

**The SWB data base and research**

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**Swedish Warmblood breed**

**Breeding goal**

*"A noble and durable warmblood horse, which by its good temperament, rideability, good movements and/or jumping ability is internationally competitive"*




**Swedish Warmblood Breed**

- Six major activities with results for an integrated data base


- Performance testing of stallions (40-70/year)**  
- short test (8 days) continuously developed since 1977
- Riding Horse Quality Tests of 4-year-olds**  
- 400-1300 horses of both sexes tested annually since starting in 1973
- 3-year-old tests**  
- replaced previous in-hand shows 1999  
- 800-1300 horses of both sexes tested/year



**Swedish Warmblood Breed**

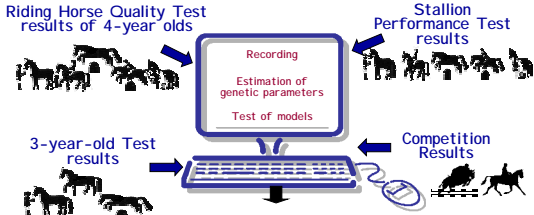
- Six major activities for the data base

- Competition data**  
- summarised and computerized at SLU since early 1970's
- Covering information by reproduction method**  
- basis for ID, parentage control and issuing of passports  
- basis for fertility/foaling statistics
- Estimation of Breeding Values – BLUP-indexes**  
- integrates information from all sources  
- Indexes for stallions, mares and fillies  
- availability on SWB website



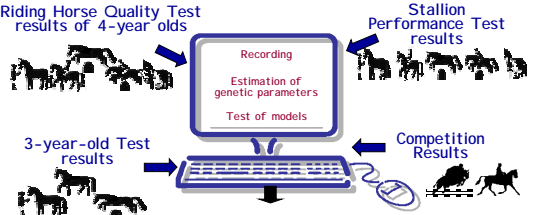
**Gradual computerization of data and build up of the data base**

Collaboration SLU – SWA – Swedish Horse Board  
- many students contributing to computerization of records since 1972 through MSc thesis studies



**Gradual computerization of data and build up of the data base**

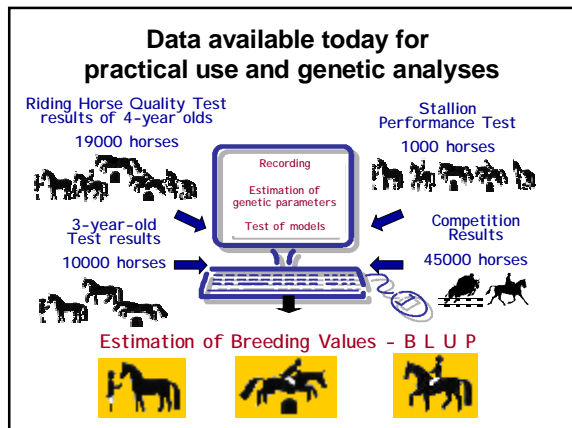
Collaboration SLU – SWA – Swedish Horse Board  
- unique official ID of all horses only of foals born 1980 and later  
- matching different sources of information and integration of data



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JP1 Jan Philipsson; 13-08-2009



### Performance tests of stallions

- q Main test at 4-5 years of age; prel. test at 3 years
- q Station testing for 8 days in Feb-March at Flyinge
- q 50-70 stallions tested per year
- q Conformation, gaits, jumping, rideability, temperament
- q Approval according to a performance index
  - Min index reached for either Dressage or Jumping
- q Results from other EU countries assessed for approval or repeated test

### Performance tests of stallions

- q Heritabilities
  - gaits and rideability 0.3-0.45
  - jumping (0.50-0.55)
- q Genetic correlations with competition results
  - dressage 0.74
  - showjumping 0.88
- q High proportion of approved stallions continue competing at S and international level

### Riding Horse Quality Tests

- An overall test for qualities and talents of the broken horse introduced 1973

- q Conformation incl gaits and size
- q Basic gaits and rideability under own rider
- q Jumping ability (freejumping or jumping under rider)
- q Orthopaedic and medical health examination
  - old info being digitalized
- Heritabilities 0.2-0.4; high gen.corr sport (0.7-0.9)
- Horses are ranked as talents for dressage and jumping

### 3-year-old test in the spring

- q Conformation, gaits at hand and free, freejumping
- q Ranking as talents for dressage and jumping
- q Diploma only for top horses also shown ridden
- Heritabilities of same order as RHQT (0.2-0.4)
- High genetic correlations with RHQT-results (0.8-0.95)

Altogether about 60% of all 3-4-year-olds tested

### Competition statistics

- q Lifetime records for each horse by year of competition since early 1970-ies compiled from annual competition calendars
- q 45,000 horses – 25-30% of registered foals
- q Heritabilities of lifetime records
  - 0.16 for dressage
  - 0.27 for showjumping
- q Simple progeny means used for selection until included in BLUP-indexes 2006

### "Integrated" BLUP-indexes

1. Optimal use of all competition results and results from young horse performance tests
2. Breeding objective: Competition results at the highest levels – **Main indexes for Dressage and Jumping**
3. Indices available also for 9 subtraits (conformation, height, gaits, jumping technique etc) for all stallions, mares and fillies
4. All info available on internet with opportunities for ranking of horses according to various criteria



### Top 15 stallions in SWB for BLUP showjumping

Stallion	Sire	BLUP
Irco Marco	Irco Polo	158
Irco Mena (SWB)	Irco Marco	157
Indoctro	Capitol I	156 (semen import)
Cardento	Capitol I	154
Corland	Cor de la B	153 (semen import)
Quidam de Revel	Jalisco B	151 (semen import)
Camaro M	Calido I	150
Iowa	Libero H	147
Feliciano (SWB)	Irco Marco	146
Cuper	Chambertin	146
Cortez	Cor de la B	144
Cappucino	Carthago	144
Camiell-Flamingo Z	Cathango Z	143
Aerline H (SWB)	Cortez	143
Hip Hop (SWB)	Feliciano	141



All indexes available on the SWA website [www.asvh.se](http://www.asvh.se)



### Example of research by students on SWB



- q Genetic analyses of stallion performance test results and relationships with later competition results
- q Phenotypic and genetic correlations between young horse test results and competition results
- q Genetic progress among stallions and mares by birth year
- q Impact of pedigree completeness of imported horses on EBVs
- q Genetic correlations between results in different countries
- q Phenotypic and genetic variation in foaling rate by different reproduction technologies
- q Relationships conformation – health – performance - longevity



### Conclusions from development and use for research of an integrated data base



- q Systematic recording and computerization of data covering major parts of the breeding program
- q Results available for 30-40 years – 3-5 generations
- q Students a valuable resource for
  - building up information and checking/correcting data
  - conducting relevant research for optimized testing and selection
- q Regular use and advice on continued improvement of the genetic evaluation procedures
- q Frequent use by breeders for information on stallions for selection decisions



Thank you!

