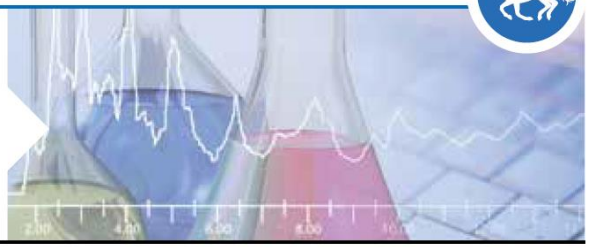
FOCUS ON RESEARCH



Effects of feeding Postbiotic on exercise performance of Arabian horses

Overview

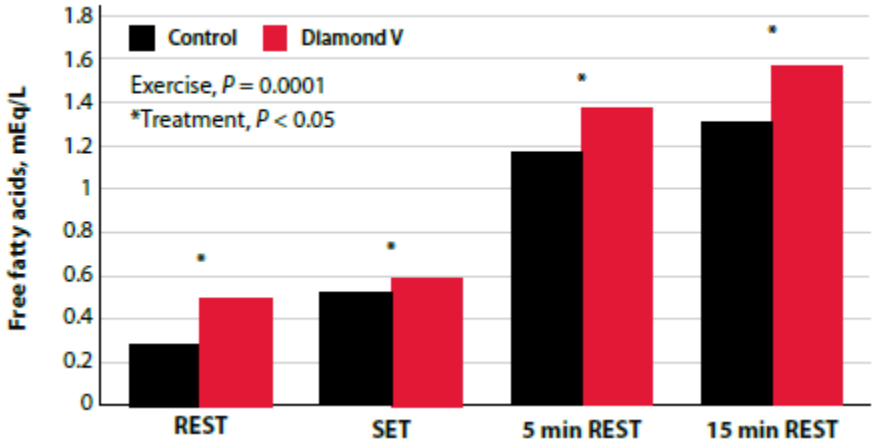
- 6 Arabian horses (4 males and 2 females) that were previously not exercised were used in a crossover design
- Average body weight of 445 kg
- Treatments
  1. Control
  2. Postbiotic (60g per day)
- Following a 3-week dietary treatment adjustment period, a Standard Exercise Test (SET) was conducted on a treadmill (Table 1)
- SET was designed to produce a heart rate up to 190 beats/min and blood lactate levels of at least 4mM to observe the change to anaerobic catabolism
- One REST period was included before and two (5 and 15 min) after the exercise test
- Blood was collected and heart rate measured for each period.

Table 1: Standard exercise test (SET) parameters.

Interval	Speed, m/s	Time, min	Incline, %
Warm-up	1.6	5	0
STEP1	3.5	3	0
STEP2	4.5	3	6
STEP3	5.0	3	6
STEP4	5.5	3	6
STEP5	6.0	3	6

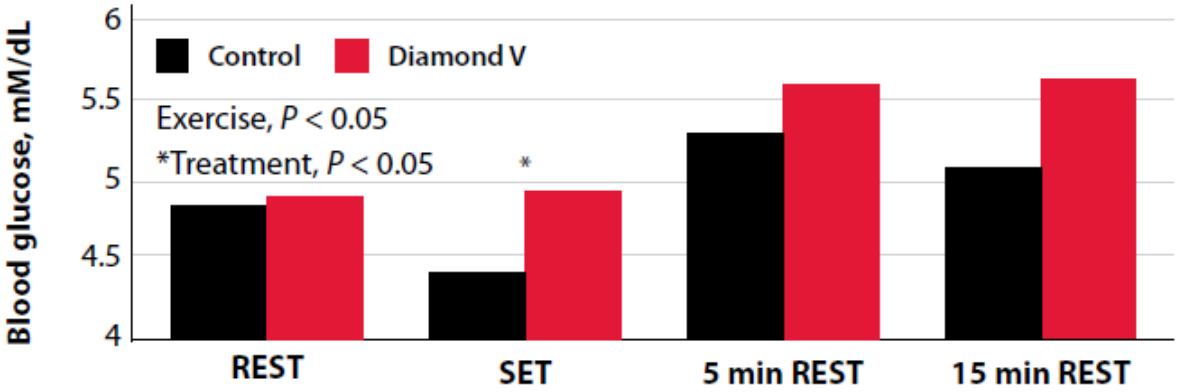
Results

Figure 1: Free fatty acid (FFA) levels before, during, and following exercise.



