Plusvital Powered by Equinome

# Racing GenePak

## *Result: Australia/New Zealand*

## Horse Details

| Horse Name | Sire | Dam |
|---|---|---|
| | Fiorente | Lacey Underall |

| Sample ID | Sex | Country of Birth |
|---|---|---|
| Lacey Underall '20 | Male | Australia |

| Year of Birth | Month of Birth |
|---|---|
| 2020 | September |

**SPEED GENE TEST**

Speed Gene Test — T:T — Middle / Long — Plusvital

**DISTANCE PLUS TEST**

Distance Plus Test — AUS — T:T — Long — Plusvital

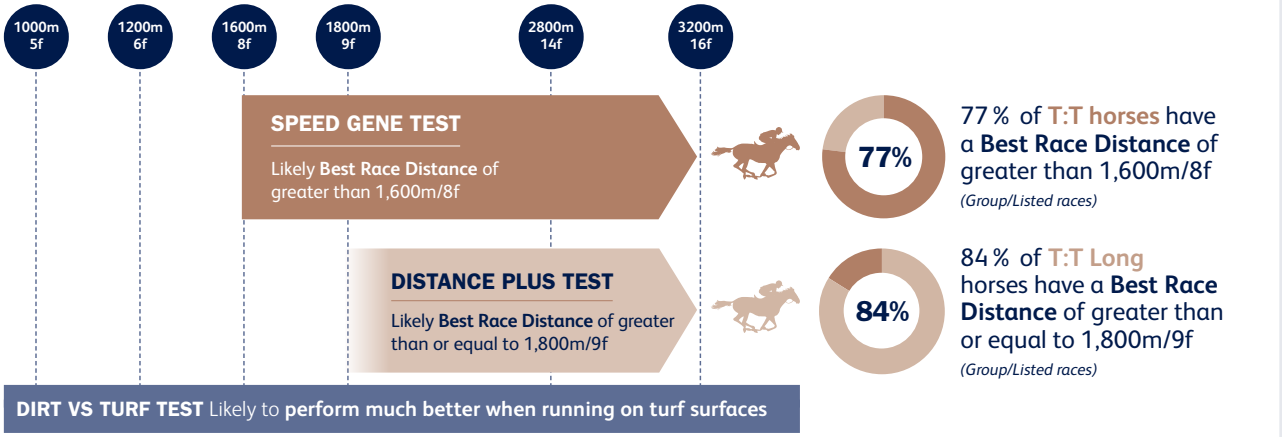
**DIRT VS TURF TEST**

Dirt -v- Turf — TURF PRO — Plusvital

- ✓ T:T Long horses will likely achieve their optimal performance if trained and raced as a stayer with a particular preference for 1800m+ races
- ✓ Recommend a light racing programme as a two-year-old, targeting 1600m races, and focusing on 1800m+ races as an older horse
- ✓ Likely to breed middle distance or staying types depending on mare/sire
- ✓ 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**




The Distance Plus Test refines the Speed Gene Test distance range prediction ✓ Likely Super Stayer ✓ Later Maturing

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

**7%** Less muscle mass

**6.9%** More Type I muscle (slow twitch) fibres

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

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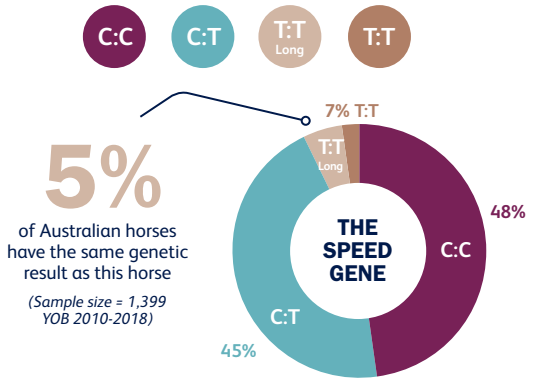
## *Result: Australia/NewZealand*

## 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 fibre required for short bursts of power and the proportion of slow twitch (oxidative, Type I) muscle fibre types required or 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

