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## The role of Interstallion in supporting international sport horse breeding by improved transparency

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### Outline



- ❖ background
  - ◆ development of sport horse breeding and its needs
  - ◆ Interbull & Interstallion
- ❖ installation and establishment
  - ◆ aims & scope of Interstallion
  - ◆ general approach
  - ◆ framework of development, with major challenges and key factors of success
- ❖ perspectives

***INTERSTALLION***

***How it started***

***How it has developed***

***How it may develop further on  
or: How today's breeders think about  
transparency and its increase***

## The sport horse sector today



- key characteristics
  - development from regional or national to international (sport and breeding)
  - high proportion of artificial insemination
  - strong impact of import / export of genetic material (on the market and on the traditional business of studbooks)
  - increasing information demands (riders, studbooks, individual breeders)
- major challenges of sport horse breeding related to:
  - coping with the structural developments and
  - responding to the changing needs (e.g. regarding information management)
- *What does it concretely mean for studbooks and individual breeders?*
- *How could efficient support look like? And who could provide it?*

## Situation of sport horse breeding (I)



- national studbooks with large variation in
    - size (numbers of broodmares, stallions, active breeders)
    - number and strength of competing studbooks within country
    - amount of international activity (own and other studbooks')
  - general structural changes
    - dependence on economic situation (in the country and worldwide)
    - impact of societal developments: 'new generation of breeders' ≠ traditional horse breeders (different knowledge, motivation, expectation and mindset)
- internal conceptual challenges for the studbooks

## Situation of sport horse breeding (II)



- similarity of breeding goals across sport horse studbooks
  - performance under rider
  - major disciplines of riding sport (mainly): dressage and/or show jumping
- similarity of genetics
  - open studbooks implying 'free' flow of genes (semen marketing, horse trade)
  - internationalization of sport horse pedigrees supporting openness of breeders to sources of information and providers of service around breeding

- highly competitive situation for the studbooks
- convenient to confusing situation for the individual breeders

Koenen & Aldridge 2002, Koenen et al. 2004, Thoren Hellsten et al. 2008, Ruhlmann et al. 2009a, Stock et al. 2015

## Options for sport horse breeding



- potential strategies of studbooks and the equine sector to cope with the changes over time:
  - **defensive, protective, reactive**
    - in conflict with the increasing demand of breeders for data, information, facts, ... as basis of decision making
    - ⇒ **high risk of failure** (at least medium-to-long term)
  - **offensive, open-minded and transparent, proactive**
    - possibly difficult to implement sustainably (internal structures, workflow, breeding program), but most likely quickly rewarded by the practice
    - ⇒ **good chances of success** (size / strength, breeding progress)

- **support of transparency as valuable investment in the future of the sport horse sector**

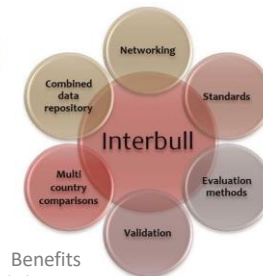
## Parallels to the dairy industry (I)



- high level of internationalization of dairy cattle breeding
- identification of needs to optimize breeding progress
  - standardization and harmonization of data recording
  - sharing of limited resources, incl. expertise
  - information exchange regarding evaluation methods and outcomes

### ➤ formation of INTERBULL

- since 1988 permanent sub-committee of the International Committee for Animal Recording (ICAR)
- supported by its parent organizations EAAP and IDF (International Dairy Foundation), and by FAO (Food and Agriculture Organization of the United Nations)
- managed by an ICAR appointed Steering Group, consisting of members from many different countries



Benefits

<http://www.interbull.org/ib/benefits>

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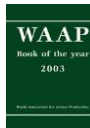
Service Portal

<http://www.interbull.org/ib/customerarea>

## Approach for the sport horse

- in 1998 establishment of the INTERSTALLION working group by
    - WBFSH (World Breeding Federation for Sport Horses)
    - EAAP and
    - ICAR (International Committee for Animal Recording)
  - main aims:
    - reviewing breeding objectives, testing and evaluation systems
    - exploring ways of harmonizing and comparing estimated breeding values (EBVs) across countries
- improving transparency and understanding of practices of studbooks
  - contributing to optimal use of information on sport horses for breeding

Interstallion:  
'spiritus motors' of the work are  
J. Philipsson and E. Bruns  
(WAAP 2003, p.176)



55th Annual Meeting of the European Association for Animal Production  
Bled, Slovenia, 5-8 September 2003, [www.eaaap.org](http://www.eaaap.org)

