



AMERICAN COLLEGE
of SPORTS MEDICINE
LEADING THE WAY

 [Print this Page for Your Records](#)

[Close Window](#)

Control/Tracking Number: 16-SA-2211-ACSM

Activity: Scientific Abstract

Current Date/Time: 10/28/2015 4:13:26 AM

Metabolic and Physiological Responses by New Zealand Blackcurrant during Cycling: A Dose-Response Study

Author Block: Matthew Cook, Victoria Edwards, Stephen Myers, Mandy Gault, Mark Willems. *University of Chichester, Chichester, United Kingdom.*

Abstract:

New Zealand blackcurrant (NZBC) is high in anthocyanin content. Seven days of 300 mg/d NZBC extract decreased the respiratory exchange ratio during 10 min cycling bouts. Dose effects of NZBC on metabolic and physiological responses during prolonged endurance exercise are unknown. **PURPOSE:** To examine the dose-dependent effect of NZBC extract on the metabolic and physiological responses during 120 minutes cycling at a constant power at ~65% $\dot{V}O_{2max}$. **METHODS:** Fifteen trained male cyclists (mean \pm SD, age: 38 \pm 12 years, height: 178 \pm 5 cm, body mass: 76 \pm 10 kg, $\dot{V}O_{2max}$: 56 \pm 8 mL/(kg·min), maximum minute power: 378 \pm 55 W) completed four 120-minute cycling bouts on an electronically braked ergometer (SRM ergometer, SRM International). A counterbalanced Latin-square design assigned the order of four experimental visits (0, 300 (i.e. one capsule), 600 or 900 mg/d NZBC extract). Supplements (CurraNZ, Health Currancy Ltd, UK; each capsule contains 35% spray-dried anthocyanin concentrate) were provided for 7-days with 14-day washout periods. Dietary intake was controlled with food diaries for the 48 hours before each visit. Indirect calorimetry techniques were used at 15 min intervals with continuous heart rate recording and analysed with a one-way repeated measures ANOVA with significance accepted at $p < 0.05$. **RESULTS:** A dose effect was observed for the RER (0: 0.86 \pm 0.04; 300: 0.85 \pm 0.03; 600: 0.84 \pm 0.03; 900: 0.84 \pm 0.03) with Bonferroni post hoc testing showing a 2.49% and 2.48% decrease in RER for 600 and 900 mg/d NZBC, respectively. NZBC had no effect on oxygen consumption (0: 63.9 \pm 3.9; 300: 64.6 \pm 4.3; 600: 64.8 \pm 3.7; 900: 64.4 \pm 3.5 % $\dot{V}O_{2max}$), heart rate (0: 135 \pm 13; 300: 135 \pm 14; 600: 135 \pm 12; 900: 138 \pm 16 beats·min⁻¹) or cycling economy (0: 11.4 \pm 2.1; 300: 11.5 \pm 2.0; 600: 11.5 \pm 2.0; 900: 11.5 \pm 2.1 mL·kg⁻¹·W⁻¹). **CONCLUSION:** New Zealand blackcurrant extract for 7-days demonstrated a dose-response effect on the respiratory exchange ratio during cycling at ~65% $\dot{V}O_{2max}$ in endurance-trained athletes with the change suggesting enhanced fat oxidation. Further research is needed to establish whether there is a dose effect of New Zealand blackcurrant on endurance performance.

CurraNZ was provided by Health Currancy Ltd (UK), Blackcurrants New Zealand Inc (NZ) provided funding for conference attendance.

:

Author Disclosure Information: M. Cook: None.

Category (Complete): 0608. Metabolism and Nutrition - supplements, drugs and ergogenic aids

Keyword (Complete): Blackcurrant ; Fat oxidation ; Polyphenol

Unlabeled/ Investigational Products (Complete):

: No

Presentation Preference (Complete): Slide Preferred

Area of Interest (Complete):

Area of Interest: Applied Science

Additional Info (Complete):

***Do you authorize ACSM to record your presentation?:** Yes

***Confirmation:** I understand and agree to the above terms regarding AV equipment

Payment (Complete): Your credit card order has been processed on Tuesday 27 October 2015 at 7:14 AM.

Status: Complete

[OASIS Helpdesk](#)

[American College of Sports Medicine](#)

401 West Michigan Street

Indianapolis, IN 46202-3233

(317) 637-9200

[Leave OASIS Feedback](#)

Powered by [OASIS](#), The Online Abstract Submission and Invitation System SM

© 1996 - 2015 [Coe-Truman Technologies, Inc.](#) All rights reserved.

