

## Abstract

Purpose: New Zealand blackcurrants (NZB) contain a high concentration of various polyphenols, the most notable being anthocyanins which have been linked to anti-inflammatory effects, increased peripheral blood flow and reduced oxidative stress. Therefore, the purpose of this study was to investigate the effects of NZB supplementation on cardiovascular function and sports performance in rugby/football players. Methods: In a double-blinded, randomized, placebo-controlled, cross-over design, three male and two female athletes participated in two testing sessions. Participants were instructed to supplement twice daily for seven days (2x300mg, 1 capsule each time), equally distributed throughout the day. Participants began with a 3-minute warm-up at 50%  $VO_{2max}$ . Phase 1 consisted of a 5-minute run at 60%  $VO_{2max}$ . Phase 2 consisted of seven stages, totaling 204 seconds, with six repeated sprints lasting 19 seconds interspersed with active recovery bouts at 50%  $VO_{2max}$  lasting 15seconds. During the test, cardiovascular variables and respiratory gases were both collected. Results: The results showed that the number of completed sprints increased by 13% seen in 4 participants following NZB when compared to placebo (PLA) during the incremental running test (NZB:  $26\pm 5.31$  vs. PLA:  $23\pm 9.37$ ). Also, a trend was found for an 18.7% higher stroke volume during exercise in NZB ( $122\pm 24.5$  mL) compared with placebo ( $103\pm 16$ mL). Conclusion: In conclusion, a 7-day NZB supplementation improved repeated sprint performance and cardiovascular function during an incremental running test.