HORSE SPORT IRELAND

LINEAR PROFILING REPORT 2025

IRISH SPORT HORSE STUDBOOK

Funded under Equine Technical Support

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

TABLE OF CONTENTS

HORSE SPORT IRELAND

INTRODUCTION

Linear profiles have been routinely collected on Irish Sport Horses (ISH) at studbook inspections since 2010. In order to increase the numbers of linear profiles collected on the ISH, Horse Sport Ireland (HSI) seek funding from the Department of Agriculture, Food, and the Marine (DAFM) under the Equine Technical Support Scheme to complete additional profiling.

The objective of this project is to collect linear profiles of Irish Sport Horses at various DAFM supported events that are delivered by HSI throughout the year. These linear profiles are added to the already existing database collected at inspections and other events. It is important to obtain linear profiles of both high-performance horses, as well as the breeding population, in order to build a robust base population for genetic and genomic analysis.

WHAT IS LINEAR PROFILING?

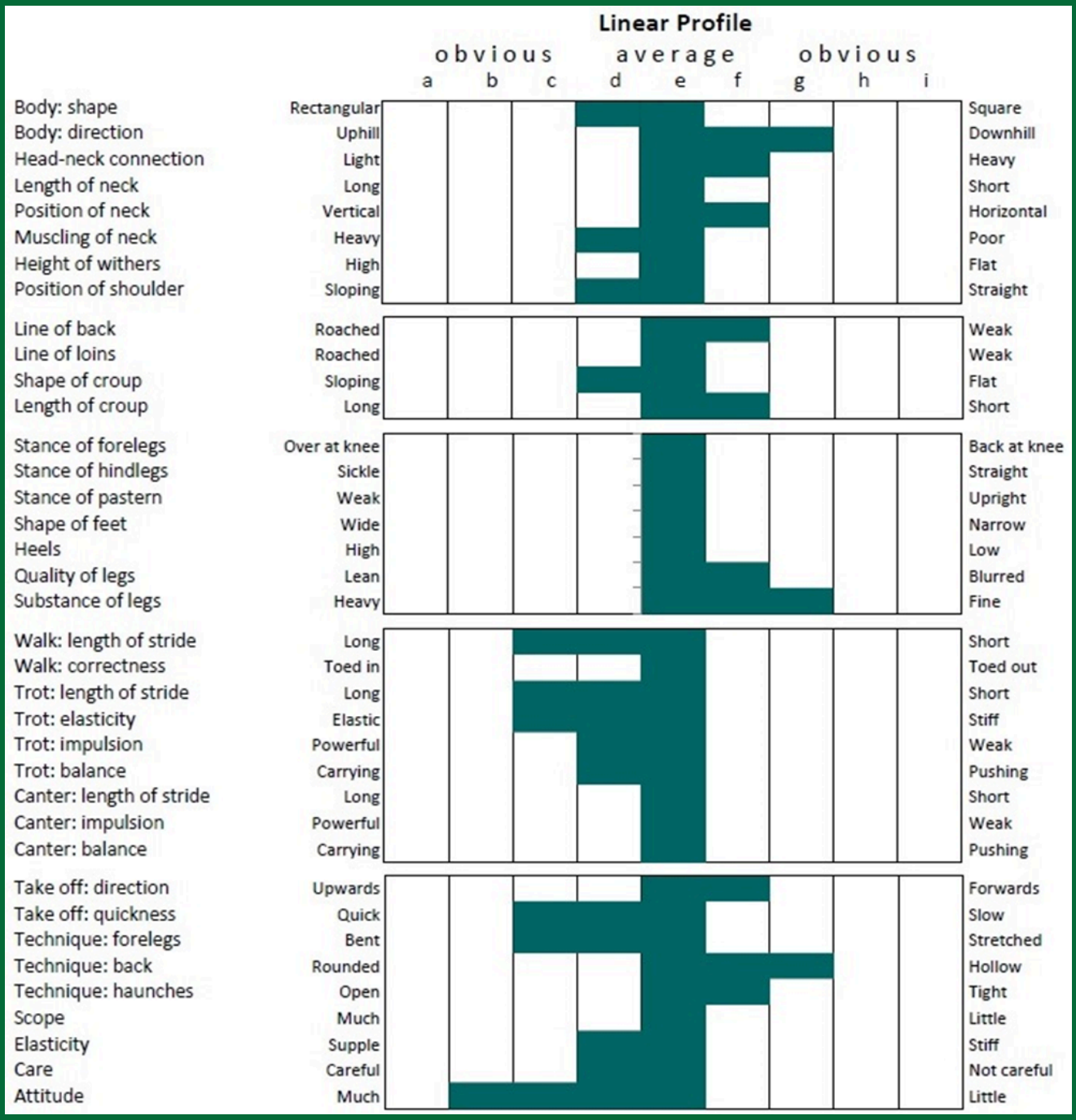
Linear profiling is used to assess conformation, movement and athleticism in horses. A linear profile is a descriptive method of assessing a horse and indicates where a horse lies between the biological extremes for any given trait. For example, the trait 'Stance of Forelegs' describes where a horse lies in relation to the two extremes for that trait, i.e. between obviously 'Back at Knee' and obviously 'Over at Knee'.

