (yes/no)	No. However, dams of stallions born after 1990 need to be tested.
Sex of horses	mare
Annual number of tested horses	1,114 (2003)
Number of test locations	37
Average age of tested horses (years)	3
Length of test	1 day (field test) 4 weeks (test at Verden)
Name of recorded variables	trot gallop walk rideability jumping (manner, ability)
Scale of recorded traits	scores on a range 1 to 10 with increments of 0.5

Conformation scoring systems

Discipline	conformation
Name of test	studbook inspection
Is this test a licensing test? (yes/no)	yes. Main Studbook (H): at least a score of 6.0 in each of the recorded variables. Studbook (S): at least a score of 4.0 in each of the recorded variables and at least 5.0 for the overall score. Pre-Studbook (V): at least a score of 4.0 in each of the recorded variables and at least 5.0 for the overall score.
Sex of horses	mares
Annual number of tested horses	2,187 (2003)
Number of test locations	many
Average age of tested horses (years)	4.1

Length of test	1 day
Name of recorded variables (scale traits)	Breed and sex type Quality of body conformation ? Head (a) ? neck (b) ? saddle part (c) ? frame (d) ? forehand (e) ? hind quarters (f) correctness of gaits vault and elasticity (trot) walk overall impression and development overall score
Scale of recorded traits	scores on a range 1 to 10 with increments of 1.

Discipline	conformation
Name of test	conformation test stallions
Is this test a licensing test? (yes/no)	yes
Sex of horses	stallions
Annual number of tested horses	About 100
Number of test locations	1
Average age of tested horses (years)	2.5
Length of test	1 day
Name of recorded variables (scale traits)	Breed and type Quality of body conformation ? Head (a) ? neck (b) ? saddle position (c) ? frame (d) ? fore legs (e) ? hind legs (f) correctness of gaits vault and elasticity (trot) walk canter free-jumping overall impression and development overall score
Scale of recorded traits	scores on a range 1 to 10 with increments of 0.5

4. GENETIC EVALUATION

Studbook entry traits on conformation, gaits and jumping (riding horses / Hanoverian evaluation)

Traits	conformation and performance traits																										
Origin of data	results at studbook entrance of mares and data of mares' performance test and preselection for auctions (all sexes) (only Hanoverian data)																										
Method of evaluation	univariate BLUP animal model																										
Effects considered by statistical model	- year of scoring - location - date																										
Heritabilities	<table> <tr><td>head</td><td>0.42</td></tr> <tr><td>neck</td><td>0.25</td></tr> <tr><td>saddle position</td><td>0.35</td></tr> <tr><td>frame</td><td>0.23</td></tr> <tr><td>breed and sex type</td><td>0.32</td></tr> <tr><td>forelegs</td><td>0.16</td></tr> <tr><td>hindlegs</td><td>0.18</td></tr> <tr><td>correctness of gaits</td><td>0.14</td></tr> <tr><td>trot</td><td>0.37</td></tr> <tr><td>gallop</td><td>0.30</td></tr> <tr><td>walk</td><td>0.27</td></tr> <tr><td>rideability</td><td>0.30</td></tr> <tr><td>free-jumping</td><td>0.41</td></tr> </table>	head	0.42	neck	0.25	saddle position	0.35	frame	0.23	breed and sex type	0.32	forelegs	0.16	hindlegs	0.18	correctness of gaits	0.14	trot	0.37	gallop	0.30	walk	0.27	rideability	0.30	free-jumping	0.41
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Publication scale (mean and s.d.)	100 and 20																										
Definition of base population	Horses born 9-10 years back																										
What breeding values are published?	Breeding values of stallions are published when they have at least 10 progenies tested.																										
Where are breeding values published?	Booklet "Hannoveraner Jahrbuch Hengste"																										
Key reference	Christmann, L., 1996. <i>Zuchtwertschätzung für Merkmale der Stutbuchaufnahme und der Stutenleistungsprüfung im Zuchtgebiet Hannover</i> . Dissertation Göttingen. ISBN 3-89712-027-5																										

Performance traits (riding horses / national evaluation)

Traits	performance traits																																													
Origin of data	Performance traits recorded at stallions' and mares' test and at competition																																													
Method of evaluation	multivariate repeatability BLUP animal model																																													
Effects considered by statistical model	<ul style="list-style-type: none"> - test - rider or quality group of rider - sex - age 																																													
Heritabilities	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Advanced Comp.</td> <td style="width: 40%;">Jumping</td> <td style="width: 30%;">0.10</td> </tr> <tr> <td></td> <td>Dressage</td> <td>0.11</td> </tr> <tr> <td>Young horse comp.</td> <td>Jumping</td> <td>0.18</td> </tr> <tr> <td></td> <td>Dressage</td> <td>0.28</td> </tr> <tr> <td>Mares' test</td> <td>walk</td> <td>0.32</td> </tr> <tr> <td></td> <td>Trot</td> <td>0.35</td> </tr> <tr> <td></td> <td>Gallop</td> <td>0.37</td> </tr> <tr> <td></td> <td>Ride ability</td> <td>0.35</td> </tr> <tr> <td></td> <td>Free Jumping</td> <td>0.37</td> </tr> <tr> <td>Stallions' test</td> <td>walk</td> <td>0.42</td> </tr> <tr> <td></td> <td>Trot</td> <td>0.47</td> </tr> <tr> <td></td> <td>Gallop</td> <td>0.43</td> </tr> <tr> <td></td> <td>Ride ability</td> <td>0.51</td> </tr> <tr> <td></td> <td>Free juping</td> <td>0.46</td> </tr> <tr> <td></td> <td>Parcours jumping</td> <td>0.36</td> </tr> </table>	Advanced Comp.	Jumping	0.10		Dressage	0.11	Young horse comp.	Jumping	0.18		Dressage	0.28	Mares' test	walk	0.32		Trot	0.35		Gallop	0.37		Ride ability	0.35		Free Jumping	0.37	Stallions' test	walk	0.42		Trot	0.47		Gallop	0.43		Ride ability	0.51		Free juping	0.46		Parcours jumping	0.36
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