

**KONINKLIJK WARMBLOED
PAARDENSTAMBOEK
NEDERLAND (KWPN)**

Postal address: P.O. Box 156
3840 AD Harderwijk
The Netherlands

Telephone: +31 341 255 555

Facsimile: +31 341 255 535

E-mail: info@kwpn.nl

Webpage: <http://www.kwpn.nl>

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1. BREEDING POPULATION

Breed(s)	Royal Dutch Warmblood		
Total number of breeding stallions used for mating	riding horses: (dressage + show jumping)	227	(2006)
	harness show horses:	28	(2006)
	Gelderland horses:	10	(2006)
Total number of mares covered	riding horses: (dressage + show jumping)	14,622	(2006)
	harness show horses:	1,368	(2006)
	Gelderland horses:	275	(2006)
Number of mares covered by AI	riding horses: 100%		
	harness show horses: 90%		
	Gelderland horses: 80%		
Number of foals registered	dressage:	4,856	(2006)
	show jumping:	7,434	(2006)
	harness show horses:	1,110	(2006)
	Gelderland horses:	239	(2006)
Format of ID numbers of horses	Until 2003:	98.12345	
	First two digits represent year of birth, the last digits		

	are number within year-of-birth. From 2003: 528003000312345
Does the studbook use the unique equine life-number (UELN)? (yes/no)	Yes. In use for KWPN horses born since 2003.

2. BREEDING OBJECTIVE

Breeding objective (riding horses) (in no more than 50 words)	The KWPN breeding goal aims at sport horses performing at the highest level of international competition (dressage or show jumping) with a good constitution a functional and appealing conformation and a good character.
Traits of importance - high: - medium: - low:	show-jumping, dressage, health, conformation, gaits, character, fertility eventing ability
Specific breeding policies	KWPN distinguishes four types of horses within their breeding policy: the dressage horse, the show jumping horse (both since 2006), the harness show horse and the gelderland horse.

3. TESTING PROCEDURES AND DATA RECORDING

Stallion testing procedure (dressage horses and show jumping horses)

Disciplines	show jumping and dressage	
Name of test	station performance test for stallions	
Is this test a licensing test? (yes/no)	yes	
Annual number of tested horses	about 60	
Number of test locations	1	
Average age of tested horses (years)	3.5	
Length of test	70 days (standard situation)	
Name of recorded variables	<i>dressage horses</i> walk (2x) trot (2x) canter (2x) elasticity posture and balance rideability dressage ability	<i>show jumping horses</i> walk * trot * posture and balance * canter (2x) reflexes (2x) technique (2x) scope attitude rideability show jumping ability * = not part of total score
Scale of recorded traits	scores on a range 1 to 10 with increments of 0.5	

Young horse testing procedures (dressage horses and show jumping horses)

Disciplines	dressage and show jumping	
Name of test	station performance test for mares (EPTM)	
Is this test a licensing test? (yes/no)	mostly used as a performance test can be used as licensing test; studbook entry mares	
Sex of horses	mares	
Annual number of tested horses	about 200	
Number of test locations	2	
Average age of tested horses (years)	3-4	
Length of test	5 weeks (standard situation)	
Name of recorded variables	<i>dressage horses</i> walk (2x) trot (2x) canter (2x) elasticity posture and balance rideability dressage ability	<i>show jumping horses</i> walk * trot * posture and balance * canter (2x) reflexes (2x) technique (2x) scope attitude rideability show jumping ability * = not part of total score
Scale of recorded traits	scores on a range 1 to 10 with increments of 0.5	

Discipline	dressage and show jumping	
Name of test	one-day field test (IBOP)	
Is this test a licensing test? (yes/no)	mostly used as a performance test can be used as licensing test; studbook entry mares	
Sex of horses	mares mostly	
Annual number of tested horses	about 600	
Number of test locations	18	
Average age of tested horses (years)	<6	
Length of test	2-3 hours per group of horses (n = 10)	
Name of recorded variables (scale traits)	<i>dressage horses</i> walk (2x) trot (2x) canter (2x) elasticity posture and balance rideability	<i>show jumping horses</i> walk * trot * posture and balance * canter (2x) reflexes (2x) technique (2x)

Studbook entry procedures (dressage horses and show jumping horses)

Discipline	
Name of test	studbook entry mares / first inspection stallions
Is this test a licensing test? (yes/no)	yes, horses that do not meet minimum requirements do not enter the studbook.
Sex of horses	mares mostly, stallions (1 st inspection), some geldings
Annual number of tested horses	about 3,500
Number of test locations	60
Average age of tested horses (years)	3
Length of test	1 hour per group of horses (n = 6)
Name of recorded variables (scale traits)	<ol style="list-style-type: none"> 1. identification traits (colour, markings, chip nr) 2. height at withers 3. linear traits <ul style="list-style-type: none"> - 19 conformation traits (dressage + show j.) <ul style="list-style-type: none"> shape of body direction of body head-neck connection length of neck position of neck muscling of neck height of withers position of shoulder line of back line of loins shape of croup length of croup stance of forelegs stance of hindlegs stance of pasterns shape of feet heels quality of legs substance of legs - 9 movement traits (dressage + show j.) <ul style="list-style-type: none"> walk: length of stride walk: correctness trot: length of stride trot: elasticity trot: impulsion trot : carriage canter : length of stride canter: impulsion canter: carriage - 8 jumping traits (show jumping) <ul style="list-style-type: none"> take off : direction take off: quickness technique: foreleg technique: back technique: haunches scope elasticity care

