

SUGGESTED TOPICS FOR FUTURE TALKS

Arranged by subject

PESTS

Genomics and resistance to pests
Insect resistance (2x)

DISEASES

Plant-pathogen interactions
Host / Pathogen interactions
Disease resistance
What do we know about resistance genes, especially race specific v race non specific?
Disease resistance
Molecular biology of disease resistance
Disease traits (2x)

PHYSIOLOGY

Abiotic stress tolerance traits
Water and mineral use efficiency
Genetic basis of key traits (sustainability traits (water use- nutrient use-efficiency etc))

QUALITY

Quality traits
Quality traits in different cereals
Quality of final products
Starch biosynthesis and hydrolysis
Improving cereal grain for processing
Potential for further improving aspects of nutritional quality

TRAITS

More on trait analysis
Trait impact (impacts on environment/ process etc)
Some more focussed molecular biology - i.e. particular traits or particular genes
systems biology in relation to traits
scaling from genes to traits
traits relating to crops
Genetic control of target traits and exploitation in breeding programmes

POLICY/PROJECTS

Overview of GABI and Genoplante program on small grain cereals
What outcomes is government looking for from applied research in universities, institutes and industry
Talks on funded CSI proposals
Effect of Water Quality Directive on cereal breeding targets
technology transfer and industry bridging
Cross agency funding
International collaboration
Helping the third world help themselves

RESOURCES

Resources: genomic and genetic UK and world.
Genetics resources and their use for research and breeding

RESEARCH OUTCOME

examples of how people have made use of all the data to successfully dissect a trait
Translating discoveries into value.
Any talks that link in biotechnology in all its forms to a deliverable result for plant breeding
"Story of success " in cereals breeding (could be Australia, USA or Europe)
Examples of where "model to crop" has worked e.g. Ppd1
Evidence of molecular breeding
Models to crops
LINK successes and applications to date to show what can be done on technology transfer

BREEDING FOR SPECIFIC END PRODUCT/ENVIRONMENT

Breeding and genomics for bio-energy
More talks on applications of technology e.g. Bio-pharming, bio-fuels
Bioethanol

non-food uses for cereals inc. UK biomass/energy crops
Breeding for the UK organic market
Use of cereals in various countries and targets for improvement.
cereal research related to developing countries
new challenges for breeding sustainable organic farming and climate change

BIOINFORMATICS

bioinformatics - tools that may be useful to people working on cereals
UK cereal bioinformatics resources (part of MONOGRAM)

MARKERS

Marker-assisted selection - practical examples from the UK
Less marker technologies and transcriptomics - some is good, but the session was top heavy

ASSOCIATION GENETICS

Association genetics
Advances in association genetics and SNP discovery/detection in wheat
Diversity and association genetics in inbreeding crop plants
Application of association genetics for mapping agronomic traits
QTLs (mapping, dissection and cloning) and association studies in cereals

TECHNOLOGIES

HTP technologies for molecular markers
Cereal transformation
Tilling/mutagenesis
New techniques (e.g. molecular), how they are helping our understanding, elucidation of improving specific wheat quality traits
Cereals transformation
Genomics (including a new tools development)
Transformation studies one year on, what the BRAC project has achieved
Gene function and traits Transcriptomics/other omic technologies
Functional genomics tools

FUNCTIONAL GENOMICS

Cereals functional genomics
functional genomics

TRANSGENICS

Use of cereal transgenics to answer a biological question
The future of transgenic research and breeding in the UK and freedom to do transgenic field trials. Ways of getting over the current vandalism problems.

PLANT DEVELOPMENT

Aspects of development as potential targets for grain/yield improvement
Cereal Plant development

CELLULAR

A session on grain development, more cellular topics
molecular cytogenetics

PHENOTYPE/GENOTYPE STUDIES

Working with GxE interactions
Connecting phenotype with genotype
Sequence and phenotype diversity

OTHER TOPICS

A session for PhD students to highlight important work that they are involved with
Breeder's objectives (other than yield)
Comparative mapping and identification of orthologous candidate genes (or something like that)
Physical mapping its role uses in crop species
epigenetics in cereals
Yield components
Research explaining basic biology of cereals
Maize genetics as a model for cereals
Comparative analysis between the monocots