Speed Gene Test

Result: Australia/New Zealand

Horse Details

Horse Name	Sire	Dam
Too Soon	Charge Forward	Canny Lassie

Sample ID	Sex	Country of Birth
5	Male	Australia

Year of Birth	Month of Birth
2021	September



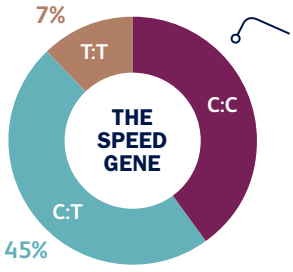
- ✓ C:C horses will likely achieve their optimal performance if trained and raced as a sprinter/miler
- ✓ Recommend targeting 1,000-1,200m races as a two-year-old, and races of 1,600m or less as an older horse
- ✓ Likely to breed sprint or middle distance types depending on mare/sire

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 genetic variants:

C:C C:T T:T



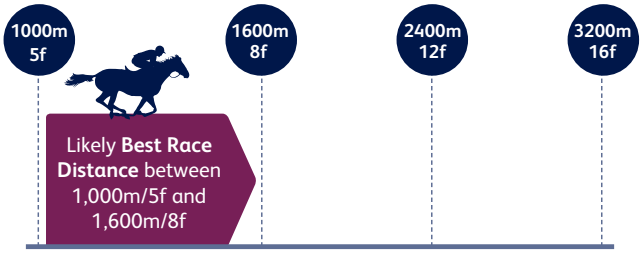
48%

of Australian horses have the same Speed Gene Test result as this horse

(Sample size = 1,399, YOB 2010-2018)

Use this result for Horses in Training

HORSES IN TRAINING



✓ Likely Sprinter ✓ Early Maturing

83%

83 % of C:C horses have a Best Race Distance of less than 8f/1,600m

(Group/Listed races)

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**

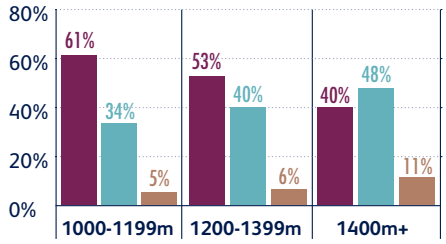
9.5% **More Type IIB muscle (fast-twitch) fibres**

Observations of this result for Horses In Training

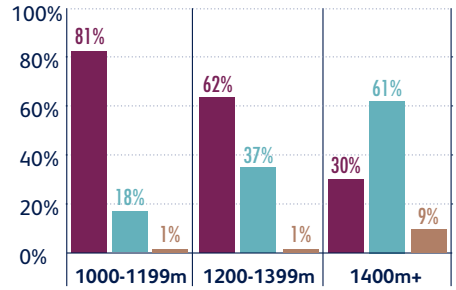
Observations of this result for Horses In Training

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 AND OLDER

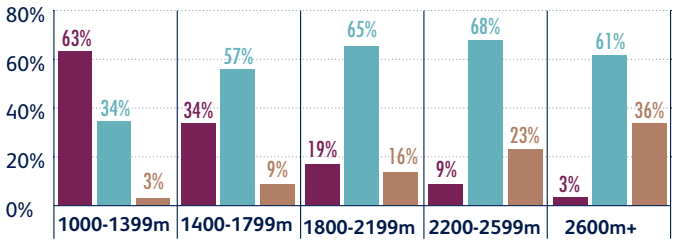
Three-year-old and older C:C horses perform best at distances less than 1800m

- **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

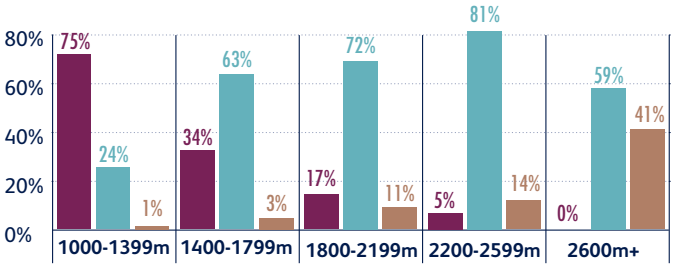
- A higher percentage of C:C horses won 1000-1399m races, outperforming C:T and T:T horses at these shorter distances
- C:C horses recorded a higher strike rate in shorter distances races, outperforming T:T horses at distances less than 1800m

% 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

Speed Gene Test

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

AS A C:C HORSE, YOUR HORSE WILL LIKELY FIRST RUN WITHIN 34 MONTHS

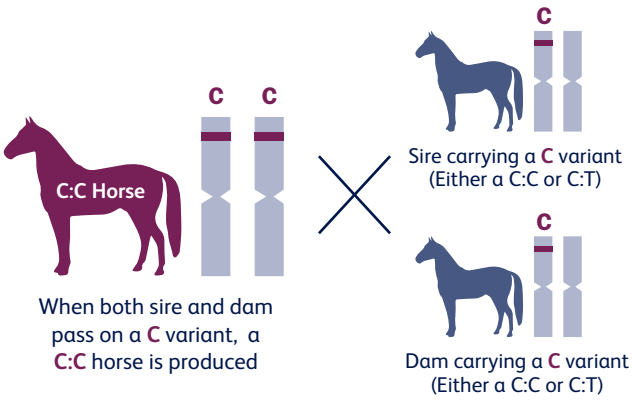


Use this result for Breeding

BREEDING

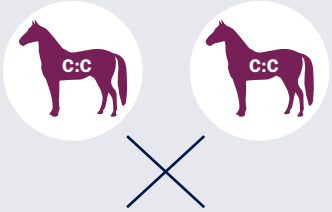
- orses inherit one copy of the myostatin gene, containing either a “C” or “T” variant, from both the sire and the dam
- Different combinations can arise from the same mating depending on the variant that is passed on
- A C:C horse has inherited a C variant from both the sire and the dam

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.



Possible mating outcomes for this horse

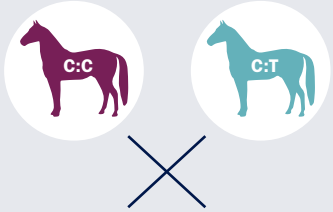
If this C:C horse is paired with another C:C horse:



100%
Chance to produce a



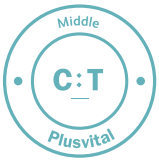
If this C:C horse is paired with a C:T horse:



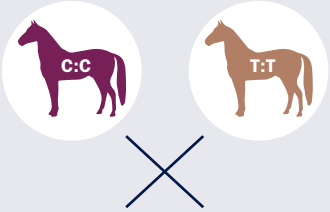
50%
Chance to produce a



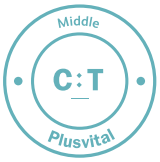
50%
Chance to produce a



If this C:C horse is paired with a 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/