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FOOD FOR THOUGHT



- DIAMOND V[®] XPC -

All-natural, fermentation-based product for use in equine diets, Diamond V XPC, is produced using proprietary anaerobic fermentation technology of Saccharomyces cerevisiae. This unique fermentation process produces metabolites that promote robust digestive health and improve the resilience and functions of the immune system. Research has shown that Diamond V XPC supports:

- Improved gut morphology
- Feed digestibility and efficiency
- Recovery from work, injury or stress
- Immune function by reducing systemic inflammation and antioxidant status
- Digestive health by promoting a healthy balance of bacteria in the lower gastrointestinal tract

In terms of the equine performance of athletes' horses, Diamon V has been shown to affect the nutrients digestibility, nitrogen retention (higher protein digestibility) and exercise parameters. Dietary energy fuels a horse to perform with both speed and endurance. Research results have shown that the inclusion of Diamond V in horse diets increases digestible energy by improving the nutrients' digestibility. Research has shown that feeding Product affects plasma fatty acid levels, plasma lactic acid concentrations, hemoglobin and packed cell volumes of the blood, and horses' overall heart rate during and after exercise.

Lipid metabolism (turnover) is correlated to concentrations of FFA in the blood. Plasma FFA concentrations increase during and immediately following exercise. Research reported that Diamond V supplemented horses had a slower rise in plasma FFA rates during an exercise period indicating a more efficient uptake of FFA by the working muscles. In another study, scientists reported that FFA levels in animals following exercise remained elevated, suggesting that dietary supplements of Diamond V Product may enhance the oxidation of free fatty acids, especially during the recovery period. This indicates a possible conversion of energy usage from muscle glycogen to fat utilization.

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A research result confirmed in a standardized exercise test that Diamond V supplementation in horses increased blood FFA concentrations significantly at every STEP and during REST periods before and after exercise (Figure 1). The results indicate increased fat utilization and a sparing of blood glucose in the exercised horse.

Blood plasma lactate levels are proportional to the rate of intramuscular production of lactic acid from exercise intensity and duration in horses. In essence, lactate is produced throughout the exercise. Blood lactate is an assessment of muscle metabolism and is related to fatigue.



Diamond V exhibited significantly smaller and slower increases in plasma lactate concentration (Figure 2). This effect was more remarkable and became statistically significant as the length of exercise increased from 20 minutes or longer. Researchers reported a numerical reduction in blood lactate levels during the exercise portion of a standardized exercise test in horses. Any treatment that decreases the lactic acid production in the muscle would potentially increase the athletic capacity of the animal.



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FIGURE 2

Effect of Diamond V Original Product on plasma lactate levels in horses exercising for 35 minutes, followed by 20 minutes resting period



In horses, lower heart rates indicate relatively reduced cardiac output and therefore increased efficiency in energy metabolism and oxygen utilization. This leads to a greater capacity for performing a given amount of work by the animal. A 35-minute exercise trial showed significantly lower heart rates in horses supplemented with Diamond V during the first 5 and final 10 minutes of the workouts (Glade et al., 1990). In another study,

it reported that the velocity required to maintain 160 beats per minute at the 5th minute of exercise averaged 15.26 and 16.21 feet per second in control and Diamond V supplemented horses, respectively (Miller-Graber et al. 1994). This means that the horses fed Diamond V maintained the same heart rate while running faster than unsupplemented horses. Lowered heart rates in responses to workloads are a good indication of the relative improved fitness of horses.



horses come first

For more information on our products, call: 1300 666 657 • visit: barastochorse.com.au • email: enquiries@ridley.com.au