

EAAP Studbook Survey 2015
on the status and development of sport horse breeding

Worldwide, many breeding organizations are involved in the breeding of sport horses. Common breeding goals and well developed logistics for the exchange of genetic material across countries have created an internationalized and highly competitive situation. Recent economic development and structural changes have increased pressure on the studbooks, implying reconsidering and possible adjusting of strategies and practices in the international sport horse scene. An update on the sport horse breeding sector since the 2002 survey is of interest for all stakeholders. This motivated the Interstallion working group of the EAAP Horse Commission to conduct a new survey on key determinants of current breeding programs.

To get a good overview, we would like to kindly ask you for your support and would highly appreciate receiving your answers to the following couple of questions **by at the latest December 14, 2015**. Your answers will be treated confidentially, and only summary results will be published. In case of any needs for clarification, please do not hesitate to contact us!

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Breeding organization _____ or studbook (name): _____
Country: _____
Contact person (name): _____ Phone: + ____ - _____ - _____ Mobile: + ____ - _____ - _____ E-mail: _____ @ _____

I. Basic figures of the breeding population

I.1. For which sport horse breed(s) is your organization responsible? Please indicate their name(s).

Breed no.1: _____
Breed no.2: _____
Breed no.3: _____

I.2. Is there any formal specialization, i.e. subdivision of your studbook?

NOTE: If you have specialized breeding populations with distinct breeding programs, please fill-in separate survey sheets for them to avoid confusion and misleading figures!

- No (single breeding population and breeding program)
- Yes, specialization with distinct breeding programs for:
 - allrounders vs. specialists (dressage jumping others: _____)
 - dressage horses vs. jumping horses
 - others (_____)

I.3. What is the size of the breeding population?		
	current figure (2014)	development compared to 2010-2013
No. of active breeding stallions	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
	(_____ % from other studbooks	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑)
Total no. of broodmares ^a	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
No. of covered mares	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
No. of newly studbook-registered mares ^b	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
No. of foals born	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
^a depending on organization of your studbook: mares registered as active broodmares (e.g. as basis for payment of member fees) or all mares fulfilling the conditions for breeding use; ^b mares that have been successfully presented for studbook inspection (official registration as broodmare usually requiring evaluation and some minimum quality of conformation and gaits)		
I.4. How do you see the role of mating types (AI = artificial insemination) and reproduction techniques?		
	approx. figure	development of importance
natural matings	_____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
AI with frozen semen	_____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
AI with imported semen (fresh/chilled, frozen)	_____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
embryo transfer	N = _____ mares	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
I.5. How would you characterize the choice of stallions by the breeders? Because discipline differences are likely to exist, please indicate, if possible, distinct figures for dressage (D) and jumping (J) horses.		
	approx. figure	development of importance
use of (very) young stallions, i.e. just approved 3-year-olds	_____ % of matings overall	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
	D: _____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
	J: _____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
use of sport-proven stallions, i.e. with own and/or progeny performance (age 9 years and older)	_____ % of matings overall	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
	D: _____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
	J: _____ %	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
I.6. What are the five most important studbooks of origin of the imported genetics in your studbook? There may be relevant differences between disciplines, so you may wish to specify your answer by referring to dressage (D) and jumping (J) horses and possibly horses with other breeding focus.		
studbook of origin	dominating discipline (if applicable)	
1. _____	<input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> other (_____)	
2. _____	<input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> other (_____)	
3. _____	<input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> other (_____)	
4. _____	<input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> other (_____)	
5. _____	<input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> other (_____)	

II. Breeding goal and breeding program

NOTE: If your studbook is responsible for more than a single breed, please answer the following questions for the major riding / sport horse breed. If specialization is reflected in distinct breeding programs, please use separate survey sheets. [see I.2.]

