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Effect of a Tart Cherry Juice Blend on Exercise-Induced Muscle Damage in Exercising Horses

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1. Introduction
A recent human study showed tart cherry juice blend (TCJB) lowered serum markers of exercise-induced muscle damage in patients. This benefit was believed to be a result of significant antioxidant and anti-inflammatory activities identified in tart cherries.

2. Materials and Methods
Six untrained/unconditioned horses, randomly divided into two groups assigned in a double-blind crossover study (2-wk wash out), were administered 48 oz, q 12 h, of either TCJB or a placebo for 2 wk before exercise. Horses were submitted to a stepwise incremental exercise protocol. Blood samples were taken on entry into the study, before and during the exercise test, hourly after exercise up to 4 h, and daily for 5 days after exercise test to measure markers of muscle damage [creatinine kinase (CK), aspartate aminotransferase (AST), Troponin I], markers of oxidative stress [thiobarbituric acid reactive substances (TBARS)], and inflammation [serum amyloid A (SAA)]. The effect of each treatment on the variables was assessed by regression analysis, and the level of significance was set at p = 0.05.

3. Results and Discussion
The exercise test resulted in a significant increase in oxidative stress (p = 0.001), markers of inflammation (p = 0.014), and markers of muscle damage (AST [p = 0.0013] and CT [p = 0.089]). TCJB treatment reduced the increase in markers of muscle damage (AST [p = 0.0135] and CK [p = 0.054]). The mechanisms of action for this beneficial effect could not be...
ascertained, because the flux in TBARS and SAA was unaffected by TCJB treatment. In conclusion, oral administration of TCJB for 2 wk before strenuous exercise resulted in significantly less elevated markers of muscle damage after exercise. Administration of TCJB may diminish muscle damage induced by exercise and allow horses to return to training earlier after a competition.

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Footnote

*CherryPharm, Geneva, NY 14456.