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### **BIOFORTIFICATION—A NUTRITIONAL SOLUTION FOR THE WORLD: Agriculture needs to be nutrition and climate-smart**

Bringing agriculture and nutrition science together to fight ‘hidden hunger’ is a no-brainer, with benefits to the undernourished, to food security and to the economy.

This will be the message of 2016 World Food Prize Winner, Dr Howarth (Howdy) Bouis, Director and Founder of HarvestPlus and a winner of this year’s World Food Prize, speaking at the National Press Club on 15 August. The Prize is widely known as the ‘Nobel Prize for Agriculture and Nutrition’ and Dr Bouis’ award was given in recognition of his fight against the global problem of micronutrient deficiencies through biofortification.

Dr Bouis will lead a panel with Australian collaborators speaking on the nutrition and development impacts of biofortification, globally and in our region; the conventional and other science breeding underway; and the goal to make biofortification the nutritional solution for the world. The event will be co-hosted by the Crawford Fund, The Australian Centre for International Agricultural Research, and The National Rural Press Club.

“Malnutrition caused by a lack of vitamins and minerals in the diet, commonly known as ‘hidden hunger’, affects more than 2 billion people around the world, especially in poorer nations. What matters is not just how many calories people get, but the nutritional value contained in their food,” Dr Bouis explained.

“Our basic food systems have to be optimized to provide the greatest amount of nutrients per square foot that can be produced sustainably, especially in the face of climate change.”

Bouis’ 25 years of pioneering work in expanding the impact of biofortification and breaking down the silos between agriculture and nutrition has identified this robust solution to ending hidden hunger.

“Biofortification breeds critical vitamins and micronutrients directly into staple crops to improve their nutritional quality, through agronomic practices, conventional and more modern plant breeding,” explained Bouis.

Examples of work by Australian universities that are to be highlighted by Australia speakers at the panel include:

- selenium biofortified bread wheat, conventionally bred and on the market
- iron biofortified rice and wheat, developed through biotechnology approaches.

Biofortified crops, including iron- and zinc-fortified beans, rice, wheat, and pearl millet and vitamin A-fortified cassava, maize, and orange-fleshed sweet potato, are now being tested or released in over 40 countries. It has improved the health of millions of people in Asia, Africa and Latin America, and that number could balloon to several hundred million in the coming decades.

“I can see a time when a billion people will be buying and eating fortified crops,” said Dr Bouis.

“Australia and Australian scientists have played an important role in the development of HarvestPlus, and the development of new varieties that are climate-smart, high-yielding, and packed with micronutrients,” he said. The panel includes scientists from Adelaide, Melbourne and Flinders Universities, and partner World Vision Australia.

Bouis explained that biofortification makes more economic sense than popping pills.

“500 million vitamin A capsules are given out each year, and they cost \$1 per capsule—not because of the manufacturing but due to recurring costs. After a decade you have spent \$5 billion, and you still haven't fundamentally addressed the underlying cause.”

“With agricultural research, you develop the varieties, you spend far less money on the research upfront and then you get those varieties into the food system and the farmers grow them, and people eat them. You don't have recurring costs—you are piggy-backing on an existing system.”

Cumulatively, more than 100 biofortified varieties across 10 crops have been released in 30 countries, whereas second and third waves of even higher nutrient lines are being tested for future release. Candidate biofortified varieties across 12 crops are being evaluated for release in an additional 25 countries. HarvestPlus estimates that 20 million people in eight target countries are now growing and eating nutrient-rich biofortified staple foods.

**[More about Bouis, HarvestPlus and biofortification, including photos and videos](#)**