

Ideas for revised weighting of the traits in total score.

The idea is to revise the weight on the traits in the total score for breeding horses and that revision goes hand in hand with the revision of the breeding goals and of the judging scale.

The main changes are as following, they can be seen in the table below along with further reading describing the changes in more detail:

- To raise the total weight on riding ability as the gaiting ability of the horse is the most important aspect of the horse
- To raise the total weight of the basic gaits in order to put more emphasis on the versatile types of horses within the population (whether they possess four or five gaits)
- To define *canter* as a separate trait. The assessment of *canter* is now combined with the assessment of *gallop* but by doing this, *canter* would have a direct effect on the total score. It is sensible to divide *gallop* and *canter* into two traits with separate weights as *canter* is a three-beat gait and *gallop* is a four-beat gait (they are defined in many countries as two separate gaits).
- To raise the weight on *back and croup*. Recent research and knowledge confirm the importance of this trait with respect to gaiting ability.
- To calculate an extra total score for each horse; a so-called *four-gait* total score where the weight of pace is distributed proportionally to the other traits of riding ability. This would be done for every single horse, no matter if it is a four-gaiter or five-gaiter.

The proposal of the new weighing of the traits in the total score are presented in the table below along with the weights as they are today.

Weights of the traits of conformation and riding ability in the total score (%). The current weights are presented (since 2010) and the proposed new weights:

Trait:	Current:	Proposal:	Trait:	Current:	Proposal:
Head	3	2	Tölt	15	16
Neck, withers and shoulders	10	8	Trot	7,5	9
Back and croup	3	5,5	Pace	10	10
Proportions	7,5	7	Canter	-	4
Quality of legs	6	4	Gallop	4,5	3
Correctness of legs	3	2	Spirit	9	7
Hooves	6	5	General impression	10	10
Mane and tail	1,5	1,5	Walk	4	6
Total:	40	35	Total:	60	65

A *four-gait* total score:

The idea is to calculate an extra total score for each horse; a so-called *four-gait* total score where the weight of pace is distributed proportionally to the other traits of riding ability. This would be done for every single horse, no matter if it is a four-gaiter or five-gaiter. This change will hopefully have positive effects. This is done in order to include an interesting and valuable comparison of all horse (whether they possess four or five gaits), so we will be able to compare all horses as five-gaiter (as we are doing today) and four-gaiters. It will probably have a positive effect on the participation of horses at breeding shows (it improves the outcome for four-gaited horses – some which are very valuable breeding horses and also for good four-gaited horses that are not so much shown today). Moreover, it gives us the opportunity to calculate BLUP for the “four-gait” total score and thereby honor breeding horses that are giving excellent four-gaited horses and are therefore excellent breeding horses.

This idea of a four-gait total score also reflects on the breeding goal itself. Is the breeding goal strictly a five-gaited horse or also a four-gaited horse of excellence? We think so and the knowledge about the pace-keeper gene and the inheritance of gaiting ability tells us that some of the four-gaited horses will and are giving us both four-gaited and five-gaited horses of quality. Of course, we are breeding a gaited horse breed and we want our breeding horses to possess quality tölt, but a four-gaited horse that possess four quality gaits is a breeding horse of great value.

Then it is good to have in mind that the traits of conformation and riding ability are positively correlated and many of them have a high, positive correlation. So, changing the weights, like we are thinking about has a relatively small effect on genetic progress. They also have a rather small effect on the total score in general, but of course they reflect the type of horse we want to promote and have some effect on the ranking of breeding horses.

Further reading and explanations:

The main ideas behind these changes is to put more emphasis on the gaiting ability of the horse and the versatile types of horses within the population. Moreover, the idea is to raise the weight on *back and croup* in the total score. The way to increase the weight on versatility (the horse having four or five quality gaits) is to raise the weight of the basic gaits in the total score, while keeping the high weight on *tölt, pace and general impression*. One way to do that is to raise the total weight of the riding ability and the idea presented here is to raise the total weight of the riding ability from 60% to 65% and that the conformation would then weigh 35% (today it weighs 40%). The gaiting ability of the horse is the most important aspect of the horse and by having a higher total weight on the riding ability we get the possibility of raising the weight on the basic gaits; their combined weight in the breeding system as it is now is 16% but would become 22% in the scenario presented in the table. Regarding the conformation, we have achieved great progress in improving the conformation in recent years, both with regards to function and aesthetics. Then, with regards to the assessment of the gaits in the new scale, the idea is to put more emphasis on the ease with which the horses can move under rider in correct body function. There the conformation plays a highly important role so it can be said that the impact of the conformation on the total

score goes beyond the 35% total weight that is proposed in these ideas.

Conformation

Concerning the conformation, a research that was conducted in Iceland few years ago, about the relationship between conformation and riding ability, showed among other things the advantage of an up-hill conformation and a strong topline in the back. That was advantageous for all the traits of riding ability and that is hopefully better reflected in the draft for the new judging scale. Therefore, it is of importance to raise the weight on *back and croup* in the total score. The idea is to raise the weight from 3% as it has today to 5,5%. The weight on *back and croup* was lowered in the year 2000 and since then it has had a rather low weight. The reason for the low weight on *back and croup* was uncertainty about how to assess this trait. With new information, obtained in the aforementioned research, *back and croup* is assessed in a different way today, with much more knowledge about what is to be rewarded. Although we have achieved genetic gain within the conformation, we still need to improve the topline of the horse; back bearing for example.

