Evaluation of Anti-Fatigue Properties of Roxelle™ Sports Drink (ROXHSW100) in Moderate Endurance Exercise among Male Young Adults

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Abstract:

Background: Sports fatigue reduces physical performance and efficiency, yet there is no standard management guideline to mitigate this issue. Roxelle™ sports drink, an isotonic herbal beverage containing Hibiscus sabdarifa water extract proprietary formulation (ROXHSW100) standardized to 1% anthocyanins, was formulated to provide sustainable energy and act as an oral rehydration solution (ORS). This study evaluates the anti-fatigue properties of Roxelle™ during moderate endurance exercise in healthy young adult males.

Methods: A double-blind, paralel assignment clinical trial was conducted with 11 young male adults aged 18-26 years. Participants completed a self-paced run before and after supplementation with either Roxelle™ or a standard ORS. Participants were selected by simple sampling method and divided into two groups using random sampling method. Experimental group received Roxelle™, and the standard control group received a standard oral rehydration solution (ORS) daily for 7 days. Key physiological parameters, including body mass index (BMI), blood pressure, heart rate, exercise performance metrics, blood lactate and total antioxidant capacity (TAC), were measured before and after supplementation. A 10-minute self-paced outdoor run was conducted, with maximum heart rate and VO_2 max determined using a Garmin Forerunner 935 smartwatch. Blood lactate levels were assessed using a finger-prick method and TAC levels were measured from plasma using a TAC assay kit. Fatigue exertion was assessed using the Borg scale and blood pressure was measured using a digital sphygmomanometer. Statistical analysis was conducted using paired and independent sample t-tests, with significance set at $P<0.05$.

Results: Within the Roxelle™ group, significant improvements were observed in all measured factors, including heart rate, blood lactate, TAC, and Borg scale scores ($P<0.05$). Supplementation led to lower maximal heart rates, reduced blood lactate levels, lower scale of exertion and higher antioxidant capacity. However, no effect on VO_2 max was found. When comparing the Roxelle™

group to the control group, significant improvements were seen in TAC levels and Borg scale scores ($P<0.05$), reflecting the antioxidant properties and fatigue-reducing effects of Roxelle™.

Conclusion: Seven days of Roxelle™ supplementation significantly reduced fatigue and exertion levels in participants. Compared to the control, the Roxelle™ group demonstrated improved TAC levels and reduced perceived exertion, highlighting the efficacy of the standardized extract formulation and it's potent antioxidant benefits implicated in exercise induced fatigue.

Keywords:

Anti-oxidant, exercise performance, fatigue, Roxelle™, sports drink.