

P0937

**The Species-Specific Crop Ontology (Generation Challenge Programme):  
Application and Integration into the Reference Plant Trait Ontology to Enable  
Data Mining on Phenotypes**

Date: Monday, January 14, 2013

Room: Grand Exhibit Hall

Elizabeth Arnaud , Bioversity International, Maccarese, Roma, Italy

Rosemary Shrestha , CIMMYT, Mexico

Peter Kulakow , International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria

Moshood Bakare , IITA, Ibadan, Nigeria

Antonio Lopez-Montes , IITA, Ibadan, Nigeria

Sam Ofodile , IITA, Ibadan, Nigeria

Praveen Reddy T. , ICRISAT, Patancheru, India

Peteti Prasad , ICRISAT, Patancheru, India

Trushar Shah , ICRISAT, Hyderabad, India

Charles Thomas Hash , ICRISAT, Niamey, Niger

Eva Weltzien-Rattunde , ICRISAT, Bamako, Mali

Ibrahima Sissoko , ICRISAT, Bamako, Mali

Alberto Fabio Guerrero , CIAT, Cali, Colombia

Reinhard Simon , CIP, Lima, Peru

Nikki Frances Borja Borja , IRRI, Los Banos, Philippines

Mauleon Ramil , IRRI, Los Banos, Philippines

Luca Matteis , Bioversity International, Rome, Italy

Milko Skofic , Bioversity International, Roma, Italy

Tom Hazekamp , Bioversity International, Roma, Italy

Graham McLaren , Generation Challenge Programme, Canada

Laurel Cooper , Oregon State University, Corvallis, OR

Pankaj Jaiswal , Dept. of Botany & Plant Pathology, Oregon State University, Corvallis, OR

Naama Menda , Boyce Thompson Institute for Plant Research, Ithaca, NY

Rex Nelson , USDA-ARS CICGRU, Ames, IA

David Grant , USDA-ARS CICGRU, Ames, IA

Ruth Bastow , GARNet, Warwickshire, United Kingdom

Lukas Mueller , Boyce Thompson Institute for Plant Research, Ithaca, NY

Jean-Francois Rami , CIRAD, Montpellier, France

The Crop Ontology (CO) of the Generation Challenge Program (GCP) (<http://cropontology.org/>) currently contains eleven crop-specific ontologies and has been developed for the Integrated Breeding Platform (IBP) (<https://www.integratedbreeding.net/>) by several CGIAR centers. The CO provides validated trait names used by crop communities of practice (CoP) for harmonizing the

annotation of phenotypic and genotypic data and thus supporting data accessibility and discovery through web queries. The trait information is completed by the description of the measurement methods and scales and images. The trait dictionaries used to produce the Integrated Breeding (IB) fieldbooks are synchronized with the CO terms for automatic annotation of the phenotypic data measured in the field. The CO acts as a trait name server for various sites and databases: the Genotyping Data Management System (GDMS); the cassava database at Cornell University (<http://cassavadb.org>); Agtrials, the Global Repository for Evaluation Trials of Climate Change, Agriculture and Food Security (CCAFS), a CGIAR Research Program (<http://agtrials.org>); and the EU-Sol BreedDB website (<https://www.eu-sol.wur.nl/>). The vision will be presented of a species-neutral and overarching Reference Plant Trait Ontology to support data annotation, integration and data mining across species, which has resulted from the successful collaboration between the CO project, the Plant Ontology (PO; <http://www.plantontology.org/>), the Trait Ontology (TO; [http://www.gramene.org/plant\\_ontology/](http://www.gramene.org/plant_ontology/)) the USDA-ARS SoyBase Database (<http://www.soybase.org/>), the Solanaceae Genomic Network (<http://solgenomics.net/>), and GarNet (<http://www.garnetcommunity.org.uk/>).