



Ontologies for Agronomic Traits

8-9th December 2011 Cambridge, UK



UK Network for Arabidopsis and wider plant community

- **Ensure the community remains competitive and productive**
- **Help researchers make the best use of available funds**
- **Act as an information hub**
- **Provide a contact point for researchers and funding agencies**
- **<http://www.garnetcommunity.org.uk/>**
- **UK Plant Sciences Federation**
- **<http://www.plantsci.org.uk>**



Cambridge Workshop 2011

- **Ever-increasing amount of sequence data being generated has resulted in a gap between the physical genome information and the quantitative information regarding phenotypes and traits.**
- **Application of quantitative genetic information by researchers and breeders is limited by a lack of standardisation in the nomenclature used to describe both crop development and agronomic traits.**
- **Hard to compare QTL and association studies for systematic transfer of knowledge between genotype and phenotypes.**

Workshop Deliverables

- **Illustrate a number of key uses cases utilising ontologies**
- **Consider the establishment of a UK Crop Ontology Network**
- **Promote interactions across current international projects**

Cambridge Workshop 2011

- **Around 30 attendees from across the globe**
- **Scientists, breeders, ontology experts**
- **14 talks - <http://transplantdb.eu/node/68>**
- **Capabilities and limits of current ontologies**
- **Future developments and areas of need**



Outcomes / Actions

- **Improve current ontologies for UK/EU crops**
 - Growth stages for wheat and OSR need to be added into current ontologies
 - Cereal anatomy ontologies need extending for barley and wheat
 - Hold a workshop in Oregon with the PO team
- **Improve community uptake and use**
 - Build up examples of use cases - ongoing
 - Create working groups for wheat, barley, OSR and leafy veg - ongoing
- **Widen participation and involvement**
 - Presentations at UK meetings 'to spread the word'
 - Involve crop modellers, environmentalist scientists and soil scientists
 - Future UK/EU workshop

Outcomes/ Actions

- **Make best use of funding and resources**
 - Build upon expertise at PO and GCP
 - Promote collaboration across large projects e.g. EPPN, transPlant
- **Areas for future development**
 - Plant Pathology and Disease
 - Metabolic Pathways and Metabolism
 - Study Design & Metadata - Essential for reproducibility and comparison of experiments
 - Environmental Ontologies – Need to get an agreed minimal set of information such as time of day, duration of experiment, geographical location, light intensity, light quality, rooting medium, nutrients etc etc