EQUINOME

Racing GenePak

Result: Australia/New Zealand

Horse Details

Horse Name	Sire	Dam
	Harry Angel	Rock The Sea

Sample ID	Sex	Country of Birth
24 ex Rock The Sea	Male	Australia

Year of Birth	Month of Birth
2024	October

SPEED GENE TEST

Speed Gene Test — C:C — Sprint / Mile — Plusvital

DISTANCE PLUS TEST

Distance Plus Test — AUS — C:C — Short — Plusvital

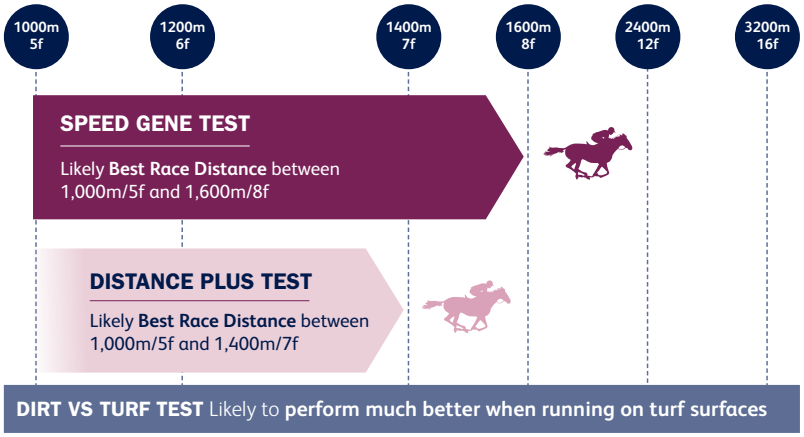
DIRT VS TURF TEST

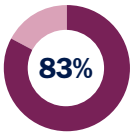
Dirt -v- Turf — TURF PRO — Plusvital

- ✓ C:C Short horses will likely achieve their optimal performance if trained and raced as a sprint type with a particular preference for 1000-1400m races
- ✓ Recommend targeting 1000-1200m races as a two-year-old, and races of 1400m or less as an older horse
- ✓ Likely to breed sprint or middle distance types
- ✓ Turf Pro horses show a strong preference for running on turf surfaces, being three times more likely to win on turf than dirt surfaces

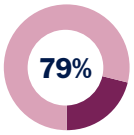
Use this result for Horses in Training

HORSES IN TRAINING





83 % of **C:C horses** have a **Best Race Distance** of less than 1,600m/8f
(Group/Listed races)



79 % of C:C Short horses have a **Best Race Distance** of 1,000-1,400m/5-7f
(Group/Listed races)

The Distance Plus Test refines the Speed Gene Test distance range prediction ✓ Likely Super Sprinter ✓ Early Maturing

C:C horses are likely to appear more muscular

By comparison with T:T horses at the same age, two-year-old C:C horses develop:

7% **More muscle mass**

9.5% **More Type IIB muscle (fast twitch) fibres**

About the Speed Gene Test | Distance Plus Test | Dirt Vs Turf Test

EQUINOME

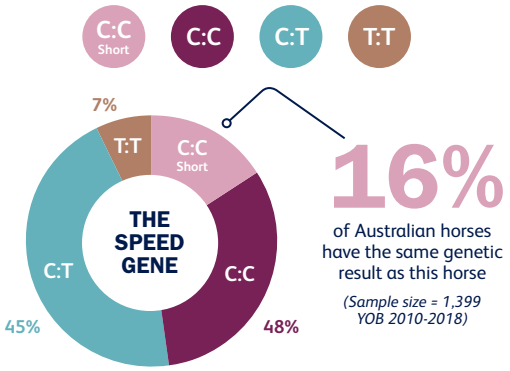
Racing GenePak

Result: Australia/New Zealand

About the Speed Gene Test

- The Speed Gene Test examines differences in the myostatin gene to make a prediction of a horse's best race distance
- The myostatin gene is a major determinant of race distance aptitude because it influences:
  - Skeletal muscle growth
  - The proportion of fast twitch (glycolytic, Type IIB) muscle fibres required for short bursts of power and the proportion of slow twitch (oxidative, Type I) muscle fibre types required for stamina
- Race distance aptitude is almost entirely determined by the genetic make-up of this gene
- Test result is based on the combination of "C" and "T" genetic variants, one inherited from each parent