	<p>4. general traits</p> <table> <thead> <tr> <th></th> <th><i>dressage</i></th> <th><i>show jumping</i></th> </tr> </thead> <tbody> <tr> <td>conformation</td> <td>yes</td> <td>yes</td> </tr> <tr> <td>free movement</td> <td>yes</td> <td>no</td> </tr> <tr> <td>walk</td> <td>yes</td> <td>yes</td> </tr> <tr> <td>trot</td> <td>yes</td> <td>yes</td> </tr> <tr> <td>canter</td> <td>yes</td> <td>yes</td> </tr> <tr> <td>posture</td> <td>yes</td> <td>no</td> </tr> <tr> <td>free jumping</td> <td>no</td> <td>yes</td> </tr> <tr> <td>reflexes</td> <td>no</td> <td>yes</td> </tr> <tr> <td>technique</td> <td>no</td> <td>yes</td> </tr> <tr> <td>scope</td> <td>no</td> <td>yes</td> </tr> </tbody> </table>		<i>dressage</i>	<i>show jumping</i>	conformation	yes	yes	free movement	yes	no	walk	yes	yes	trot	yes	yes	canter	yes	yes	posture	yes	no	free jumping	no	yes	reflexes	no	yes	technique	no	yes	scope	no	yes
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Scale of recorded traits	<p>1. - 2. cm 3. nine possible scores: A, B, C, D, E, F, G, H, I 4. scores from 40 to 100 with increments of 5</p>																																	

Competition results (dressage horses and show jumping horses)

Type of competition (including discipline and levels)	Show jumping Regional, national level and international levels
Sex of horses	stallions, mares, geldings
Number of horses in competition (per year)	about 3,000
Number of competition events (per year)	1,248 (2002)
Number of starts	167,765 (2002)
Name of recorded traits	highest level of show jumping ever reached during life time
Scale of recorded traits	1 - 14.14 (square root transformation of highest level)

Type of competition (including discipline and levels)	Dressage Regional, national level and international levels
Sex of horses	stallions, mares and geldings
Number of horses in competition (per year)	3,000
Number of competition events (per year)	3,181 (2002)
Number of starts	324,357 (2002)
Name of recorded traits	highest level of show jumping ever reached during life time
Scale of recorded traits	1 - 15.17 (square root transformation of highest level)

4. GENETIC EVALUATION

Competition trait: show jumping (riding horses)

Traits	highest level in competition
Origin of data	studbook inspection: general score free jumping one-day-field-test: jumping ability station performance tests: jumping ability competition: highest level in competition
Method of evaluation	BLUP four trait animal model
Effects considered by statistical model	Studbook inspection - date x location - classifier - sex - age - proportion of thoroughbred One day field test - date x location - age Station performance data - date x location - proportion of thoroughbred Competition data - age - sex
Heritabilities	Studbook inspection; free jumping 0.40 one-day-field-test: jumping ability 0.50 station perf. tests: jumping ability 0.50 competition: jumping 0.15
Genetic correlations	Around 0.80

Publication scale (mean and s.d.)	Breeding values are standardised on a scale with mean 100 and standard deviation of 20 points.
Definition of base population	The base population includes all animals with a breeding value
What breeding values are published?	Breeding values of sires with a reliability $\geq 30\%$. Breeding values of dams above 120 with a reliability $\geq 30\%$ and higher on request.
Where are breeding values published?	www.kwpn.nl/ click to continue / kwpn / breeding / breeding values / www.kwpnstallion.com
Key reference	Huizinga, H.A. and G.J.W. Van der Meij, 1989. Estimated parameters of performance in jumping competition of the Dutch Warmblood horse. <i>Livest. Prod. Sci.</i> 21:333-345. Huizinga, H.A., Van der Werf, J.H.J., Korver, S., Van der Meij, G.J.W., 1991. Stationary performance testing of stallions from the Dutch Warmblood riding horse population. 1. Estimated genetic parameters of scored traits and the genetic relation with dressage and jumping competition from offspring of breeding stallions. <i>Livest. Prod. Sci.</i> , 27:231-244.

Competition trait: dressage (riding horses)

Traits	highest level in competition
Origin of data	studbook inspection: general score free movement one-day-field-test: dressage ability station performance tests: dressage ability competition: highest level in competition
Method of evaluation	BLUP four trait animal model
Effects considered by statistical model	Studbook inspection - date x location - classifier - sex - age - proportion of thoroughbred One day field test - date x location - age Station performance data - date x location - proportion of thoroughbred Competition data - age - sex

Heritabilities	Studbook inspection; free movement 0.35 one-day-field-test: jumping ability 0.40 station perf. tests: jumping ability 0.40 competition: jumping 0.15
Genetic correlation	About 0.70
Publication scale (mean and s.d.)	Breeding values are standardised on a scale with mean 100 and standard deviation of 20 points.
Definition of base population	The base population includes all animals with a breeding value
What breeding values are published?	Breeding values of sires with a reliability $\geq 30\%$. Breeding values of dams above 120 with a reliability $\geq 30\%$ and further on request.
Where are breeding values published?	www.kwpr.nl/ click to continue / kwpr / breeding / breeding values / www.kwprstallion.com
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Studbook entry traits on conformation, gaits and jumping (dressage horses and show jumping horses)

Traits	conformation traits
Origin of data	linear scoring results at studbook entrance and 1 st stallion inspection
Method of evaluation	univariate BLUP animal model
Effects considered by statistical model	- date x location - age - sex - classifier - percentage of thoroughbred (only linear traits)
Heritabilities	2. height at withers 0.60 3. linear traits - conformation traits 0.15 – 0.30 - movement traits 0.15 – 0.30 - jumping traits 0.20 – 0.35 4. general traits - conformation 0.35