Then the idea is to lower the weight a little bit of *neck, withers and shoulder* and *proportions*, the reduction in the weight is 2% and 0,5%, respectively. *Neck, withers and shoulders* would weigh 8% and *proportions* 7%. In this scenario the highest weight within the conformation would therefore be on these core traits with regards to the riding ability: *neck, withers and shoulders, back and croup* and *proportions*. They have today a combined weight of 20.5% and in this idea, they still have a combined weight of 20.5% (weight has been shifted to *back and croup*). So, this would not lower their combined weight in the total score, and they will in fact have a higher relative weight in the total score for conformation. Then the idea is also to lower the weight little bit on *head, leg quality, correctness of joints* and *hooves* and keep the weight on *mane and tail* as it is. As can be seen in the table the reduction in the weighing of these traits is rather small and of these traits, *hooves* would have the highest value. *Hooves* have a strong association with the use of the horse and, they have the highest genetic correlation of these traits with gaiting ability and performance in competition. That is a good indication that hooves are associated with the durability of the horse, as older horses are taking part in competition than breeding assessments.

Regarding the quality and correctness of legs, then we need to do more research on the relationship of these traits with health and longevity. We believe that in the future we will use data from veterinarians to use in practical breeding work, because we certainly want to do serious work in the future to maintain and improve health and longevity of the Icelandic horse. To lower the weight on these traits is not to say that they are not important; they are of course included in the breeding goal and in the breeding assessments and we keep on giving the breeders the best information we have regarding these traits.

Then, regarding the weight on head and mane and tail. The idea is to lower the weight on the head by 1%. The head has of course mostly to do with the beauty of the horse (is in many instances a matter of taste) and although we want to improve the beauty of the population, it can be argued that it should not have a high weight in the total score, but still be included for informative value. Then the *mane and tail* has a lot to do with the marketing value of the horse, although that can maybe also be a matter of taste and should, as with the head, be

mainly included for informative value. So, the weight on mane and tail is not changed and kept at 1.5%

Riding ability.

With regards to the riding ability the idea is to put more weight on the versatility of the horse and raise the weight of the basic gaits. This is done because versatile horses are the types that are of most value and it is certainly the breeding goal to improve all gaits of the Icelandic horse. This is also in line with the modern use of the horse as for example canter is very much used in the training of the horse.

The idea with this new weighting of the traits and the new judging scale is to put more emphasis on quality in the slow gaits; *tölt*, *trot* and *canter*. As for the basic gaits, the idea is to divide *gallop* and *canter* into two separate traits. Up to now, the quality of the *canter* has been combined with the score for *gallop*. By defining *canter* as a special trait, it will have a direct effect on the total score, which we think is of value. It is sensible to divide this into two traits with separate weights as *canter* is a three-beat gait and *gallop* is a four-beat gait (they are defined in many countries as two separate gaits). Then we think it also makes sense to have a higher weight on *canter* than *gallop*. The *canter* is much more used in the training of the horse and especially more used in competition. The *gallop* is of course used in the training (and *gæðingakeppni*) but it has more informational value today than practical value; it tells you about the natural body function of the horse (the carrying ability of the back for instance) and its willingness to perform. As for the *tölt* it is possible (and probably a better way) to put more emphasis on the *slow tölt* through the judge's guidelines where more demand is put on quality in the *slow tölt* when giving the score for *tölt*. With *tölt* we have a clear breeding goal; a horse that possesses quality in the *tölt* at all levels of speed. This is therefore considered a better way than to define *slow tölt* as a separate trait with special weight in the total score. But when we put more demand on the quality of the *slow tölt* when giving the score for *tölt*, then the *slow tölt* really has a weight in the total score, although it is not especially defined.

Then it is proposed to raise the weight of *walk* from 4% to 6%. Walk is an important gait in many respects. All exercises are first taught in walk and it is the basis for other gaits. Then it has a lot to do with the potential of a sale for the horse, no matter the role the horse is intended for; that the horse can walk in a relaxed way. Moreover, the quality of *walk* decides in many ways the possibility of the horse to become a competition horse in four- and five gait and therefore its value.

Then the weight on *spirit* has been lowered, mostly in order to be able to raise the weight of the basic gaits. The weight of *spirit* is now 9% but would become 7%. The *spirit* of the horse is one of the most important traits, but that is also the hardest trait to assess with good security. By raising the weight on *walk*, we are also putting more emphasis on the ability of the horse for relaxation, which is an important aspect of the *spirit*.

The *tölt* must have the highest weight in the total score as that is the key trait of the Icelandic horse. It is proposed to raise the weight on *tölt* by 1% (from 15 to 16%), as it is probably wise, with the increase in total weight of the basic gaits, so that the *tölt* stands out in the weighing as before. It is proposed to keep a high weight on *general impression*, that weighs

10% today and it is the idea is not to change that. *General impression* has a very high genetic correlation with performance in competition and is therefore a very valuable trait.