



**HORSE SPORT  
IRELAND**

**LINEAR PROFILING REPORT 2024**

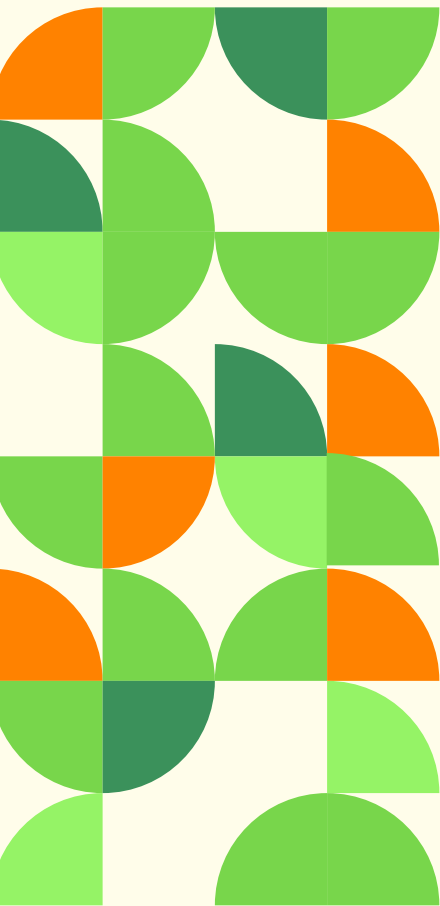
# **IRISH SPORT HORSE STUDBOOK**



Funded under Equine Technical Support



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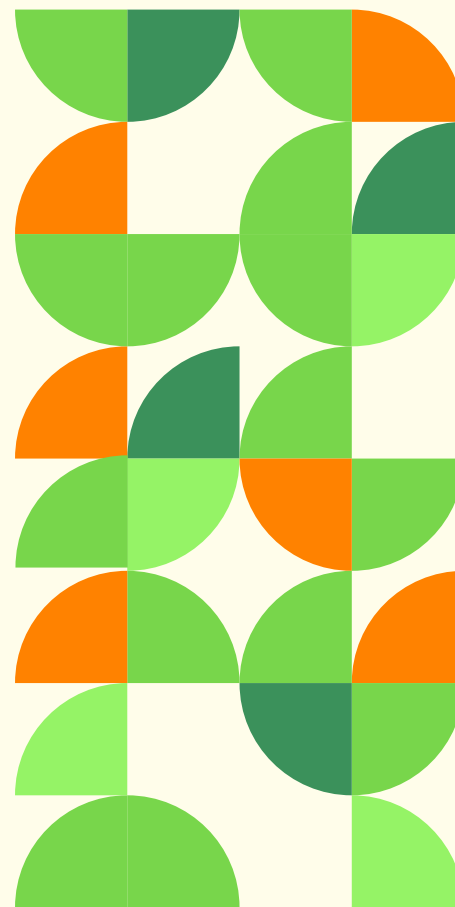
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# INTRODUCTION

Each year the Irish Sport Horse studbook seeks funding from the Department of Agriculture Food and the Marine (DAFM) Equine Technical Support Scheme to complete additional linear profiling of Irish Sport Horses.

The objective of this project is to collect linear profiles of Irish Sport Horses at the Studbook Series and RDS loose jumping qualifiers. These linear profiles are added to the already existing database of profiles collected at both studbook inspections and shows. It is important to obtain linear profiles on 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. Following inspection 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 stallion book and online. 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 and assessed 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 applies a 37 trait linear profile, whereas the Irish Draught Horse studbook applies a 45 trait linear profile.





# IRISH SPORT HORSE SAMPLE LINEAR PROFILE

Linear Profile										
		Obvious			Average			Obvious		
		a	b	c	d	e	f	g	h	i
Condition	N/A					N/A				N/A
Mouth	N/A					N/A				N/A
Head	N/A					N/A				N/A