At ISH studbook inspections, a linear profile is produced for each horse, which outlines the horse's strengths and weaknesses. This information is provided to the breeder and retained by the studbook for research purposes. Stallions that have successfully come through the Studbook selection process have their linear profile published in the online stallion book and with his results. This is especially useful for mare owners as it provides them with a detailed description of potential stallions they may wish to use in their own breeding programmes, which can be compared to their own mares' profiles.

This form of scoring is used across many sport horse studbooks, however they are applied, assessed, and analysed differently depending on the studbook breeding programme goals and the traits deemed important to the breed in question. For example, the Irish Sport Horse studbook scores a 37-trait linear profile, whereas the Irish Draught Horse studbook scores a 45-trait linear profile. Some warmblood studbooks in Europe score up to 100 traits.

In the future, HSI hope to publish heritability estimates for each of these traits. At present the standard errors associated with these heritability estimates remain high indicating that more data is needed to ensure an accurate analysis. More data will also enable the calculation of the genetic correlations within and among these traits and between the linear traits and future performance traits. This will allow us to determine if the linear traits that are scored, usually at a young age, are good indicators of performance later in life. The linear profile data will also be valuable for genomic research in the future.

IRISH SPORT HORSE SAMPLE LINEAR PROFILE



2025 LINEAR PROFILING PROJECT

The 2025 linear profiling project was conducted over four days at three different events across two disciplines. A total of 125 animals were profiled; this included 59 mares and 66 stallions/geldings.