**Interstallion - on the way to an international genetic evaluation of sport horses**

*E. Bruns, A. Ricard, E. Koenen / Institute of Animal Breeding and Genetics, 37075 Göttingen, Germany  
INRA Centre for research of Evry-sur-Seine, 11230 Evry-Courcouronnes, France \*MSc. Adam de Arnhem, The Netherlands, email: [ehruns@gwdg.de](mailto:ehruns@gwdg.de)*

## From ideas to realization

- lack of transparent information on key facts and procedures
    - **systematic information collection**
  - lack of validated methods / systems and of applications supporting interpretation of results
    - **scientific investigation as basis for recommendations**  
on procedures and possibly actions to improve
  - lack of regular exchange between equine science and practice to reflect on topics of (potential) importance
    - **coordination** of reports, flow of information, discussions, etc.  
**to systematically work on closing the gap**
  - initial phase (survey / review, pilot projects)
    - continued development on scientific basis
- INTERSTALLION as permanent working group of the EAAP Horse Commission since 2006

## Improving transparency ...

### ... by systematic information collection (I)

- results of the initial overview
  - huge variation of breeding programs for sport horses with respect to
    - definitions of breeding objectives
    - testing systems
    - systems for genetic evaluation
  - low transparency constituting a major obstacle
    - for breeders:
      - how to use genetic material from other countries optimally?
    - for INTERSTALLION:
      - how to approach improvement of international comparability?

survey among  
sport horse studbooks  
(1999 - 2002)

(Paper presented at 7th World Congress Applied to Livestock Production, Montpellier, August 2002)  
**TESTING AND GENETIC EVALUATION OF SPORT HORSES IN AN INTERNATIONAL PERSPECTIVE**  
E.P.C. Koenen<sup>1</sup> and L.L. Aldridge<sup>2</sup>  
<sup>1</sup>NRS, PO Box 454, 6800 AL Arnhem, The Netherlands  
<sup>2</sup>Irish Horse Board, Agriculture House (4E), Kildare Street, Dublin 2, Ireland

## Improving transparency ...

### ... by systematic information collection (II)

- work towards adequate international comparison of breeding values
  - survey → status quo (basis) and identification of desired steps
  - further scientific study
    - identification of required steps, indication of possible approaches
- INTERSTALLION pilot projects with focus on:  
connectedness of populations, across country correlations  
(pilot project I performance tests, pilot project II competition performance)
- motivation to ensure transparency, be open for chances, etc.:  
considerable opportunities of validating and improving methods
  - increase of selection efficiency of national breeding programs
  - basis for an international genetic evaluation of sport horses

Thorén Hellsten et al. 2006, 2008 and 2009, Ruhlmann et al. 2006, 2009a and 2009b.e

## Improving transparency ...



### ... by making information accessible 1.0

- initial survey (scientific overview)
  - standard questionnaire (suggested practical routine)
    - population statistics
    - breeding objectives
    - testing methods
    - genetic evaluation systems
  
- compilation and dissemination of detailed and easy to understand information on
  - variation and similarities of testing schemes
  - trait definitions and methods for estimation of breeding values



(Note presented at WBFSH seminar, Budapest, November 5th, 2002)  
**The Interstallion questionnaire: a valuable information source for sport horse breeders**  
Erwin Koenen  
NRS, P.O. Box 454, 6800 AL Arnhem, The Netherlands

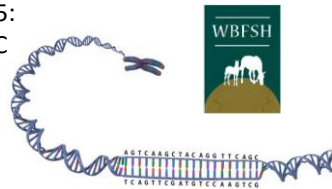
➤ helping the practice to work against the lack of transparency becoming increasingly problematic with further internationalization

## Improving transparency ...



### ... by making information accessible 2.0 (I)

- annual reports and additional seminars for the studbooks at the annual meetings of the WBFSH
  - sporadic invitations in 2010 - 2013
  - (re-)establishment of regular report in 2015: EAAP annual meeting, activities of EAAP HC
  - seminars on (scientific) topics of relevance for the sport horse breeding sectors, e.g. genomics - changes & challenges at WBFSH annual meeting 2016 in Geneva



➤ members of INTERSTALLION as speakers and/or contact persons to recommend invited speakers

# Improving transparency ...

## ... by making information accessible 2.0 (II)

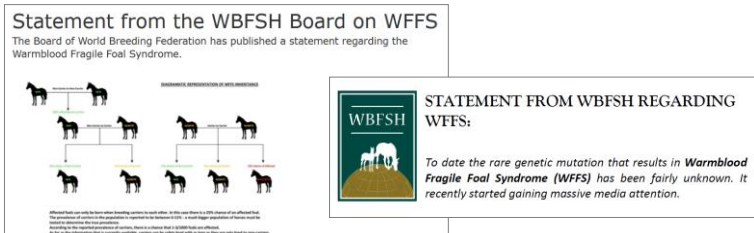
- annual reports and additional seminars for the studbooks at the annual meetings of the WBFSH
- using newly established channels to inform and exchange