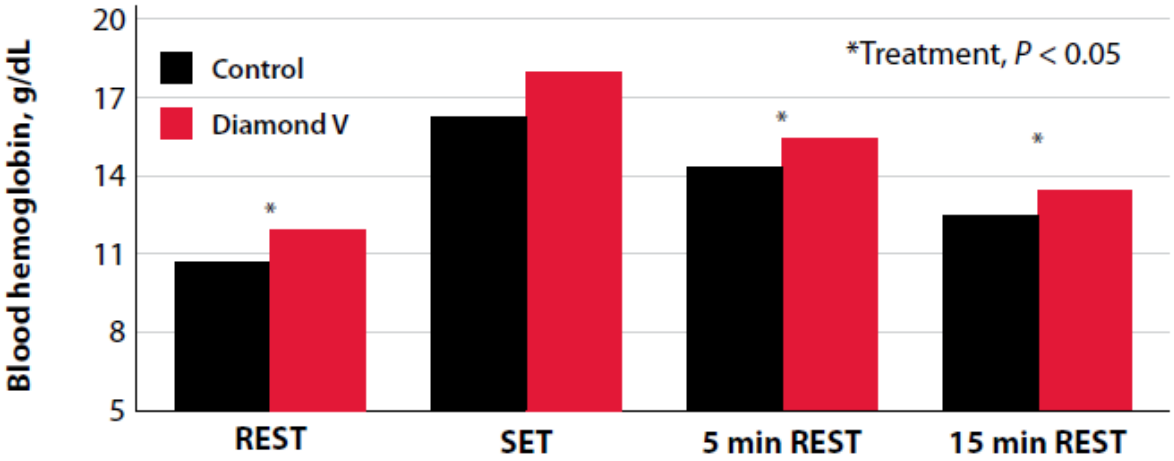
- Supplementing horses with Postbiotic increased FFA during both all REST and SET exercise periods ($P < 0.05$; Figure 1).
- FFA levels in the blood increased with the increase in exercise intensity ($P = 0.0001$).

Figure 2: Blood glucose levels before, during, and following exercise.



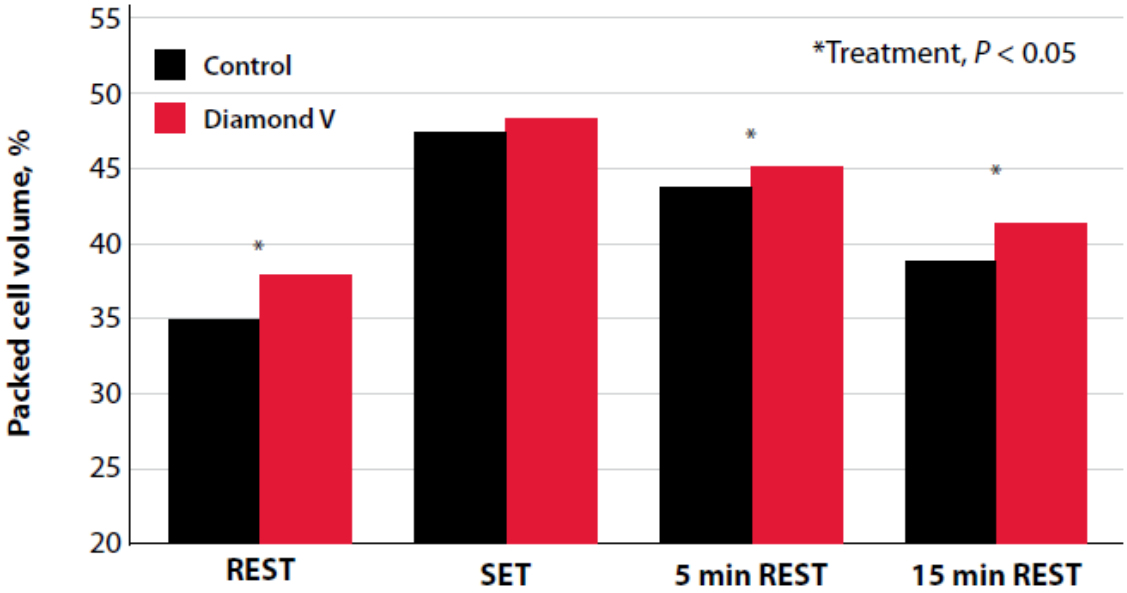
- Horses fed Postbiotic had greater blood glucose during the SET periods ($P < 0.05$; Figure 2).
- Blood glucose initially decreased, but then increased with the exercise intensity ($P < 0.05$).

Figure 3: Blood hemoglobin levels before, during, and following exercise.



- Horses fed Postbiotic had greater blood hemoglobin before and after SET periods ($P < 0.05$; Figure 3).

Figure 4: Packed cell volume before, during, and following exercise.



- Supplementing Postbiotic increased packed cell volume during REST ($P < 0.05$; Figure 4).

Summary

- The SET program led to an increase in FFA ($P = 0.0001$) and blood glucose ($P = 0.05$).
- Supplementing Postbiotics to the horse helped support greater levels of FFA, hemoglobin and packed cell volume before and after exercise ($P < 0.05$).