MEDIA RELEASE

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Media are welcome to attend and prearranged interviews are encouraged.

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PROTECTING WEEDY AND WILD KIN

The World Olympics of horticulture will hear that 80% of our calorie intake comes from just 12 plant species; 50% of our calories come from wheat, maize and rice, yet 20% of world's plant species are under threat of extinction. This almost exclusive reliance makes agriculture more vulnerable to major threats like drought, insect pests and diseases. Increased promotion and utilization of the diverse pool of horticultural crops offers a solution for better global nutritional and dietary security.

The world's leading experts in biodiversity conservation, collection of crop wild relatives and the importance of traditional and indigenous fruit and vegetables will be speaking to over 3000 delegates from more than 100 countries who will attend the International Horticulture Congress (IHC2014) – the world premier horticulture event from 17-22 August at the Brisbane Exhibition and Convention Centre.

"Global efforts to adapt staple foods like rice, wheat and potato to climate change have been given a major boost by a project to collect, protect and utilise crop wild relatives. These wild cousins of our crops could hold beneficial qualities to help improve crops and make them more productive and resilient. Australia has a number of these plants," says Dr Hannes Dempewolf, Scientist at the Global Crop Diversity Trust (Crop Trust).

The Crop Trust was behind the establishment of the Svalbard Arctic Seed Vault which received a shipment of Australia's crop wild relatives earlier this year.

"Australia has no native crops aside from Macadamia nut. It therefore may be surprising to realize that Australia contains a wealth of wild relatives of a number of important crops."

"Cousins" to the major foods we eat, crop wild relatives contain a diversity of important traits for disease resistance and yield improvement, and may provide critical contributions to breeding for adaptation to climate change."

He notes that the crop wild relatives of Australia include over 150 taxa related to more than 10 crops of major significance -- from the world's most important oil crop (soybean), and one of the world's most important cereals (rice), to crops of major importance for food security in Sub-Saharan Africa (sorghum) and South Asia (pigeon pea).

"In Australia, the greatest wealth of these wild genetic resources occurs in the northern, tropical region, from Western Australia, Northern Territory, and Queensland. And although crop wild relatives are found in all States, this northern region is also where the highest priorities for further collecting are to be found for the relatives of several horticultural crops, including eggplant, banana and sweet potato. "

"Some of these crop wild relatives have already served as important donors of traits for crop improvement, such as the tomato wild relative *Solanum habrochaites* (*Lycopersicon hirsutum* Dunal) which is an example of a species containing useful genetic diversity that is not visible to the eye. This species, whose fruits do not turn red with ripeness, unexpectedly provided new genes for significantly

improving fruit colour in cultivated varieties. Also hidden within its genes were traits for significantly improving total yield and the soluble solids content of tomatoes"

Noting a new collaboration between the Trust, Kew's Millennium Seed Bank and national and international agricultural research institutes, he says it will be the largest ever global effort to conserve crop wild cousins of some of the world's most important crop species which are not adequately saved in genebanks and not available to researchers and plant breeders for crop improvement.

"We are currently in discussions with some Australian partners to see whether they can join the collecting and therefore contribute to this global effort."

He noted that the gap analysis results show that 54% of the crop wild relatives on the target list are high priority for collection as they have not been collected before, or existing collections do not adequately represent their full geographic distribution.

Another example of where wild relatives have already been used to enhance crops is with wild broccoli species that have been used to produce a nutritionally enhanced variety of broccoli which leads to lower levels of heart disease and acts against some forms of cancer.

Some of the fruit and vegetables to be collected and protected are apple, eggplant (aubergine), bambara groundnut, carrot, sweet potato, banana and plantain.

International plenary speakers include:

- Em Prof Marc Van Montagu, World Food Prize Laureate (2013) and co-discoverer of the transformation technology used worldwide to produce genetically engineered plants.
- Dr Shenggen Fan, Director General of the leading food think-tank, International Food Policy Research Institute, who received the 2014 World Food Programme's Hunger Hero Award.
- Dr Dyno Keatinge, Director General of the World Vegetable Centre and Chair of the Global Horticulture Initiative.
- Dr Dennis Gonsalves, former director of the USDA Pacific Basin Agricultural Research Center, who led the development of the virus-resistant transgenic papaya, saving the Hawaiian papaya industry.
- Malcolm Smith, the founding design director of the Integrated Urbanism Unit at Arup, London. The title of his keynote address is "Food forming places - horticulture and the contemporary city".
- Dr Martin Hamer, CEO, International Centre for Sustainable Development, Bonn-Rhein-Sieg University of Applied Sciences, who specialises in preventing transfer of pollutants into the food chain.

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

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