II.1. How would you score the importance of the following traits (or trait groups), from 0 = irrelevant to 3 = highly important, in your breeding program?

	current importance (score 0 to 3)	prospective development of importance
conformation	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
gaits	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
jumping ability	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
dressage	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
show-jumping	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
eventing	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
driving	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
allrounder qualities	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
behavior and temperament	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
health / soundness and durability	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
fertility / reproductive performance	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
other (_____)	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑

Comments: _____

II.2. Which traits or trait groups are today regularly recorded in your studbook?

Please indicate whether and how the recording happens in **foals (F)**, **mares (M)**, **stallions (S)**, and possibly **other horses (O)**, like young horses not necessarily belonging to the active breeding population.

	Valuating scores	Linear scores (descriptive)	Other measure (please specify)
conformation (<input type="checkbox"/> no recording)			
recording in:	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O
scale (N levels) F:	____ - ____ (____)	____ - ____ (____)	_____
M:	____ - ____ (____)	____ - ____ (____)	_____
S:	____ - ____ (____)	____ - ____ (____)	_____
O:	____ - ____ (____)	____ - ____ (____)	_____
gaits in hand and/or free (<input type="checkbox"/> no recording)			
recording in:	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O	<input type="checkbox"/> F <input type="checkbox"/> M <input type="checkbox"/> S <input type="checkbox"/> O
scale (N levels) F:	____ - ____ (____)	____ - ____ (____)	_____
M:	____ - ____ (____)	____ - ____ (____)	_____
S:	____ - ____ (____)	____ - ____ (____)	_____
O:	____ - ____ (____)	____ - ____ (____)	_____

free jumping (no recording)

recording in: M S O M S O M S O

scale (N levels) M: ____ - ____ (____) ____ - ____ (____) _____

S: ____ - ____ (____) ____ - ____ (____) _____

O: ____ - ____ (____) ____ - ____ (____) _____

performance under rider (no recording)

recording in: M S O M S O M S O

scale (N levels) M: ____ - ____ (____) ____ - ____ (____) _____

S: ____ - ____ (____) ____ - ____ (____) _____

O: ____ - ____ (____) ____ - ____ (____) _____

health: clinical examination (no recording)

recording in: F M S O F M S O F M S O

scale (N levels) F: ____ - ____ (____) ____ - ____ (____) _____

M: ____ - ____ (____) ____ - ____ (____) _____

S: ____ - ____ (____) ____ - ____ (____) _____

O: ____ - ____ (____) ____ - ____ (____) _____

health: radiological examination (no recording)

recording in: F M S O

scale (N levels) F: _____

M: _____

S: _____

O: _____

fertility (no recording)

recording in: M S

scale (N levels) M: _____

S: _____

If you referred to data recording in 'other horses' (O), please briefly characterize this group of horses:

II.3. Do you have stallion shows for approval / licensing? If yes, please indicate the criteria evaluated.

- no stallion shows;
- stallion selection (approval for breeding use) based on : sport records
- others (_____)
- stallion shows with evaluation of: conformation
- gaits (in hand free lounge under rider)
- jumping (free under rider)
- behavior / temperament

II.4. If you have no riding test at stallion approval, (how) do you consider performance under rider in subsequent stages of stallion selection?

- not applicable (see Q II.3.: all stallions are tested under rider before they get approved)
- limited breeding use of stallions without own performance under rider:
 - by number of matings (maximum of N = _____ mares or N = _____ coverings)
 - by age, with continued breeding use of stallions from _____ years of age only with:
 - riding test / own performance (e.g. as part of stallion performance test) and/or
 - progeny records for performance under rider
- unlimited breeding use of once approved stallions (regardless of missing performance under rider)

II.5. Please characterize the performance tests in your studbook, considering mares (M), stallions (S), and possibly other horses (O), like young horses not necessarily belonging to the active breeding population.

