

Interstallion study shows:  
**Efficient young horse testing procedures in Europe**  
– **but further improvements possible!**

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*An analysis of results from 17 genetic studies in Europe on performance data of young sport horses, including stallions, has been conducted in order to assess the value of different testing procedures. Results show that all testing systems practised (station tests, field tests and competitions) rightly applied may yield reasonably accurate information on the genetic merit of young stallions. Thus, results are encouraged to be used across countries for genetic evaluation of imported stallions and semen. Short station tests are generally preferred for stallions of breeds selected for both dressage and jumping traits, whereas competition data may be used when only one discipline is selected for. In order to increase efficiency of testing and selection of sport horses, field tests of young horses are essential and should include all genders.*

### **Introduction**

Most warmblood horse breeders aim at breeding horses which can perform well in dressage or show jumping competitions. Throughout Europe, different forms of testing sport horse stallions and young sport horses are practised. The stallion performance tests are used as a tool for early selection of prospective breeding stallions. Ordinary young horse tests serve several purposes. One of the most important is to provide data for genetic evaluation of young horses as well as their parents. Another important purpose is to use these tests as a mean to find talented horses for the sport. To achieve desired genetic progress, *heritabilities* of the traits recorded at tests or competitions have to be reasonably high. Since results at advanced levels of competition are emphasised in the breeding goal for most sport horse breeds, it is also of great importance that tests at young age show highly positive *genetic correlations* with later competition results.

In a project initiated by INTERSTALLION genetic parameters for various tests of young horses, including stallions, were compared. The study was based on a questionnaire, answered by 19 horse-breeding organisations and on the analysis of the results from 17 genetic studies performed in Germany, the Netherlands, France, Sweden and Belgium. The project is meant to provide information on the reliability of assessed breeding values from different testing systems of stallions and other young horses. Another aim is to provide information which indicates opportunities to improve the efficiency of different designs of tests or competitions for genetic evaluation and selection purposes.

### **Different performance testing systems of sport horses in Europe**

In performance testing of sport horses many similarities exist between European breeding organisations. In most countries the testing capacities at station are used to test *stallions* of 3 to 4 years of age for at least 70 days. Exceptions are Great Britain, Hungary and Sweden, where the tests are much shorter, about 8 days (Table 1). In addition to the

*stallion performance tests* (SPT), some breed organisations arrange station tests for *mares*, varying in length between 14 and 50 days. The breed organisations of the Finnish, Norwegian and Selle Français horses do not provide testing capacities at station but instead use *field tests* (FPT) and/or competition results. The field performance test is a one-day test, in most countries used to test young mares and/or geldings. Generally gaits, jumping ability and rideability are judged at the FPT and station tests, and sometimes also conformation. Finally, most organisations use *competitions* as an additional test for young stallions, mares and geldings. Examples of such competitions are the “Cycle Classique” (CC) in France and Belgium, which include series of competitions where young horses, including stallions, compete in age-classes. In these two countries results from the CC constitute a main criteria for selection of stallions. The proportion of young horses tested varies between 10 and 45 % of registered foals in the various countries.

Stallions entering test at station are normally trained by their owners or by professional riders and are preselected due to criteria related to conformation, gaits, and jumping. In general, the test is considered a prerequisite for breeding. Variables recorded during the test describe the basic gaits, rideability, jumping, and behaviour through scores from 1 to 10 given by external judges and sometimes also by the trainer. A summary of the stallions’ performance tests is given in Table 1.

**Table 1. Summary of stallions’ performance tests**

Country	<i>No. of stallions tested/year</i>		Age at test (yrs.)	Length of test (days)
	At station	In field /competition		
Belgium	115	0/?	3-7	Station test: 3 CC <sup>1</sup>
Denmark	20	--	3	30-70
Finland	--	15	3-6	1-5
France	--	230/700	4-6	CC <sup>1</sup>
Germany	300	--	3-4	30 – 100
Hungary	36	--		8
Ireland	5	70	3-5	At station: 84 In competition <sup>2</sup>
Netherlands	80	--	3	70
Sweden	40	20	3-5	8
United Kingdom	40	--	4,5	2 <sup>3</sup>

<sup>1</sup> Yearly series of competition by age-class, “Cycle Classique”

<sup>2</sup> Minimum of 1 year

<sup>3</sup> The test is run over 2 days for 3 consecutive years

**Reasonably accurate results from all the different testing systems!**

Results from all countries were quite in agreement: the specially designed young horse performance tests, including stallion tests, show moderate to high heritabilities for both jumping and dressage traits (0.4-0.5). Young horse performance tests, stallion test results included, are strongly related to competition results later in life as indicated by the high

correlations (0.7-0.9). Among the systems station performance tests of stallions show somewhat higher heritabilities and correlations than one-day field performance tests and competition data. This was expected, as potential breeding stallions are tested under more standardised conditions and also more rigorously judged at several occasions, which reduces the environmental impact on the results.

Interestingly enough the results were quite similar for all breed associations, regardless of existing differences in length of test and testing procedures. Obviously, all breed associations taking part in this study have found well functioning testing systems for their breed. This indicates that results achieved in different countries could be favourably used across countries when assessing the breeding values for licensing of imported stallions and semen.

### **Short, repeated tests preferred**

Clearly station performance tests of stallions can be conducted in shorter test periods than usually have been practised, without compromising the test quality. However, the promising results reported from short tests refer to 4-year old stallions, which usually can be tested at more advanced levels than 3-year olds. For the youngest stallions short but *repeated* tests seem to be the way to go.

### **Combine test results to get the ultimate picture!**

Pedigree plays an important role when horses become selected for one discipline or the other. Therefore, an incomplete, and even biased, picture may be obtained of a stallions' inheritance, if competition results are used as the sole source of information. Individual horses usually only compete in one discipline, although most populations have dual- or multi purposes. Combining the competition data with data from young horse performance tests and competitions for young and mature horses solves this problem, assuming that both dressage and jumping ability is judged at the performance tests.

### **Test many *young* horses for a faster genetic progress!**

Field tests of young horses are more efficient for progeny testing than station tests due to the greater testing capacity and less costs for each tested horse. Such field tests of young horses should include *all genders* to increase the capacity of stallion progeny testing and seeking talents for the sport. With *extensive* performance testing of young horses it is possible to achieve earlier and more accurate results, and thereby enabling a faster genetic progress, than with evaluations based merely on competition results for older, experienced horses. The system with genetic evaluations based primarily on competitions can be quite satisfactory, though, for populations which have a specialised breeding goal, focused on either jumping or dressage, provided many young horses participate in competitions.