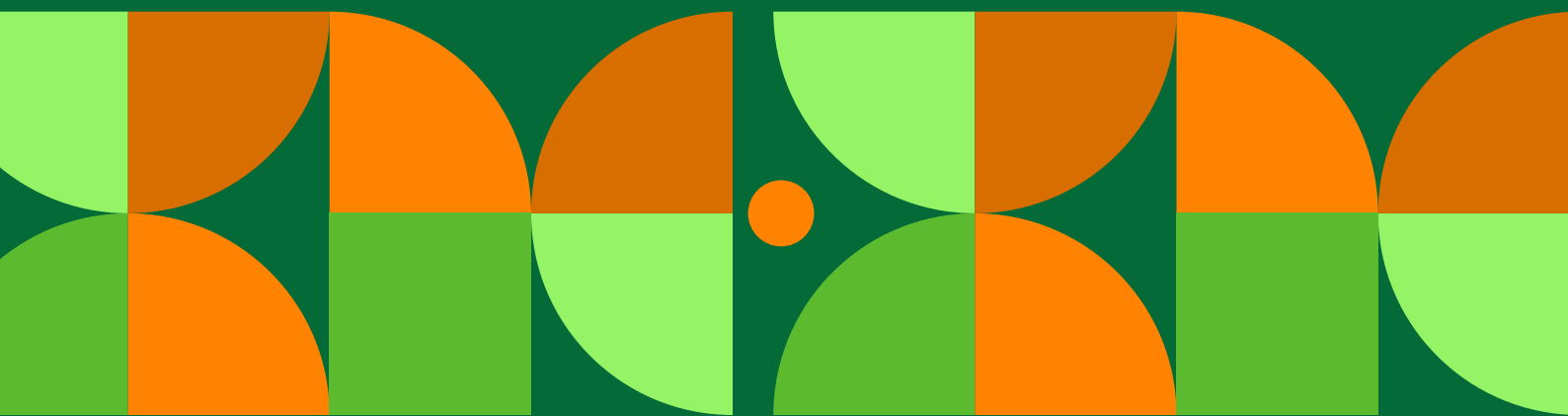
Conformation		Obvious			Average			Obvious		
		a	b	c	d	e	f	g	h	i
Body Shape	rectangular					e				square
Body Direction	uphill						f			downhill
Head/neck connection	light				d					heavy
Length of neck	long					e				short
Position of neck	vertical						f			horizontal
Muscling of neck	heavy				d					poor
Height of withers	high			c						flat
Position of shoulder	sloping					e				straight
Line of back	roached				d					weak
Line of loins	roached					e				weak
Shape of croup	sloping				d					flat
Length of croup	long						f			short
Stance of forelegs	over at knee						f			back at knee
Stance of hindlegs	sickle					e				straight
Stance of pastern	weak					e				upright
Shape of feet	wide				d					narrow
Heels	high				d					low
Quality of legs	lean					e				blurred
Substance of legs	heavy				d					fine

Movement		Obvious			Average			Obvious		
		a	b	c	d	e	f	g	h	i
Walk: length of stride	long				d					short
Walk: correctness	toed in				d					toed out
Trot: length of stride	long				d					short
Trot: elasticity	elastic					e				stiff
Trot: impulsion	powerful					e				weak
Trot: balance	carrying				d					pushing
Canter: length of stride	long					e				short
Canter: impulsion	powerful				d					weak
Canter: balance	carrying					e				pushing

Athleticism		Obvious			Average			Obvious		
		a	b	c	d	e	f	g	h	i
Take off: direction	upwards			c						forwards
Take off: quickness	quick				d					slow
Technique: forelegs	bent				d					stretched
Technique: back	rounded				d					hollow
Technique: haunches	open					e				tight
Scope	much					e				little
Elasticity	supple				d					stiff
Care	careful			c						not careful
Attitude	much			c						little



# LINEAR PROFILING TRAITS

The addition of more data to the ISH linear profiling database will help to decrease the standard errors existing based on the variability of linear profiling (phenotypic) traits, and ensure the estimates are as accurate as possible. This will help to improve the accuracy of heritability estimates when traits are compared within and between one another, and indeed to the animals genetics.

These profiles can then be used to determine the correlations, if any, between the linear scored traits and a horses future performance. A strong correlation between these traits would indicate it may be possible to include linear scored traits into a selection index alongside the performance traits, enabling selection on multiple beneficial traits at once. The linear profile data will also be extremely valuable for genomics research in the future.



# 2024 LINEAR PROFILING PROJECT

The 2024 linear profiling project was conducted over four days at four different events across two disciplines. A total of 121 animals were profiled; this included 44 mares and 77 stallions/geldings.

The studbook attended two legs of the three year old RDS Loose performance qualifiers in Tubberbride Equestrian Centre for both the showjumping section and the eventing section qualifiers.

The DAFM Showjumping Studbook Series final in Tattersalls was also attended to compile profiles of competing Irish Sport Horses. In September, the studbook also attended the DAFM Eventing Studbook Series Final in Kilguilkey to profile event horses.



