

# Genetic Evaluation of Sport Horses in Ireland

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# Horse Sport Ireland

- Umbrella body for sport horses founded in 2008
- Amalgamation of:
  - Equestrian Federation of Ireland
  - Irish Horse Board
- Main board contains representatives of sport, leisure and breeding
- Breeding sub-board has responsibility for ISH and Irish Draught studbooks
  - Members are elected by members of Irish Horse Board Co-op

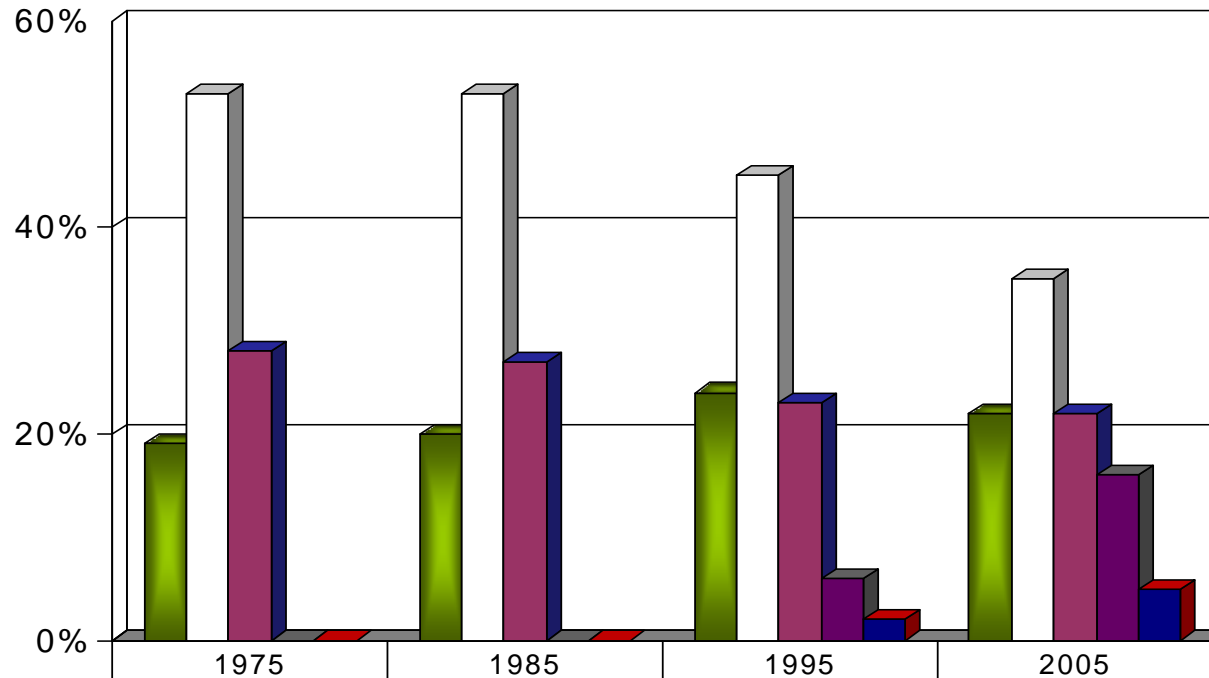


# ISH studbook

- 7,000 foals registered annually
- 20% by foreign sport horse stallions
- 16% by AI
- Stallion classification system differs for sport horses, Irish Draught and Thoroughbred



# ISH studbook genetic composition



■ Irish Draught	19%	20%	24%	22%
□ Thoroughbred	53%	53%	45%	35%
■ Irish Sport Horse	28%	27%	23%	22%
■ Foreign Sport Horse	0%	0%	6%	16%
■ Other	0%	0%	2%	5%



# Breeding goal

To produce a correct, sound, athletic sport horse with good basic paces, pleasant to ride and with a good temperament, to be used as a pleasure or performance horse, capable of competing in showjumping, eventing and dressage at both national and international level.



# Stallion testing procedures

- ◆ Phase 1 – Inspections from 3 years of age
  - ◆ Selects stallions for performance testing
    - ◆ Veterinary examination
    - ◆ Pedigree analysis
    - ◆ Conformation and movement assessment
    - ◆ Initial athleticism assessment (loose jumped or under test rider)
- ◆ Phase 2 – Competition
  - ◆ Must meet minimum standards in open competition in chosen discipline



# Stallion testing procedures

- ◆ Up to 2009 - Approval – second inspection of conformation, movement and athleticism
- ◆ From 2010:
  - 'Acceptable for Breeding' status
    - Temporary status based on initial inspection
  - 'Recommended for Breeding' status
    - 6 to 10 y.o. based on open competition
    - 10 y.o + based on progeny
  - Changing to linear scoring for conformation
  - Same system for mares



# Data recording

- National show jumping results since 1993
  - Ranks in competitions from 0.90m to 1.50m
  - 850,000 records on 25,000 animals
- Scores from conformation (7 descriptors), movement and athleticism assessment on stallions and mares
  - Data from 1995 on 600 stallions and 3,000 mares



# Methodology

- Show Jumping - Multivariate Animal Model BLUP
  - 3 levels of competition
    - High: 1.30m and above
      - 15% of performances
    - Medium: 1.20m
      - 15% of performances
    - Low/Novice: 1.10m and below
      - 70% of performances



# Methodology

- Show Jumping - Multivariate Animal Model BLUP
  - Dependent variable = Normalised score based on rank in each competition
  - Statistical Model effects
    - Breeding Value
    - Permanent Environment
    - Age
    - Grade within level
    - Sex
    - Residual



# Methodology

- Inspection data – Univariate Animal Model BLUP
  - Dependent variable – average score of 3 judges for each trait from Phase 1 inspection
  - Model includes effect of breeding value, sex, age, type of test



# Genetic Parameters

- Showjumping – single performance = 9%
- Showjumping – lifetime performance = 28%
- Athleticism = 19%
- Movement = 27%
- Conformation = 32%
- Temperament = 11%



# Genetic Base

- EBVs are expressed as an index
  - Mean = 100
  - Standard deviation = 20
- Moving base includes all horses between 8 and 12 years of age



# Publication and Use

- EBVs for Approved Stallions are published on the website
- EBVs for other horses are provided to their owner on request
- Used to identify candidates for:
  - Colt retention scheme
  - Elite Thoroughbred access scheme for mares

## HERMES DE REVE (BE)

1995 IHR No: 2785117 Breed: SF Approved: 2003

### Showjumping Evaluation 2007

Showjumping Rank 2007: 1  
 Showjumping EBV: 147  
 Accuracy Showjumping EBV: 0.69  
 No. Performances: 61  
 No. Progeny Evaluated: 0  
 No. Progeny Performances: 0  
 % ISH Progeny Showjumping: n/a

### Inspection Evaluation 2007

Overall Merit Rank 2007: 27  
 Overall Merit EBV: 126  
 Accuracy Overall Merit EBV: 0.58  
 Stallion Inspection Year: 2003  
 No. Progeny Inspected: 0

### Estimated Breeding Values 2007

