




Improved understanding of breeding values of Swedish Warmblood horses

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Breeders' questions

How come my mare has such a low index?

Are results from young-horse tests as important as competition results?

How much of my mare's index depends on the performance of her progeny?



Background

Estimated breeding values (EBVs) are valuable tools in achieving genetic progress

Efficient use of EBVs assumes that the breeders have trust in the EBVs


More informative presentation of EBVs can improve the trust in EBVs and hence improve the genetic progress




Swedish Warmblood Breed


55,000 riding horses
 5000 broodmares covered annually

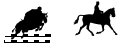
Breeding objective
 "Internationally competitive horses in dressage, show jumping or eventing"





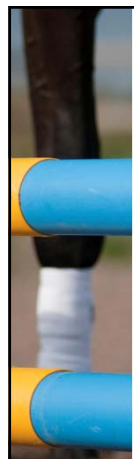
Performance testing

3-year-olds



4-year-olds


Competition


3-5 year-old stallions




Integrated BLUP-indexes

Breeding values for


based on

- 45,600 competing horses (1961-2009)
- 19,800 4-year-olds (1973-2010)
- 12,100 3-year-olds (1999-2010)
- 230,000 horses in pedigree database

Partition of EBVs

Parent average (PA) = average EBV of parents

Own performance (OP) = regressed observations adjusted for fixed effects and parent average

Progeny contribution (PC) = weighted average of the EBV of the progeny adjusted for the mates

EBV throughout life

Foal = PA

Horse with own performance = PA+OP

Horse with own performance and tested progeny = PA+OP+PC

Partition of EBV

Mare born 1980
Good own performances
12 progenies

Information	EBV for dressage
Parent average	117
Own performance	13
Progeny contribution	-4
Total EBV	126

Partition of EBV

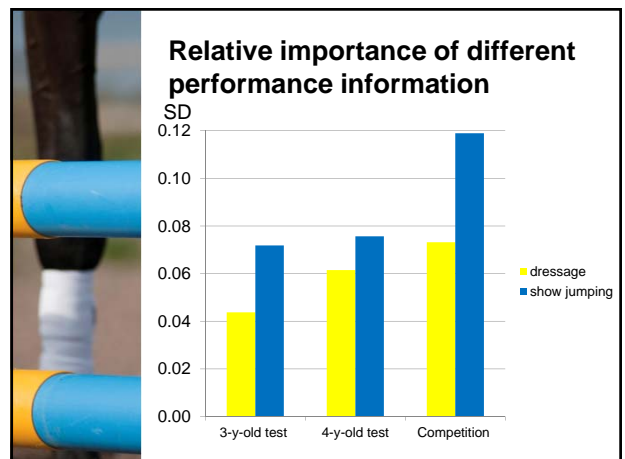
Progeny of previous mare
Good performance at young-horse test

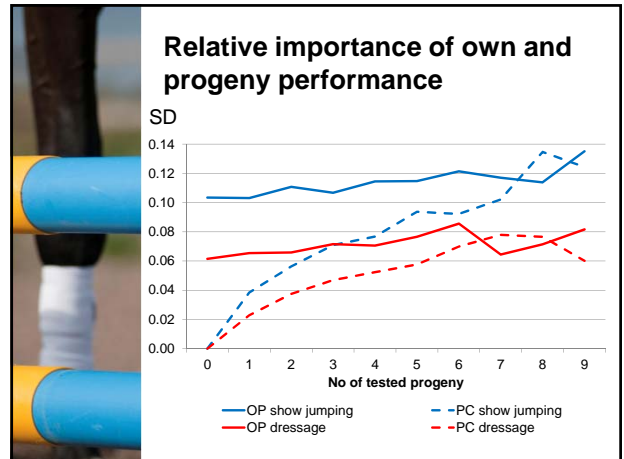
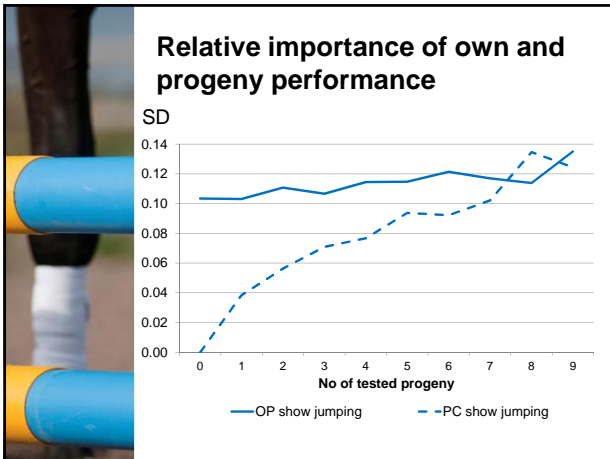
Information	EBV for dressage
Parent average	129
Own performance	-6
Total EBV	123

Partition of EBV

Mare born 1991
Poor own performance
3 progenies

Information	EBV for show jumping
Parent average	123
Own performance	-15
Progeny contribution	8
Total EBV	116





Conclusions

- Partitioned EBVs facilitate the explanation of EBV to breeders
- Competition performance gives more reliability to the EBV than performance at young-horse test
- The own performance has large impact on EBV