# Improving transparency ...

## ... by making information accessible 2.0 (III)

- annual reports and additional seminars for the studbooks at the annual meetings of the WBFSH
  - using newly established channels to inform and exchange
- members of INTERSTALLION and WBFSH SC-CIGA as contact persons to allow canalizing (re-)actions





## Improving transparency ...

### ... by making information accessible 2.0 (IV)

- annual reports and additional seminars for the studbooks at the annual meetings of the WBFSH
- using newly established channels to inform and exchange

### ➤ members of INTERSTALLION feeding sources of information



The screenshot shows a website layout with a dark sidebar on the left containing a navigation menu with items like Home, News, Background, Trait groups, Phenotype recording (with sub-items for Linear profiling and International Workshop), Publications, Contact, Links and further information, and Impress and legal notes. The main content area features a large image of a horse's head, a welcome message for www.equinephenotypes.org, a paragraph of text about the website's purpose, and a call to action for updates. At the bottom, there are two small images of horses and the text 'Equine Phenotypes'.

## Improving transparency ...

### ... by making information more comparable (I)

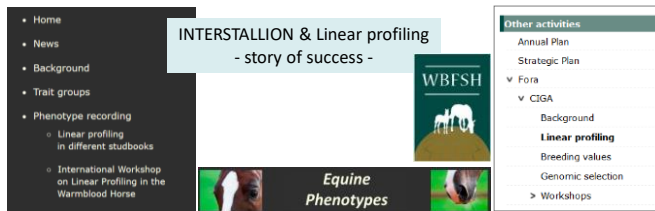
- support of harmonization and standardization
  - independent and general recommendations
    - e.g. scale and reference population for publication of EBVs (Nov. 2005)

# Improving transparency ...

## ... by making information more comparable (II)

- support of harmonization and standardization
  - independent and general recommendations
    - e.g. scale and reference population for publication of EBVs (Nov. 2005)
  - targeted support in important fields of practical work
    - e.g. engagement in promoting the use of linear profiling

➤ helping the practice to improve effectiveness and efficiency of work



# Improving transparency ...

## ... by making information more comparable (III)

- support of harmonization and standardization
  - independent and general recommendations
    - e.g. scale and reference population for publication of EBVs (Nov. 2005)
  - targeted support in important fields of practical work
    - e.g. engagement in promoting the use of linear profiling
- review and study of recent developments in the sport horse sectors



## Perspectives

- opinion of the sport horse sector about transparency and its increase today?
  - breeders: essential
  - studbooks: very important to essential
- development of methods and tools, e.g. genomic selection, increasing the motivation to:
  - join forces
  - use synergies
  - cooperate
  - develop new strategies to cope with changed needs

## Role of INTERSTALLION?!

- actions guided by the final aim to support and benefit the practice, i.e. sport horse (breeding) sector

➤ implications:

- practice-oriented research
- immediate transfer of knowledge and results
- broad / general support  
→ strengthening of the sector = all individual studbooks



How it may develop further on

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- actions guided by the final aim to support and benefit the practice, i.e. sport horse (breeding) sector

➤ implications:

- practice-oriented research
- immediate transfer of knowledge and results
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→ strengthening of the sector = all individual studbooks



- basic requirement: open dialogue and close collaboration between (and also within) science and practice  
→ trust in the principle of collaborative work to mutual benefit

➤ major challenge & key to success:

**convincing and proof of functioning of the collaboration principle in the given framework of equine sport and breeding**

29 Aug 2018 EAAP 69th Annual Meeting, Dubrovnik, Croatia: Interstallion & transparency in breeding (Stock et al.)

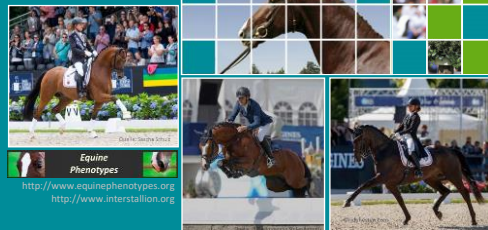
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Contact: PD Dr. habil. Kathrin F. Stock  
(E-mail [friederike.katharina.stock@vit.de](mailto:friederike.katharina.stock@vit.de); phone +49-176-60931357)

# Thank you!

Interstallion WG



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- Karina Christiansen  
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- Bart Ducro  
Wageningen University, Animal breeding and Genomics Centre,  
Wageningen, The Netherlands
- Anne Ricard  
INRA, Jouy-en-Josas and IFCE, Exmes, France
- Åsa Viklund  
SLU, Department of Animal Breeding and Genetics, Uppsala, Sweden
- Katherine Quinn Brady / Alison Corbally  
Horse Sport Ireland, Osberstown, Ireland

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