

Biofortified crops as an emerging nutrition intervention for two continents: state of the art update on rice and maize

Session Description

HarvestPlus is the largest biofortification research program in the world. With over 200 research partners in over 40 countries, HarvestPlus is working to improve the inherent micronutrient nutrient density of staple crops through plant breeding. The HarvestPlus program concentrates on the development and testing of rice, wheat, maize, cassava, bean, pearl millet and sweet potato that are high in zinc, iron or provitamin A. Before 2013, HarvestPlus anticipates having formally released six crops in 11 countries in Africa and Asia. Given the imminent dissemination of this new nutrition intervention for Asia & Africa, the presentation of HarvestPlus' current research and planned outputs are both timely and important.

Purpose

Since 2004 when HarvestPlus began to conduct state of the art nutrition research on staple foods, many discoveries have been made, protocols developed and methods established to measure and test the viability of this novel food based approach to improving micronutrient sufficiency. Extensive agriculture and nutrition research has been conducted to measure, evaluate and enrich the inherent micronutrient content of staple crops. Biofortified crops have been bred to reach nutrient density levels that account for estimated consumption patterns, bioavailability, and processing and retention losses. Indicators have been established to measure biological efficacy and effectiveness of these new foods in challenging environments. Over the past four years many advances have been made that are best shared with other nutritionists and food security specialists interested exploring the power and promise of biofortification. The session is designed to expose the audience to the vast array of research that has been conducted to date and provide an opportunity to raise questions that inform and further refine the biofortification research strategy.

Session Chair & Co-Chair: TBA

Session Topics and Speakers:

- 1.0 **Introduction to Biofortification (15 minutes)**
E. Boy, HarvestPlus, Canada

- 2.0 **What is possible with conventional breeding and transgenic techniques? (60 Minutes – 3-15 minute presentations, 15 minute discussion)**
 - What are the target levels?
C. Hotz, HarvestPlus, Canada
 - What have we learned and progress to date on conventional breeding?
Wolfgang Pfeiffer, International Center for Tropical Agriculture, Colombia
 - What have we learned and progress to date on transgenics?
Peter Beyer, University of Freiburg, Germany

Discussion 15 minutes

- 2.0 **Establishing bioavailability (40 minutes - 2-15 minute presentations, 10 minute discussion)**
 - Testing the bioavailability of iron- and zinc-biofortified crops: An overview
Bo Lonnerdal, UC Davis, USA

- Advances in testing for bioavailability in provitamin A maize
Wendy White, Iowa State University, USA

Discussion 10 minutes

3.0 Consumer acceptance of biofortified crops
TBA (20 minutes, one presentation covering all studies)

Willingness to pay for provitamin A crops in Africa
JV Meenakshi, Impact Coordinator HarvestPlus, USA

General Discussion 15 minutes