

THE VITAMIN A AND E STATUS OF THOROUGHBRED HORSES

N.P. McMENIMAN^A, K.V. SKELTON^B and D.E. AUER^B

^A Dept Farm Animal Medicine and Production, The University of Queensland, St Lucia, Qld 4072

^B Racing Science Centre, Dept of Primary Industries, Bogan St, Albion, Qld 40 10

Anecdote suggests that, in order to improve performance, thoroughbred racehorses are frequently given vitamin supplements, particularly the antioxidant vitamin E (α tocopherol). The aim of this study was to determine the plasma vitamin A (retinol) and E concentrations of thoroughbred horses racing in the Brisbane metropolitan area and to relate these values to racing performance.

Prior to the running of each of 96 races during the period August to November 1993, plasma samples were obtained from 4 to 5 randomly selected horses in each race. The retinol and α tocopherol concentrations in these samples were subsequently determined by HPLC. The finishing position of each of the sampled horses in their respective races was recorded. The mean ($\pm$ SEM) plasma α tocopherol and retinol concentrations were 4.7 ± 0.07 and $0.187 \pm 0.0019 \mu\text{g/mL}$, respectively. The mean concentrations of the 2 vitamins in the plasma of horses that finished in different positions in their races were similar ($P > 0.05$) so there was no relationship between concentrations of either vitamin and finishing position in races (Figure 1).

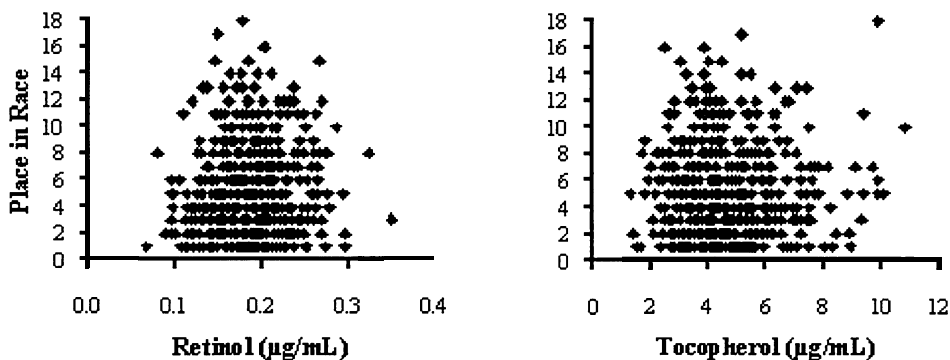


Figure 1. The concentrations of plasma α tocopherol and retinol in relation to finishing position in races

Normal α tocopherol concentrations are in the range 1 to 3 $\mu\text{g/mL}$ and normal retinol concentrations are in the range 0.150 to 0.200 $\mu\text{g/mL}$ (McMeniman *et al.* 1995). The above results suggest that a large proportion of thoroughbred horses are given vitamin A and E supplements but these supplements have no effect on racing performance. Vitamin supplementation also failed to improve performance of horses in the study reported by McMeniman *et al.* (1995).

McMENIMAN, N.P., THORNTON, J.R. and DOWSETT, K.F (1995). *Equine Vet. J. Suppl.* **18**: 367-71.