# LOOSE JUMPING LINEAR PROFILES

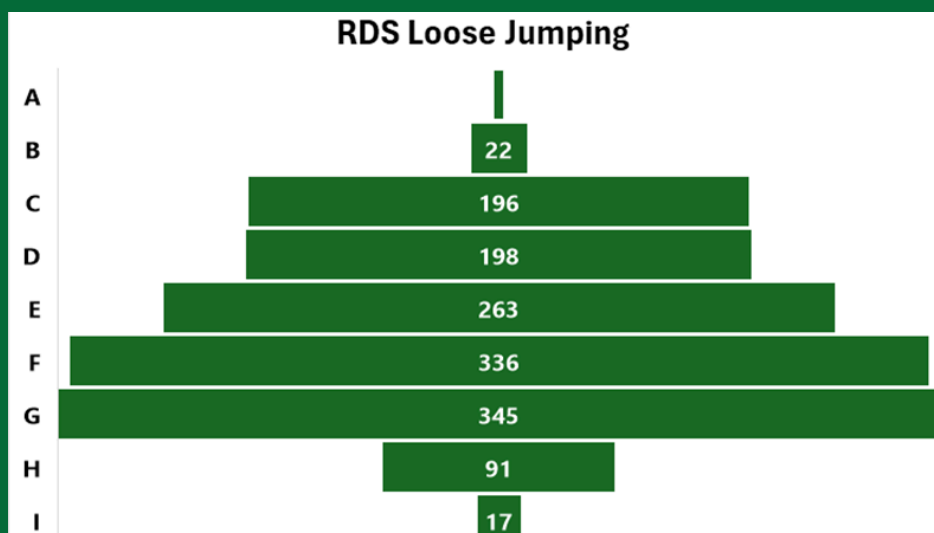


The loose performance qualifiers were for 3yr old horses aimed at a career in showjumping or eventing. Both of these events were indoor and animals were profiled from the outside of the ring while the animal was being judged. Senior inspectors attended both events.

The judging process began with the animal standing to have its conformation assessed, this was followed by walking and trotting in hand before being turned loose. This allowed inspectors to complete the conformation and gait assessment profile.



Most horses profiled expressed traits within the E-G range, E, F representing within average scores and G a greater expression to the right of the scale. The right of the scale is generally positive. However this varies per trait. This may be attributed to their age or the fact that they are shown loose, hence they are not restricted by a rider through the expression of athleticism traits.





# SHOW JUMPING LINEAR PROFILES

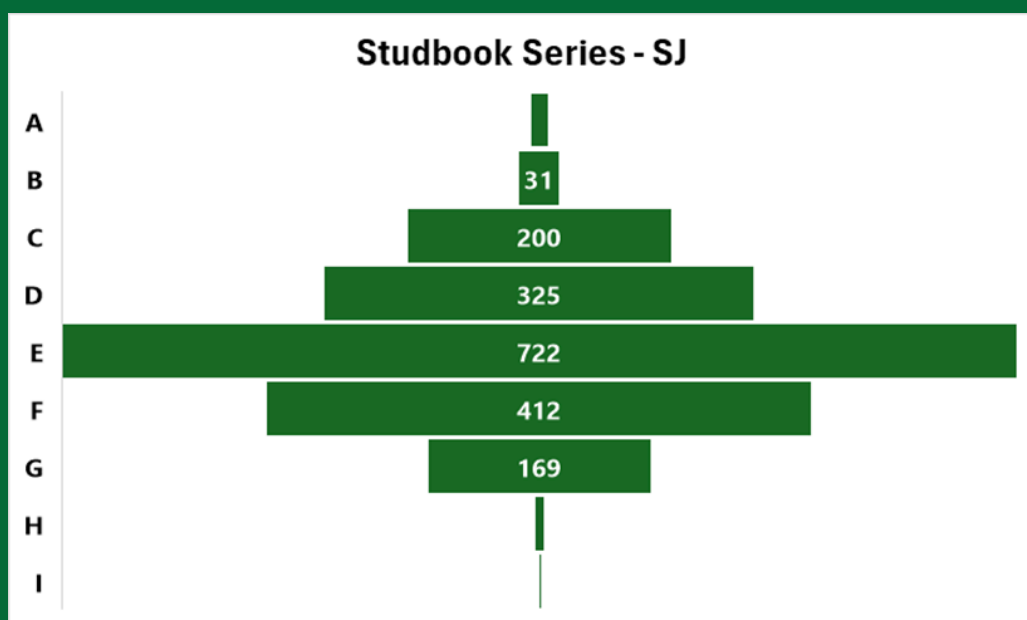


Attending the studbook series finals presented an opportunity to profile animals under saddle; horses were between the ages of five and seven years old. At the showjumping DAFM studbook series finals 68 ISH were profiled.

Unlike the loose performance qualifiers, the inspectors were able to get closer to the animals either before or after they entered the ring to complete the conformation assessment. While in the ring, the gait and jumping assessment was then completed.



Most horses profiled expressed traits within average range, D-F. The most common trait allocation was 'E' which denotes the average of the trait in the profile. The show jumping (SJ) horses had some traits scored as A, H and I, these are the extreme expression of particular traits. and were all related to athleticism scores.

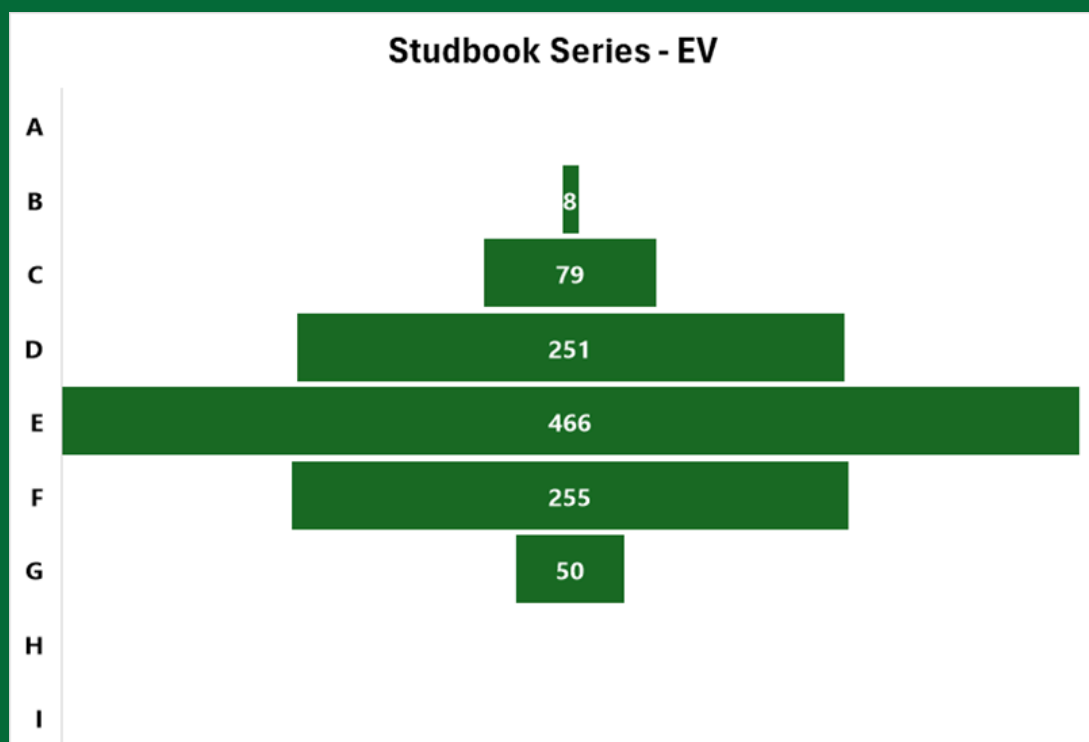


# EVENTING LINEAR PROFILES



There are less eventing specific linear profiles in the studbook database, so this presented a opportunity to consider some of the potential differences between profiles of ISH in show jumping versus eventing. At the eventing DAFM studbook series finals over the course of the two days a total of 81 animals were profiled.

As in show jumping section, most horses profiled expressed traits within average range, D-F. The most common trait allocation was 'E' which denotes the average of the trait in the profile. However the eventing horses did not display the types of extremes seen the the show jumping horses, namely the absence of traits scored A, H and I.



# SUMMARY



In 2024 the majority of horses linear profiled displayed average scores for the 45 profiled traits; with some extremes displayed in SJ horses that were not evident in eventing horses. These extremes were related to athleticism scores related to the horses 'jump' suggesting some level of specialism in the show jumping ISH.

However it is important to note that the relative sample size ( $n = 121$ ) is small and that there were 21 more show jumping horses profiled than eventing horses, hence it is expected that a greater range in type of horse was profiled in the SJ section, which may account for the more extreme trait expression.

It is currently unknown what clear differences exist between linear profiles of eventing and show jumping horses in the Irish Sport Horse population due to limited data available on eventing horses. Therefore additional profiling of both show jumping and eventing horses is required to determine the significance, if any, of differences between Irish Sport horses across these disciplines.



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