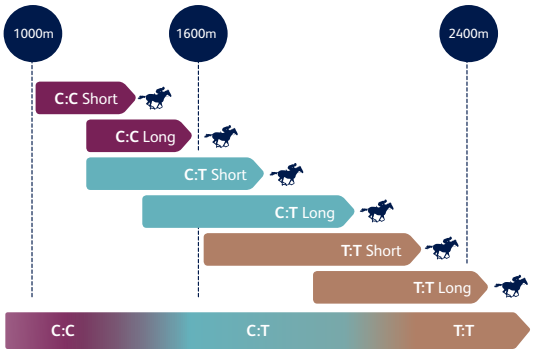
**There are three possible combinations of the Speed Gene variants, with one Distance Plus sub-variant:**




## 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, m ostatin, 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

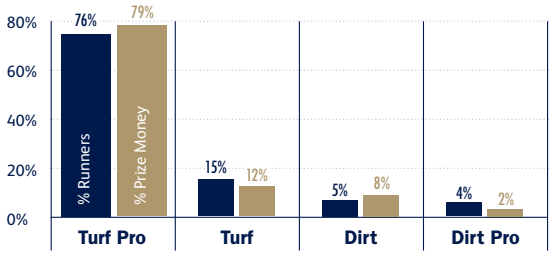
- Identifies a horse's genetic pre erence for a turf or dirt race surface
- Result categorises horses into one of four categories:
  - **Dirt Pro** (Strongly prefer dirt surfaces)
  - **Dirt** (Prefer dirt surfaces)
  - **Turf** (Prefer turf surfaces)
  - **Turf Pro** (Strongly prefer turf surfaces)

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**

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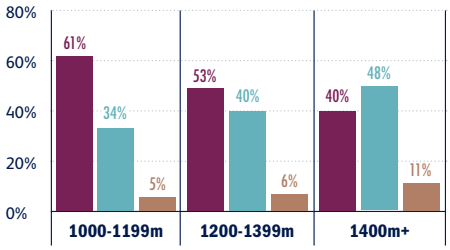
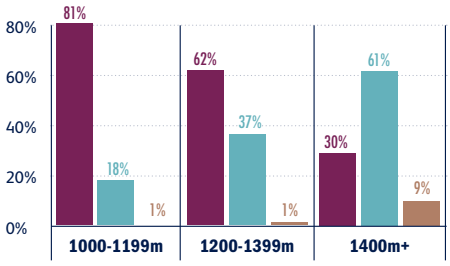
## Observations of this result for Horses In Training

### 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)*

#### T:T horses under-perform as two-year olds, typically taking longer to mature

- T:T horses represent less than 8 % of the population, and recent sample data for two year old T:T runners in the Australia/New Zealand jurisdiction is limited
- However, evidence from European runners suggests **T:T horses perform better over an extended trip**, even as two-year-olds

### THREE-YEAR-OLDS

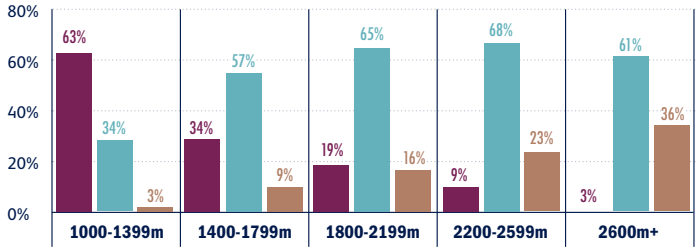
#### Three-year-old and older T:T horses perform best at 2600m+

- **At less than 2200m, T:T horses under-performed**, winning 3 % of the prize money available, despite providing 7 % of the runners at this distance
- **At 2200-2599m, T:T horses under-performed**, winning 14 % of the prize money available, providing 23 % of the runners at this distance
- **At 2600m+, T:T horses over-performed**, winning 41 % of the prize money available, despite providing 36 % of the runners at this distance