II.5.1. stallion performance test

<input type="checkbox"/> no specific test	<input type="checkbox"/> field test / duration: N = _____ days <input type="checkbox"/> station test / duration: N = _____ days <input type="checkbox"/> others (_____)
	participants: <input type="checkbox"/> S / age: _____ years <input type="checkbox"/> O / age: _____ years
	traits: <input type="checkbox"/> conformation <input type="checkbox"/> gaits (<input type="checkbox"/> in hand <input type="checkbox"/> free <input type="checkbox"/> under rider) <input type="checkbox"/> jumping (<input type="checkbox"/> free <input type="checkbox"/> under rider) <input type="checkbox"/> behavior / <input type="checkbox"/> temperament
	trait spectrum: <input type="checkbox"/> uniform for all horses <input type="checkbox"/> specialization: <input type="checkbox"/> dressage: no / optional jumping <input type="checkbox"/> jumping: shortened gait test
	riding test: <input type="checkbox"/> own rider + test rider <input type="checkbox"/> own rider only <input type="checkbox"/> test rider only
	requirement for passing: <input type="checkbox"/> test completion <input type="checkbox"/> minimum performance (score)
	approx. number of tested horses per year: N = _____
	organization: <input type="checkbox"/> studbook <input type="checkbox"/> others (_____)
	number of test locations: N = _____ / annual number of tests: N = _____

II.5.2. mare performance test

<input type="checkbox"/> no specific test	<input type="checkbox"/> field test / duration: N = _____ days <input type="checkbox"/> station test / duration: N = _____ days <input type="checkbox"/> others (_____)
	participants: <input type="checkbox"/> M / age: _____ years <input type="checkbox"/> O / age: _____ years
	traits: <input type="checkbox"/> conformation <input type="checkbox"/> gaits (<input type="checkbox"/> in hand <input type="checkbox"/> free <input type="checkbox"/> under rider) <input type="checkbox"/> jumping (<input type="checkbox"/> free <input type="checkbox"/> under rider) <input type="checkbox"/> behavior / <input type="checkbox"/> temperament

II.6.2. mares

- no, there are no health regulations for mares
- yes, mares are required to fulfil certain health criteria:
 - as regular broodmare as elite broodmare as dam of sire

II.6.3. regulated disorders in stallions (S) and/or mares (M)

- over- / underbite (S M) umbilical hernia (S M)
 - roaring (S M) eye diseases / equine recurrent uveitis (S M)
 - other clinical conditions (_____ ; S M)
 - osteochondrosis (OC/OCD): stifle (S M) hock (S M) fetlock (S M)
 - navicular bone alterations (S M)
 - other radiological conditions (_____ ; S M)
- comments: _____
- _____
- _____

II.7. Within your breeding population, do you have any system for motivating breeders to show their horses, i.e. for promoting phenotyping (collection of trait information) in mares (M) and/or stallions (S)?

	existing	planned	comments
<input type="checkbox"/> own conformation evaluation			
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> own performance tests (station, field)			
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> own sport performance			
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> own health examination			
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> own temperament test			
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M <input type="checkbox"/> S	<input type="checkbox"/> M <input type="checkbox"/> S	_____

<input type="checkbox"/> others (_____)				
<input type="checkbox"/> precondition for breeding use	<input type="checkbox"/> M	<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> S _____
<input type="checkbox"/> labelling system	<input type="checkbox"/> M	<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> S _____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M	<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> S _____
<input type="checkbox"/> progeny data (<input type="checkbox"/> conformation <input type="checkbox"/> performance <input type="checkbox"/> health <input type="checkbox"/> temperament <input type="checkbox"/> _____)				
<input type="checkbox"/> labelling system	<input type="checkbox"/> M	<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> S _____
<input type="checkbox"/> relevance for elite status	<input type="checkbox"/> M	<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> S _____
II.8. Do you have a routine genetic evaluation in your studbook? If so, please indicate its role in the practical breeding and where details on the traits, data sources, model etc. can be found.				
<input type="checkbox"/> no routine genetic evaluation (yet)				
<input type="checkbox"/> genetic evaluation for: <input type="checkbox"/> conformation <input type="checkbox"/> performance <input type="checkbox"/> health <input type="checkbox"/> _____				
key reference (e.g. scientific publication, website): _____				

acceptance and use of the genetic proofs (score 0-3, with 0 = irrelevant to 3 = highly important):				
breeders _____		breeding advisors / studbook _____		

III. New concepts and strategies

(NOTE: If your studbook is responsible for more than a single breed, please answer the following questions for the major riding / sport horse breed. If specialization is reflected in distinct breeding programs, please use separate survey sheets. [see I.2.]

