

# Sport horse breeding: what are we aiming at?

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World-wide, over 50 breeding organisations run a breeding programme to improve the quality of next generation's sport horses. Their various breeding objectives describe the main traits they intend to select for. With the ongoing internationalisation of sport horse breeding, more breeders have become interested in the breeding objectives of other organisations as they more frequently consider to select foreign stallions, e.g. by importing semen. To provide breeders with more information on the international breeding objectives, the Interstallion committee has reviewed the breeding objectives of 19 European breeding organisations. This article summarises the main findings of this review<sup>1</sup>.

## *Focus on performance and conformation*

In the first part of the study, all defined breeding objectives were compared. This comparison showed that sport horse breeders are interested in multiple traits simultaneously. Traits of interest can be categorised as performance and non-performance traits (Table 1). All organisations frequently mention the sport disciplines show jumping and dressage. Many organisations also want to select for eventing, whilst only a few want to improve driving ability. Conformation is the most frequently considered non-performance trait. Gaits, behaviour, health and fertility are also considered to be important.

**Table 1. Number of organisations for warmblood sport horses that mention a specific trait in their breeding objective (total 19 organisations)**

| Performance traits |    | Non-performance traits |    |
|--------------------|----|------------------------|----|
| show jumping       | 15 | conformation           | 15 |
| dressage           | 13 | gaits                  | 12 |
| eventing           | 10 | behaviour              | 10 |
| driving            | 4  | health and fertility   | 9  |

In the second part of the study, breeding organisations provided more information on the relative importance of individual traits by assigning weights (Appendix). In practice, not all traits were considered equally important. On average, show jumping and dressage received as expected the highest weight. Eventing received a medium weight, whereas driving received the lowest weight. Clearly, all breeding organisations emphasised performance, whilst conformation and gaits also received high weightings.

The Appendix also revealed interesting differences in selection priorities among organisations. Some organisations run a specialised breeding programme. For example, the Holstein and Irish Sport Horse organisations clearly focus on show jumping, whilst the Trakehner studbook puts major emphasis on dressage performance. Surprisingly high relative weights on dressage were given by the Belgian and Selle Français studbooks, otherwise well known for their specialisation on jumping.

## *Opportunities for optimised breeding programmes*

A well-defined breeding objective taking into account the expected future demands is essential for every systematic breeding programme. The international review, however, shows that current breeding objectives are not very transparent. Not all organisations provide detailed information on the type of performance they aim at and explicit information on the preferred discipline (dressage, jumping) or level of competition (national, international) is often missing. To improve the correct understanding by breeders, organisations are encouraged to be more precise in formulating their breeding objectives.

<sup>1</sup>Details of this study are available on [www.interstallion.org](http://www.interstallion.org).

To optimise selection efficiency, testing and evaluation procedures of a breeding programme should be in line with the defined breeding objective. In some cases, clear discrepancies exist between the formulated breeding objective traits and the weights given to the traits that are currently recorded and included in the genetic evaluations. Future studies focussing on the relation of the current procedures to the defined breeding objectives may assist to improve current breeding programmes.

**Appendix. Individual and mean weights (0 = not relevant, 10 = extremely relevant) for sport traits, conformation, gaits, health and fertility.**

| Breeding organisation                         | show jumping | gaits | conformation | Health | dressage | behaviour | fertility | eventing | driving |
|---|--------------|-------|--------------|--------|----------|-----------|-----------|----------|---------|
| Baden-Württemberg (BAD)                       | 6            | 8     | 8            | 5      | 7        | 9         | 4         | 3        | 1       |
| Bavaria (BAVAR)                               | 8            | 9     | 8            | 8      | 9        | 9         | 8         | 6        | 5       |
| Belgian Warmblood (BWP)                       | 10           | 2     | 10           | 10     | 10       | 8         | 8         | 8        | 2       |
| Danish Warmblood (DWB)                        | 10           | 9     | 8            | 7      | 10       | 7         | 7         | 5        | 1       |
| Finnish Warmblood (FWB)                       | 9            | 10    | 10           | 10     | 9        | 9         | 10        | 5        | 1       |
| Hanoverian Warmblood (HAN)                    | 10           | 10    | 8            | 8      | 10       | 10        | 8         | 6        | 6       |
| Holsteiner (HOLST)                            | 10           | 7     | 7            | 9      | 5        | 7         | 7         | 7        | 5       |
| Hungarian Sporthorse (HUN)                    | 9            | 10    | 8            | 7      | 7        | 7         | 8         | 7        | 5       |
| Irish Sport Horse (ISH)                       | 8            | 9     | 8            | 8      | 5        | 7         | 5         | 5        | 1       |
| Dutch Warmblood (KWPN)                        | 10           | 8     | 8            | 9      | 10       | 9         | 9         | 1        | 1       |
| Dutch Riding horse and pony studbook (NRPS)   | 8            | 10    | 10           | 10     | 8        | 10        | 10        | 6        | 6       |
| Norwegian Warmblood (NWB)                     | 9            | 9     | 8            | 9      | 9        | 7         | 8         | 9        | 2       |
| Oldenburg (OLD)                               | 8            | 10    | 8            | 10     | 8        | 6         | 7         | 5        | 3       |
| Selle Français (SF)                           | 10           | 9     | 9            | 9      | 7        | 8         | 8         | 8        | 0       |
| Sport horse breeding of Great Britain (SHBGB) | 8            | 9     | 10           | 9      | 8        | 8         | 10        | 9        | 0       |
| Italian Saddle Horse (SI)                     | 10           | 8     | 7            | 8      | 6        | 7         | 6         | 7        | 6       |
| Swedish Warmblood (SWB)                       | 10           | 8     | 7            | 8      | 10       | 8         | 3         | 6        | 6       |
| Trakehnen (TRAK)                              | 5            | 10    | 9            | 6      | 10       | 8         | 3         | 10       | 1       |
| Mean  | 8.8          | 8.6   | 8.4          | 8.3    | 8.2      | 8.0       | 7.2       | 6.3      | 2.9     |