#### Strike Rate and % Winners

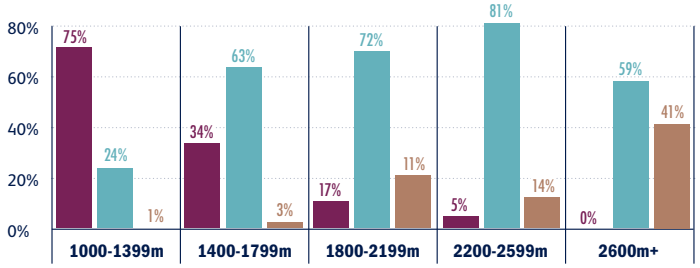
- A higher percentage of T:T horses won 2400+ races relative to C:T and C:C horses
- T:T horses recorded a higher strike rate in 2400m+ races, showing a particular preference for staying races

#### % 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

# Racing GenePak

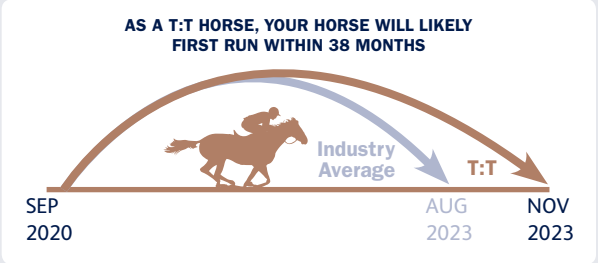
*Result: Australia/NewZealand*

## Use this result for Young Stock

YOUNG STOCK

T:T horses are likely later maturing, starting later than average

- 50 % of T:T horses had their first run within 38 months of their date of birth, four months later than the average for the general population.

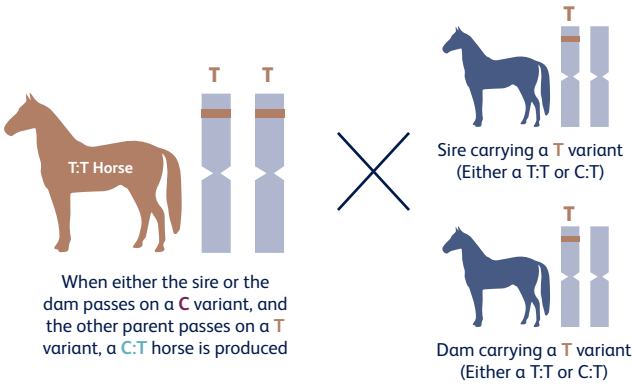



## Use this result for Breeding

BREEDING

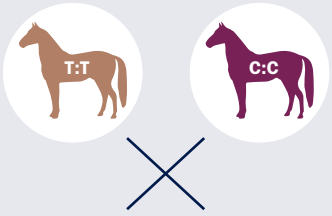
- Horses inherit one copy of the myostatin gene, containing either a “C” or “T” variant, from both the sire and the dam
- Different combinations can arise from the same mating depending on the variant that is passed on
- A T:T horse has inherited a T variant from both the sire and the dam.

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.

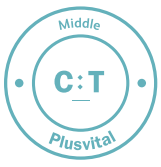



## Possible mating outcomes for this horse

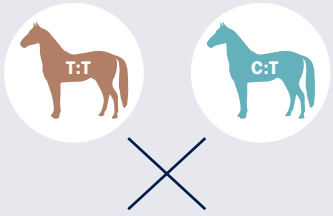
If this T:T horse is paired with a C:C horse:



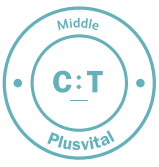

**100%**
Chance to produce a



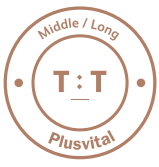

If this T:T horse is paired with a C:T horse:



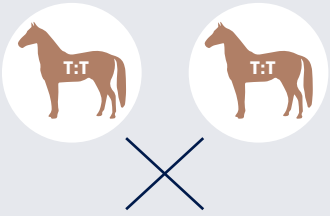

**50%**
Chance to produce a



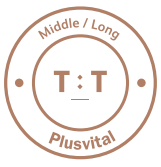

**50%**
Chance to produce a




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




**100%**
Chance to produce a




**To learn more about the research behind the Speed Gene Test, please visit the following link:**
https://www.plusvital.com/equine-genetics/equine-research/