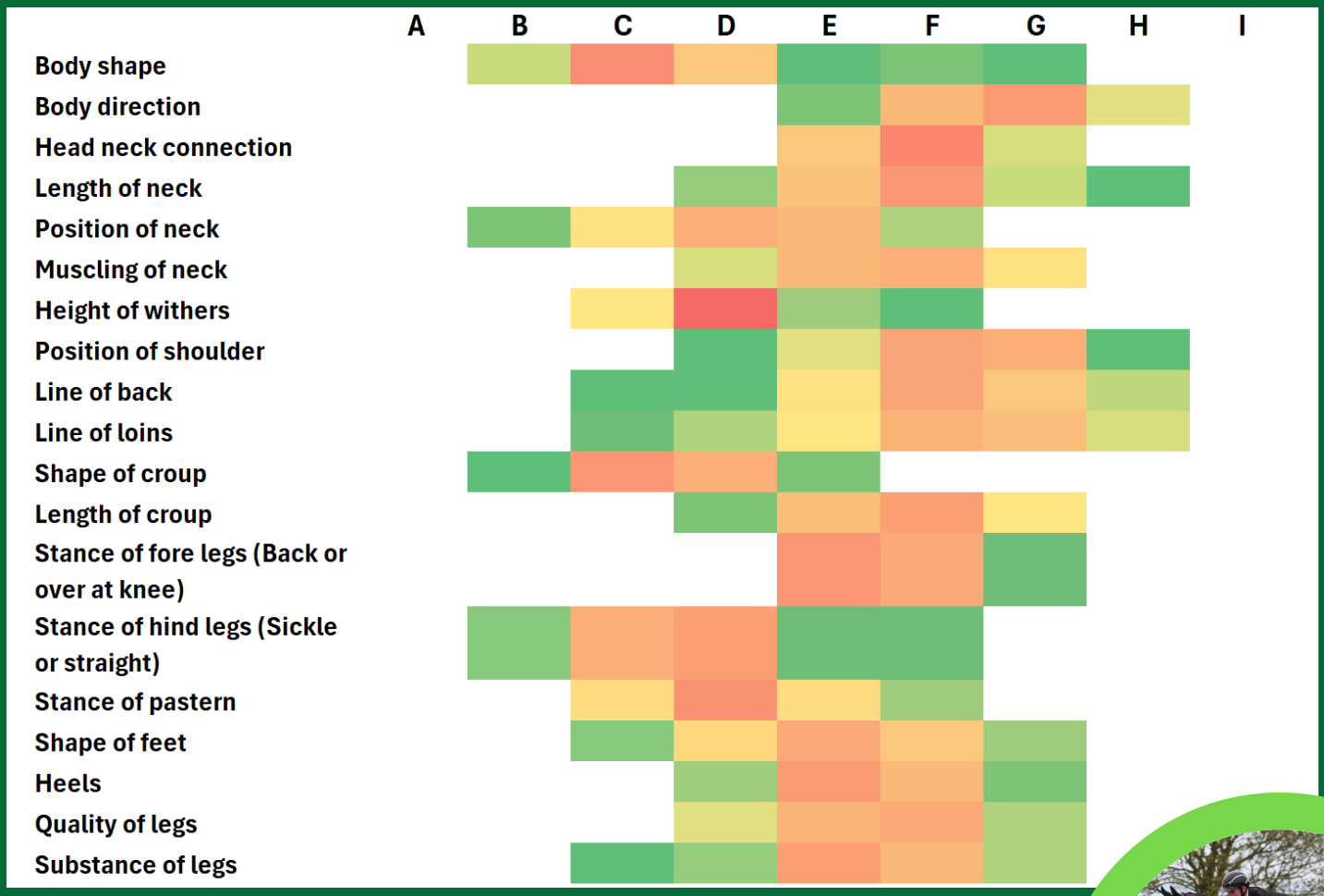
The studbook attended two legs of the three-year-old RDS Loose Performance Qualifiers; one in Mullingar Equestrian Centre and one in Tubberbride Equestrian Centre. The studbook also attended the three-year-old RDS Potential Event Horse Qualifier in Mullingar Equestrian Centre.

The final day of linear profiling was undertaken at the RDS Dublin Horse Show at the first day of the four-year-old Horse showjumping class.

CONFORMATION TRAITS

The majority of linear traits scored during this project sit within the average range of D to F. This is not surprising as performance animals would be expected to have phenotypically normal conformation without extreme defects. It is rare to see the full scale of A to I being used for any conformation trait.

