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## **New research highlights sports recovery potential in blackcurrants**

**Auckland, New Zealand. 18 June 2009...**A preliminary study by the New Zealand Institute for Plant & Food Research suggests that natural chemicals found in blackcurrants may help balance the impacts exercise can have on the body.

Researchers have found signs that an extract derived from New Zealand-grown blackcurrants - taken in capsule form before and after exercise - has three potential effects: minimising muscle damage by modulating oxidative stress, modulating inflammation and potentially enhancing the body's natural defenses against disease. The findings are published in the *'American Journal of Physiology – Regulatory, Integrative Comparative Physiology'*.

Negative impacts from sustained sports training is a growing health issue. While exercise is universally agreed to be healthy, extreme exercise – such as intense pre-event training - can have some drawbacks, including lowering the body's immune defenses and the increasing risk of muscle damage.

The Plant & Food Research study, lead by Dr Roger Hurst, looked at untrained individuals undergoing moderate exercise. It showed that those who took the blackcurrant extract exhibited reduced markers for oxidative stress linked to muscle damage and inflammation as well as increased activity linked to immune response.

“In our research, we chose a group of ten healthy everyday people with a wide age range who exercised regularly and measured biochemical indicators to assess the effect of taking the blackcurrant extract capsules before and after exercise,” says Dr Hurst.

“We found changes in the levels of biomarkers that indicate antioxidant activity, inflammation modulating ability and a support for the natural immune responsiveness to potential pathogens.”

The positive link between blackcurrants and exercise has been previously highlighted in studies in Japan where scientists evaluated the ability of NZ-grown blackcurrants to reduce inflammation in muscle groups related to sustained computer use and keyboard typing. This Japanese research flagged the potential of blackcurrants to reduce lactic acid build-up in muscles.

Dr Hurst says Plant & Food Research is yet to determine exactly what blackcurrant compounds cause the observed effects, but he doubts Vitamin C is a factor because the extracts tested contained only very low levels of the vitamin.

“We're looking more closely instead at the role of flavanoids within the fruit. Flavanoids are antioxidants, including anthocyanins, the compounds that gives blackcurrants their brilliant black-red colour.”

New Zealand-grown blackcurrants are known to contain high levels of anthocyanins, which may be linked to the cultivars grown here or to environmental conditions.

The study was undertaken and funded by Plant & Food Research in support of a wider research programme called 'New Berries' funded by the Government and the New Zealand blackcurrant industry. This programme investigates the antioxidant and immune supportive properties of berryfruit and berryfruit products. It aims to use this knowledge to breed elite New Zealand berries with assured health-promoting properties that will have multiple end-uses including the development of functional foods.

Plant & Food Business Manager for Food Innovations Karl Crawford says the paper has generated strong interest from industry and has also highlighted new areas for further research.

"This is early stage research, which by its very nature often raises as many questions as it answers. That is certainly the case here. We know we're on the right track in our belief that fruit extracts, combined with exercise, can have a beneficial effect on human health. In essence, this latest study is predictive – it is showing us where we need to look if we want to really maximise the health potential of fruit.

"We know fruit and vegetables are good for us, and science obviously has an in-depth understanding of fruit composition and the potentially beneficial effects of fruit compounds at a cellular level. This paper is part of one of the fastest growing areas in food and health research – looking to build knowledge that links those two areas of established science. It is exciting for consumers because the link for them will come in the form of new functional food products that deliver a proven, specific benefit to their health and wellbeing.

"We're talking about the potential to focus wellness benefits from foods. That means moving from, say, broad claims about potential antioxidant function toward far more specific information about benefits and the mode of action behind them."

## **ENDS**

### **\*\*\*NOTE\*\*\***

On Monday 22 June, international health and nutrition experts will discuss this and other advancements in functional food science at the Inaugural Plant & Food Research Functional Foods Symposium. For more information, visit the website at <http://www.plantandfood.com/conferences/functional-foods-symposium-2009/>.

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