## **Supplementary Material**

## Comparison of gastrointestinal transit times in stabled Thoroughbred horses fed freshly cut pasture and three conserved forage-based diets

Karlette A. Fernandes<sup>A</sup>, Chris W. Rogers<sup>A,B,D</sup>, Erica K. Gee<sup>A</sup>, Gareth Fitch<sup>A</sup>, Charlotte F. Bolwell<sup>A</sup>, Sandra Kittelmann<sup>C</sup>, Emma N. Bermingham<sup>C</sup> and David G. Thomas<sup>B</sup>

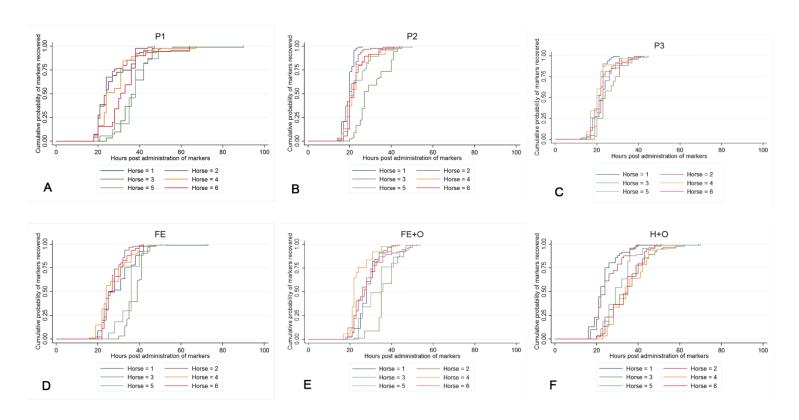
ASchool of Veterinary Science, Massey University, Palmerston North, New Zealand.

BSchool of Agriculture and Environment, Massey University, Palmerston North,
New Zealand.

<sup>C</sup>AgResearch, Grasslands Research Centre, Palmerston North, New Zealand.

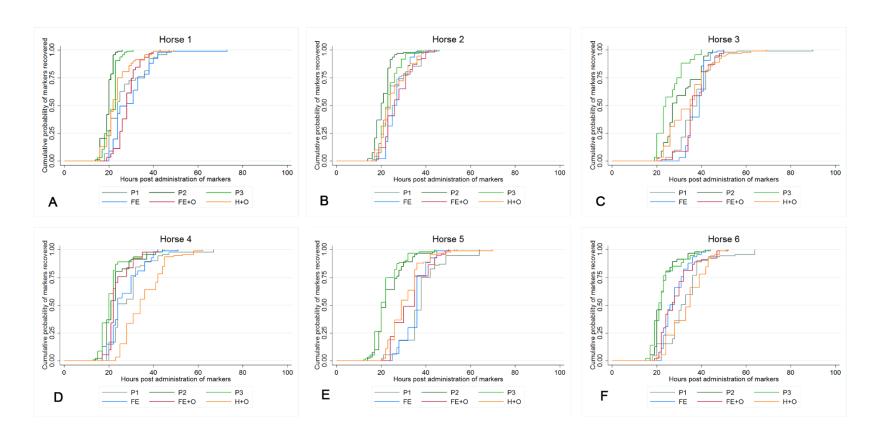
<sup>D</sup>Corresponding author. Email: c.w.rogers@massey.ac.nz

Fig. S1. Kaplan – Meier survival analysis of the cumulative percentage of markers recovered in the faeces of the six horses, on each diet fed during the six-week study period.



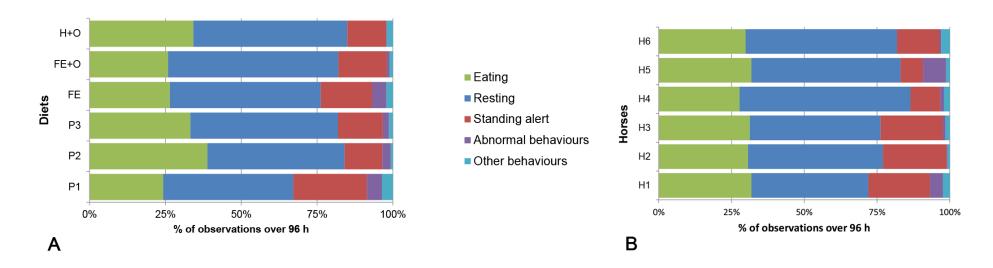
Within each diet, there was a significant difference in the marker recovery between horses (inter-horse variation) (log-rank test P<0.001 for all comparisons). P1, P2 and P3 – cut pasture grass fed to the horses in weeks 1, 3 and 5, respectively; FE – chopped ensiled forage; FE+O - chopped ensiled forage mixed with whole oats; H+O - ryegrass-clover hay fed with whole oats.

Fig. S2. Kaplan – Meier survival analysis of the cumulative percentage of markers recovered in the faeces of the six horses, stratified by horse across diets fed during the six-week study period.



Within each horse (intra-horse variation), there was a significant difference in the marker recovery across diets (Log-rank test P<0.001 for all comparisons). P1, P2 and P3 – cut pasture grass fed to the horses in weeks 1, 3 and 5, respectively; FE – chopped ensiled forage; FE+O - chopped ensiled forage mixed with whole oats; H+O - ryegrass-clover hay fed with whole oats.

Fig. S3. Behaviour of horses recorded over a 96-hour period within each treatment block of the study.



The stacked bar charts indicate the behaviour observed as percentage of the total number of observations during each 96-hour period. Panel A shows the distribution of the behaviour exhibited by the six horses, stratified by diet. There was a significant difference in the eating behaviour of horses when compared between diet groups (P<0.001). Panel B shows the distribution of the behaviour exhibited by each horse across all diets. There was no significant differences observed between the six horses when compared across diets (P=0.96). The diets fed to the horses were cut pasture (P1, P2 and P3, fed in weeks 1, 3 and 5, respectively), a commercial chopped ensiled forage mixed with whole oats (Diet FE+O) or without whole oats (Diet FE), and ryegrass-clover hay fed with whole oats (H+O). The 'abnormal behaviours' category included grooming, licking objects or premises, vocalising and non-repetitive oral or head movements and the 'other behaviours' category included repetitive box/ yard walking, crib biting and weaving.