

Effects of Sago Consumption Associated with Endurance Exercise on Oxidative Stress in Recovery from 20–km Cycling Time Trial Performance in the Heat

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Abstract

Exercise in hot and humid conditions cause remarkable physiologic challenges for endurance athletes. The aim of the current study was to investigate the effects of carbohydrate consumption during endurance cycling performance on F_2 -isoprostanes as an oxidative stress biomarker. Sago flour is a commercial starch source that is frequently used in tropical countries, like Malaysia, as carbohydrate ingestion. The consumptions of sago have been shown to improve endurance performance. Twelve well-trained male cyclists (age: 19.0±5.6 years, body weight: 60.1 ± 11.2 kg, height: 170.8 ± 7.6 cm, and VO₂max: 56.5 ± 6.5 mL.kg⁻¹.min⁻¹) pedaled at 60% of VO₂max for 1.5 hours followed by a 20-km cycling time trial in the heat (31°C; 70% relative humidity). From the start of the cycling and at 20-minute intervals during 1.5 hours cycling participants ingested 200 mL of 7.5% of the sago supplement. There was a significant reduction of plasma F_2 -isoprostanes concentrations after endurance cycling as compared to the baseline levels. This study has shown that sago supplementation was able to lower the oxidative stress in the recovery after endurance cycling performance in the heat.

Keywords

Oxidative Stress, Sago, 20-km Cycling Time Trial, F2-Isoprostane, Heat

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