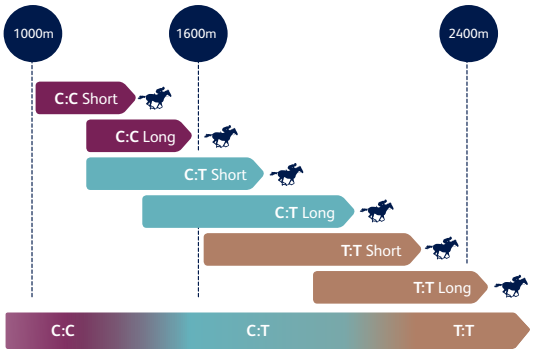
There are three possible combinations of the Speed Gene variants, with one Distance Plus sub-variant:



About the Distance Plus Test

- The Distance Plus Test looks at 50,000 genetic markers to provide an enhanced level of information when combined with the Speed Gene Test
- Refines the predicted optimum race distance, sub-categorising the Speed Gene Types into "Short" or Long" (e.g. C:T Short or C:T Long)

Average Best Race Distance
(179 Group/Listed Winning Horses - AUS/NZ Only)



As well as the most influential gene, myostatin, many other genes with functions in anabolic processes, insulin signalling, the hypoxic response and fat metabolism, contribute in a small way to distance aptitude.

This test uses genes from the whole genome to more precisely predict likely best race distance in a particular race region.

About the Dirt Vs Turf Test

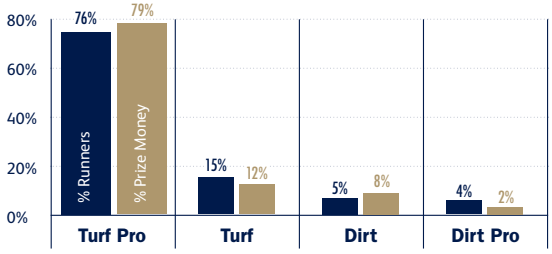
- Identifies a horse's genetic preference for a turf or dirt race surface
- Result categorises horses into one of four categories:
  - **Dirt Pro** (Strongly prefer dirt surfaces)
  - **Dirt** (Prefer dirt surfaces)
  - **Turf** (Prefer turf surfaces)
  - **Turf Pro** (Strongly prefer turf surfaces)

Many consider surface preference to be indicated by pedigree and physical type since sires are often ranked according to the success of their progeny on different surfaces. However, it is often unclear until a horse has raced a number of times as to which surface it is best suited to.

Similarly, some stallions can produce progeny with different surface preferences and with the global movement of stallions, pedigree may not always be the best indicator of a horse's surface preference type.

THREE-YEAR-OLDS & OLDER: DIRT VS TURF TEST

% of Runners vs Prize Money



Turf Flat races, Australia & New Zealand, 2010-2018 (Sample size = 1,696)

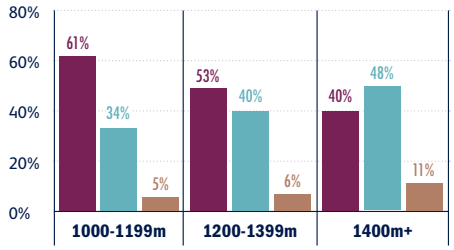
The vast majority of Australian runners are Turf Pro. Turf Pro horses greatly over-perform on Australian Turf surfaces.

Observations of this result for Horses In Training

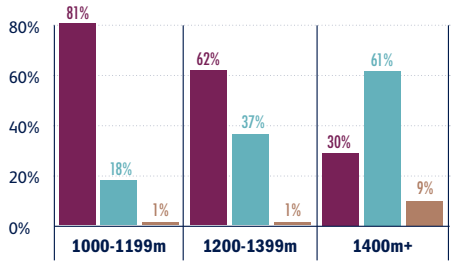
Observations of this result for Horses In Training

TWO-YEAR-OLDS

% of Runners by distance by Speed Gene type



% of Prize Money by distance by Speed Gene type



C:C
C:T
T:T

Flat races, Australia & New Zealand, 2010-2018 (Sample size = 715)

Two-year-old C:C horses perform best at 1000-1199m

- **At 1000-1199m, C:C horses over-performed,** winning 81 % of the prize money available, despite providing 61 % of the runners at this distance
- **At 1200-1399m, C:C horses over-performed,** winning 62 % of the prize money available, despite providing 53 % of the runners at this distance
- **At 1400m+, C:C horses under-performed,** winning 30 % of the prize money available, providing 40 % of the runners at this distance

THREE-YEAR-OLDS

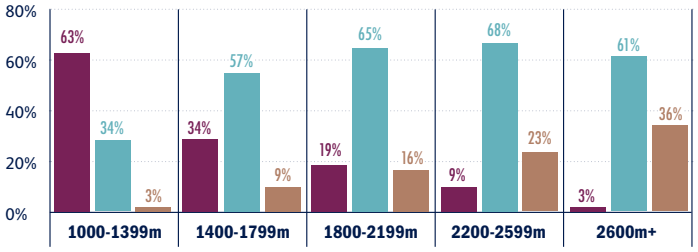
Three-year-old and older C:C horses perform best at distances less than 1800m

