MEDIA RELEASE
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HEALTH BENEFITS OF FRUIT AND VEGETABLES

Berry Under- or Over-Stated?

Delegates at this week's World Olympics of Horticulture – The International Horticulture Congress – will hear of a range of health benefits from fruit, vegetables, nuts, berries and so-called super-foods, functional foods and biofortified crops. Claims cover impacts on our eye and brain health, obesity, diabetes and in preventing and fighting various cancers.

A range of international and Australian specialists in the field of human health effects of fruits, vegetables, nuts and berries, as well as in traditional and modern knowledge of medicinal and aromatic plants, will be addressing over 3000 delegates from more than 100 countries who will attend the International Horticulture Congress (IHC2014) – the world premier horticulture event - in Brisbane from 17-22 August at the Brisbane Exhibition and Convention Centre.

New findings on the health benefits of cranberry phenolic compounds will be reported by Prof Yves Desjardins, who is member of the Institute of Nutrition and Functional Food at Laval University in Québec Canada (www.INAF.ulaval.ca). A world specialist in health effects of berry fruits on cardiovascular diseases, metabolic syndrome and diabetes, he is involved in a number of clinical trials on the effect of small fruit on type-2 diabetes and is addressing the shift in understanding the effect of berries on diseases.

"Our research, which is presented at the IHC2014 for the first time and will be published this month in the prestigious journal GUT, is showing that a cranberry extract (CE) can decrease diet-induced weight gain and visceral obesity; improve insulin sensitivity; prevent metabolic endotoxemia, and was associated with an important shift in mice gut microbial ecology.

"This is the first report of a fruit extract exerting a major pre-biotic effect on the intestinal microbiota of an animal model of diet-induced obesity.

"Our findings provide strong evidence that we can favour the development of a beneficial gut microbiota by consuming berry polyphenols and that these useful bacteria may improve metabolism in obese and type 2 diabetic patients. We are proposing a new mode of action for these molecules in the gut, an essential step forward in order to make nutritional recommendations based on scientifically proven food claims.

"We have specifically shown that CE can stimulate the colonization of a specific species of bacteria called *Akkermansia municiphila* that has been shown to be present in the gut of lean mice and not in those of obese mice. We believe that the presence of this bacteria may represent a good biomarker for the positive impact of phytochemicals and other nutritional interventions for health," he says.

Focus of a number of talks was on the antioxidant effect of some horticultural crops.

"In the last two decades, fruit and vegetables have attracted a lot of attention for their antioxidant activity, both in terms of research and marketing. However, the tide has turned and the term

antioxidant is now being rejected," reported Dr Carolyn Lister, Team Leader - Phytochemicals & Health, at the Food Innovation Portfolio at the New Zealand Institute for Plant & Food Research Limited.

"The European Food Safety Authority has stated that manufacturers cannot make health claims about foods containing antioxidants; the US Department Agriculture withdrew their antioxidant database; the Academy of Nutrition and Dietetics has removed the term "antioxidant" from the food and nutrition vocabulary, and under Food Standards Australia New Zealand, the term antioxidant cannot be used unless a self-substantiation dossier is compiled."

"This brings a whole series of challenges, marrying the scientific research with consumer understanding and the requirements of the legislation to enable the marketing of fruits and vegetables with valid health claims," she says.

(NB: Information on the key session on health benefits of fruits and vegetables is here.)

Other speakers making presentations on health issues are:

Dr Tim O'Hare from the Queensland Alliance for Agriculture and Food Innovation at the University of Queensland will address "Biofortification of Vegetables For The Developed World" and explain recent work for breeding for increased nutritional density. His current projects include the development of sweetcorn as a dietary protective measure against macular degeneration, tropically-adapted tomatoes for prostate cancer, and biofortification of macadamia nuts.

Biomedical Sciences Professor Lindsay Brown, from the University of Southern Queensland, is making a keynote presentation on "Foods As Medicines For Chronic Human Diseases" and is working on purple super-foods to reverse the health impacts of obesity including high blood pressure, fatty liver, problems in controlling blood sugar concentrations, impaired organ function and chronic low-grade inflammation. The new Queen Garnet Plum, the world's latest 'super fruit' has up to five times the levels of anthocyanins present in normal plums and its first commercial harvest is now underway with a 75,000 tree orchard expected to yield 200 tonnes of the new fruit this season, increasing in coming years.

Dr Elizabeth Jeffery is Professor Emerita of Nutrition and Professor Emerita of Pharmacology at the University of Illinois. Her major research interests are mechanisms of cancer prevention by fruits and vegetables, particularly broccoli.

Dr Paul Bernstein, the Mary Boesche Professor of Ophthalmology and Visual Sciences at the Moran Eye Center at the University of Utah's School of Medicine will be speaking on the health benefits of fruits and vegetable for the eye, with particular emphasis on macular degeneration.

Assoc Prof Joanne Jamie from the Faculty of Science at Macquarie University will be reporting on her community based efforts with indigenous communities in Australia and India, in an effort to preserve indigenous knowledge, develop cottage industries around plants of interest, and discover new drugs.

Prof Sandy Van Vuuren from the University of Witwatersrand South Africa will be talking about natural products and their role in treating skin diseases, with reference to some Australian products such as Manuka and tea tree.

In addition to presentations on particular fruits, vegetables, nuts and berries, more general issues include:

- The place of horticulture in world food production
- The future of indigenous vegetables and their role in the battle against malnutrition and disease
- Traditional and modern knowledge of medicinal and aromatic plants
- Mechanisation, precision horticulture and robotics
- Connections between nature, plants, landscapes and human health