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Effect of beetroot gel administration on performance, metabolic and biochemical parameters of physically active individuals

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The interest of the athletic population in sports nutrition is increasing. Several studies have been conducted to investigate if dietary NO_3^- can improve exercise performance by reducing maximum volume of oxygen ($\text{VO}_{2\text{peak}}$). The main objective of the study was to investigate changes in biochemical and metabolic parameters to aerobic exercise using beetroot nutritional gel. In a randomized, double blind, controlled placebo, crossover design study, 25 recreational healthy runners consumed 100 g oral doses of either the beetroot nutritional gel (BG, 9.92 ± 1.97 mmol of NO_3^-) or a placebo apple nutritional gel (PLA, 0.33 ± 0.15 mmol of NO_3^-) and completed a continuous run exercise test on a treadmill, involving stage in warm-up at 40%, moderate intensity at 90% of the gas exchange threshold I (GET I) and severe intensity to volitional fatigue at 70% of the difference between GET I and $\text{VO}_{2\text{peak}}$. Urinary NO_3^- and NO_2^- concentration (baseline: 0.306 ± 0.342 and 0.0008 ± 0.001 mmol/mmol creatinine, respectively) increased significantly 60 min after BG ingestion and immediately after exercise. BG did not promote significant differences in the $\text{VO}_{2\text{peak}}$ of moderate intensity (2.89 ± 0.78 vs 2.85 ± 0.65 l/min), severe intensity (4.00 ± 0.95 vs 3.93 ± 0.84 l/min) and time to fatigue (390.90 ± 158.50 vs 395.4 ± 179.60 sec) when compared with PLA supplementation, respectively. Systolic and diastolic blood pressure of the BG and PLA treatments did not differ significantly in any of the analyzed times. A single dose of BG gel, promoted higher excretion of NO metabolites, but did not enhance the physical performance of recreational athletes in an aerobic submaximal exercise.

Biography

Eduardo Mere Del Aguila has completed his PhD from Federal University of Rio de Janeiro, Brazil and Post-doctoral studies from Federal University of Rio de Janeiro. He is member of the Food Science Graduate Program. He has published more than 15 papers in reputed journals and has been serving as a reviewer of different reputed journals.

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