- **At 1000-1399m, C:C horses over-performed,** winning 75 % of the prize money available, despite providing 63 % of the runners at this distance
- **At 1400-1799m,** C:C horses won 34 % of the prize money available, despite providing 34 % of the runners at this distance
- **At 1800m+, C:C horses under-performed,** winning 7 % of the prize money available, despite providing 16 % of the runners at this distance

Strike Rate and % Winners

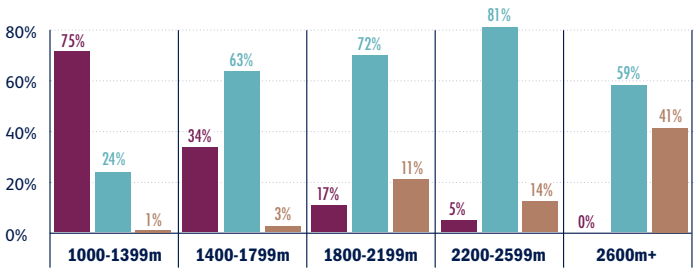
- A higher percentage of C:C horses won 1000-1399m races, outperforming C:T and T:T horses at these shorter distances
- C:C horses recorded a higher strike rate in shorter distances races, outperforming T:T horses at distances less than 1800m

% of Runners by distance by Speed Gene type



C:C
C:T
T:T

% of Prize Money by distance by Speed Gene type



Flat races, Australia & New Zealand, 2010-2018 (Sample size = 1,740)

Use this result for Young Stock | Breeding

EQUINOME

Racing GenePak

Result: Australia/New Zealand

Use this result for Young Stock

YOUNG STOCK

C:C horses are likely to be more precocious and early maturing

- 50 % of C:C horses had their first run within 34 months of their date of birth, one month earlier than the average for the general population

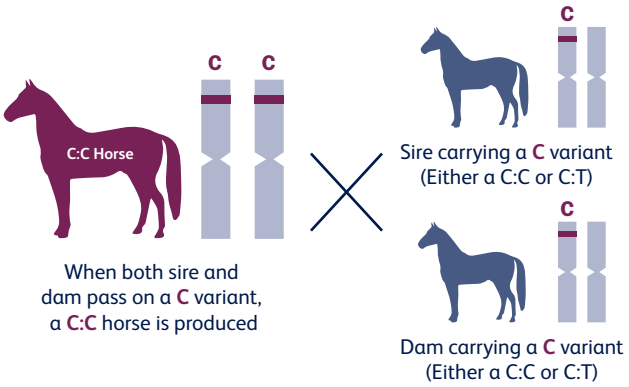


Use this result for Breeding

BREEDING

- Horses inherit one copy of the myostatin gene, containing either a "C" or "T" variant, from both the sire and the dam
- Different combinations can arise from the same mating depending on the variant that is passed on
- A C:C horse has inherited a C variant from both the sire and the dam

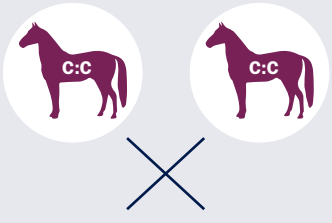
This explains why full siblings can be completely different types of horse, and why race distance or precocity cannot be reliably predicted from pedigree alone.



When both sire and dam pass on a **C** variant, a **C:C** horse is produced

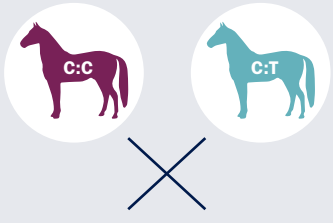
Possible mating outcomes for this horse

If this C:C horse is paired with another C:C horse:



100%
Chance to produce a
Sprint / Mile C:C Plusvital

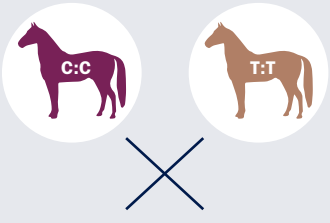
If this C:C horse is paired with a C:T horse:



50%
Chance to produce a
Sprint / Mile C:C Plusvital

50%
Chance to produce a
Middle C:T Plusvital

If this C:C horse is paired with a T:T horse:



100%
Chance to produce a
Middle C:T Plusvital

To learn more about the research behind the Speed Gene Test, please visit the following link:

https://www.equinomelabs.com/equine-research