III.1. How do you see the role of the different types of performance information? Please score the importance from **0 = irrelevant to 3 = highly important** in the breeding today (2014) and indicate the prospective development as well as figures of the total amount of data (horses with data in your studbook considering the whole data collection period) for the respective sources of information.

	current importance (score 0-3)	future importance
mare performance test (approx. total no. of tested horses: _____)	_____ / <input type="checkbox"/> no such test	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
stallion performance test (approx. total no. of tested horses: _____)	_____ / <input type="checkbox"/> no such test	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
young horse performance test (all sexes) (approx. total no. of tested horses: _____)	_____ / <input type="checkbox"/> no such test	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
competition test for stallions (approx. total no. of tested horses: _____)	_____ / <input type="checkbox"/> no such test	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
sport performance (any competition data)	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
advanced level sport performance	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑

III.2. To which extent do you use external sources of information for decision making? Please score the amount of use and importance from **0 = irrelevant to 3 = highly important** in the breeding today (2014) and indicate the prospective development.

	current use and importance (score 0-3)	future use and importance
performance test data from other studbooks:		
stallion performance / competition test	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
mare and young horse performance test	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
sport records from other countries:		
national competitions	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
international competitions	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
genetic proofs from other countries:	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
sire rankings:		
national sire rankings	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
international sire rankings (WBFSH)	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
comments: _____		

III.3. How do you value the exchange of information across studbooks? Please score the realized intensity of exchange from **0 = irrelevant to 3 = regularly / intense** and indicate the desirable development of exchange intensity.

	realized exchange (score 0-3)	desirable exchange
pedigree data	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
pedigree reference files, e.g. list of duplicates	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
phenotypes: performance test data	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
sport data	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑
genetic proofs	_____	<input type="checkbox"/> = <input type="checkbox"/> ↓ <input type="checkbox"/> ↑

III.4. What are your expectations concerning the studbooks' strategies for future development?

- no (major) change in the relations between studbooks
- increased differentiation (targeted development of the individual studbook)
- increased collaboration (strong background as basis of shaping studbook identity)

III.5. What is your studbook's position concerning the future use of genomic selection?

- no opinion (too little knowledge on how genomic selection could be used in horse breeding)
- interested in genomic selection, but no concrete activities (R&D)
- plans to support R&D on genomic selection in horses
- ongoing R&D on genomic selection in horses
- implementation of genomic selection in the near future (advanced R&D)

III.6. Do you believe that the interest of studbooks in using new breeding methodology could, similarly to the dairy breeding sector, motivate collaboration across studbooks?

- no, structures in the equine sector are and will remain to be based on within-studbook activities
- possibly to some extent (e.g. design of tools for routine genotyping) and/or in the longer term
- yes, benefit from sharing of information and resources is likely to bring about R&D collaboration

III.7. Which collaboration options do you see for your studbook (given information availability and proper regulation of collaboration conditions)?

- none
- exchange / sharing of genotypes only
- exchange / sharing of genotypes and phenotypes

III.8. How is the availability of genetic material (DNA samples) in your studbook?

- no routine DNA sampling of horses (targeted sampling in case of questionable parentage)
- DNA sampling of a certain percentage of foals and/or newly registered horses (parentage check)
- routine DNA sampling of:
 - all foals (since birth year _____)
 - all broodmares (since year of studbook entry _____)
 - all stallions (since year of approval _____)
- storage of: genetic material (e.g. blood, hair bulbs; DNA extraction on request) DNA