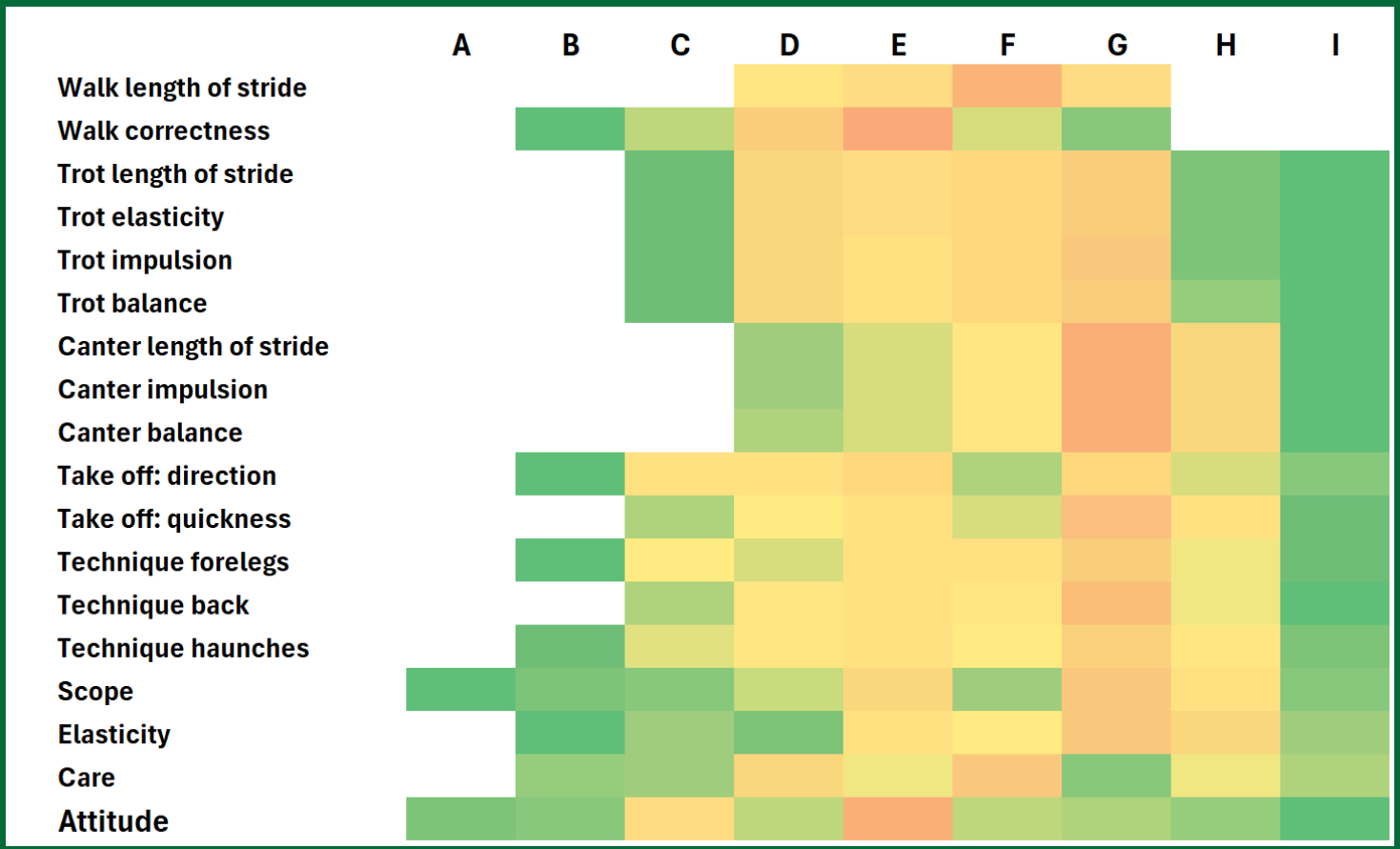
The below image depicts the frequency of scores within each conformation trait where the lighter green indicates a lower frequency and the transition to red indicates a higher frequency of this score. The white spaces indicate these scores were not used for that particular trait.



MOVEMENT & ATHLETICISM TRAITS

The Movement and athleticism traits are generally scored using more of the scale than the conformation traits but once again the most commonly observed scores are in the range of D - F. Scope and Attitude traits are scored while the horses were loose jumping are the only traits that used the full A - I scale

The use of the heatmap to visualise the scale is helpful as you can quickly spot which traits are trending towards the positive or negative side of the scale and the similar trends within trait group i.e., within the trot or canter traits.



SUMMARY

In 2025 the majority of horses linear profiled displayed average scores for the 37 profiled traits; with some extremes displayed in the movement and athleticism traits. This is not unexpected as a horses movement and athleticism can be influenced by the environment. In comparison, the conformation of a horse is not going to move on the scale depending on the temporary environment it finds itself in.

However, it is important to note that the relative sample size (n = 125) is small and that all of these animals were scored at competitions so were likely preselected and not representative of the full Irish Sport Horse population. Further analysis including the breeding population will enable us to compare these traits among the horses that compete versus those that do not get a chance to.

CONTACT US

00353 (0)45 850 800

info@horsesportireland.ie

www.horsesportireland.ie

HORSE SPORT IRELAND

Funded under Equine Technical Support

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine