

# Genetic tests target improvement in racehorses' performance

19 July 2016, by Jamie Deasy

UCD-based equine science company Plusvital has launched four new genetic tests designed to enable thoroughbred horses to reach their full racing and breeding potential.

The company's new genetic tests can provide thoroughbred horse owners and breeders with information on elite racing and breeding ability, optimum race distance, surface preference, height and inbreeding.

The evaluations analysed 48,000 genetic markers from over 4,000 horses representing 739 unique sires. The horses analysed include over 800 Black type winners. Black type races are the highest level of races in thoroughbred horse racing.

Plusvital's new genetic tests are:

- **Elite Performance v3.0:** This test achieves higher strike rates – percentage of wins to runs a horse has achieved – by identifying the highest genetic potential for elite breeding and racecourse success.
- **Distance Plus v1.0:** This genetic test refines the optimum race distance for a thoroughbred horse through analysis of a more complex range of [genetic markers](#), separating horses into short or long C:C, C:T or T:T.
- **Raced/Unraced v1.0:** This genetic test identifies foals with the greatest potential to have a racecourse start as a two-year or a three-year old.
- **Dirt v Turf v1.0:** This test indicates the genetic probability of an individual horse for achieving its best win on dirt or turf surface.

In the last six years, the use of Plusvital's Equinome Speed Gene and Elite Performance Tests have been adopted by some of the top five global racing and breeding organisations. Owners and breeders with considerably smaller operations have also used the tests.

"The launch of these new genetic tests by Plusvital is a large step forward in terms of the amount of information we can provide to breeders, owners and trainers from their horses' DNA," said Mike Shelly, CEO, Plusvital.

"Our research has identified very strong [genetic](#) signals for a range of new traits, and this information will be of considerable value for owners and breeders in decision-making," said Associate Professor Emmeline Hill, Chief Scientific Officer, Plusvital and a leading equine genomics researcher at University College Dublin.

In May, the results of an Equinome Speed Gene Test provided by Plusvital prompted leading UK trainer Hugo Palmer to withdraw this year's 2000 Guineas winner Galileo Gold from the Epsom Derby.

The company has confirmed that the DNA sample provided by the trainer was returned with a C:C genotype result.

Equinome scientists have found that horses with the C:C genotype have an optimum race distance less than or equal to one mile.

From a set of almost 1,000 Black type winners tested to date, less than one per cent of C:C [horses](#) raced in Europe have demonstrated their optimum trip at a mile-and-a-half. Horses with the C:T and T:T genotypes are best suited to the Derby distance.

Plusvital is headquartered at NovaUCD, the centre for new ventures and entrepreneurs at UCD. Last year, Plusvital acquired Equinome, the leading genomic testing company, and a spin-out from UCD.

Provided by University College Dublin

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