AAB CONFERENCE CALENDAR

2014

29-30 January	**Wheat Breeding 2014: Tools, targets & progress** Rothamsted Research, Harpenden, Herts, UK (PP&CI Group)
1-3 April	**Pollinators in Agriculture** Brussels, Belgium (venue to be confirmed) (CATE Group)
16 April	**Advances in Cider Technology** Pershore College, near Evesham, Worcestershire (AM&B Group)
16-18 June	**Breeding Plants to Cope with Future Climate Change** University of Leeds (Multidisciplinary/University of Leeds)
18-20 June	**Agronomic decision making in an uncertain climate** University of Leeds (CATE Group)
9-12 September	**5th International Symposium on Biofumigation** Harper Adams University, Newport, Shropshire, UK (HAU/Nematology Group)
12-13 November	**Advances in Biological Control & IPM** Olde Barn Hotel, Marston, Lincs (Biocontrol & IPM Group)
25-26 November	**Crop Protection in Southern Britain - Precision Decisions for Profitable Cropping** Peterborough Arena, Peterborough (CATE Group/AICC, AIC, BCPC)
9-11 December	**Sustainable Agriculture - *Annals of Applied Biology* Centenary Conference** Olde Barn Hotel, Marston, Lincs (Multidisciplinary, *Annals* Board of Editors)
16 December	**Advances in Nematology** Linnean Society of London, Piccadilly, London (Nematology Group)

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Association of Applied Biologists

President: Professor Peter Shewry BA, BSc, PhD, DSc

A 2 day conference

at Rothamsted Research, Harpenden, Herts

on 29-30 January 2014

PROGRAMME

Wheat Breeding 2014: Tools, targets & progress

Association of Applied Biologists
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Wheat Breeding 2014: Tools, targets and progress

at Rothamsted Research, Harpenden, Herts AL5 2JQ, UK

on 29-30 January 2014

Organised by

Nigel G Halford (Rothamsted Research, UK) & Simon Griffiths (John Innes Centre, UK)

Recent years have seen the development of powerful new tools for wheat breeders, including genome data, doubled haploid mapping populations and mathematical modelling of whole systems. This conference will bring researchers from academia and institutes together with wheat breeders to debate the opportunities that these new tools offer and how they are being applied for wheat improvement. It will also engage representatives from the food industry to describe the key targets that they want to see incorporated into breeding programmes.

Programme

Wednesday 29th January

08:00 Registration & Coffee

09:00 Welcome

Session 1: Tools, resources and methods

09:05 *Invited speaker*
New breeder-friendly tools for genotyping the wheat genome
KEITH EDWARDS, GARY BARKER, SACHA ALLEN, AMANDA BURRIDGE, PAUL WILKINSON & MARK WINFIRLD (University of Bristol, Bristol, UK)

09:35 *Invited speaker*
Unraveling complex traits in polyploid wheat
CRISTOBAL UAUY (John Innes Centre, Norwich, UK; NIAB, Cambridge, UK)
JAMES SIMMONDS, NICHOLAS BIRD & OLUWASEYI SHORINOLA (NIAB, Cambridge, UK)

10:05 *Invited speaker*
GplusE: beyond Genomic Selection
IAN MACKAY (NIAB, Cambridge, UK)

10:35 **The IWGSC: Strategies & Activities to Sequence the Bread Wheat Genome**
KELLYE EVERSOLE and THE INTERNATIONAL WHEAT GENOME SEQUENCING CONSORTIUM (IWGSC, Bethesda, MD, USA)

11:00 Coffee

11:25 *Invited speaker*
Identifying new and useful variation in wheat landrace cultivars
SIMON GRIFFITHS (John Innes Centre, Norwich, UK)

11:55 *Invited speaker*
Regulating chromosome exchange in wheat and its hybrids
GRAHAM MOORE (John Innes Centre, Norwich, UK)

12:25 **High density SNP mapping and genome synteny to identify candidate genes underlying QTL for pre-harvest sprouting**
MARK JORDAN, ADRIAN CABRAL, CURT McCARTNEY, GAVIN HUMPHREYS (Cereal Research Centre, Agriculture and Agri-Food Canada) & CURTIS POZNIAK (Crop Development Centre, University of Saskatchewan, Saskatoon, Canada)

12:50 **proWeizen – the German Wheat Research and Breeding Alliance**
TANJA GERJETS (Society for the Acquisition and Utilization of Property Rights (GVS), Bonn, Germany)

13.15 Lunch & Posters

Session 2: Quality and safety

14:10 *Invited speaker*
Improving the quality of wheat for a healthy diet
PETER SHEWRY (Rothamsted Research / University of Reading, UK)

14:40 *Invited speaker*
Reducing the acrylamide-forming potential of wheat
TANYA CURTIS (Rothamsted Research, Harpenden, UK)

15:10 **Small scale wheat quality testing**
GEMMA CHOPE & SIMON PENSON (Campden BRI, UK)

15:35 **Quality-oriented wheat breeding targets in Hungary**
MARIANNA RAKSZEGI, BOGLÁRKA N KISGYÖRGY, KAROLINA BEDE, LÁSZLÓ LÁNG & ZOLTÁN BEDŐ (Hungarian Academy of Sciences, Brunszvik, Hungary)

16:00 Tea

Session 3: Stress tolerance and climate change

16:25 *Invited speaker*
Novel hormone traits contributing to drought and heat tolerance
BILL DAVIES, HU GUOFENG, RAVI VALLURU & ARNAULD THIRY (University of Lancaster, Lancaster, UK)

16:55 **Building a Future for Hard White Winter Wheat in the US Great Plains**
SCOTT HALEY (Colorado State University, Fort Collins, Colorado, USA)

17:20 **Wheat ideotypes for a changing climate in Europe**
MIKHAIL A SEMENOV & PIERRE STRATONOVITCH (Rothamsted Research, Harpenden, UK)

17:45 End of Session (Day 1)

Thursday 30th January

08:30 Registration

Session 4: Nitrogen

09:00 *Invited speaker*
Genetic diversity for nutrient use efficiency
MALCOLM HAWKESFORD (Rothamsted Research, Harpenden, UK)

09:30 **New Wheat Root Ideotypes for reduced input systems: *Ex situ* root characterisation**
TRACY A VALENTINE, ALISON J KARLEY, KIRSTY BINNIE, GEOFF R SQUIRE (The James Hutton Institute, Dundee, UK), STEVEN BENTLEY, DAVID LEE, GIACOMO MORREALE and ANDY GREELAND (NIAB, Cambridge, UK)

09:55 *Invited speaker*
Phenotyping for nitrogen economy in wheat using physiological traits
JOHN FOULKES, ORBESSY GAJU (University of Nottingham, Leicester, UK), VINCENT ALLARD, PIERRE MARTRE (INRA Genetics, Clermont-Ferrand, France), JOHN SNAPE (John Innes Centre, Norwich, UK), JACQUES LE GOUIS, DELPHINE MOREAU, MATTHIEU BOGARD (INRA Genetics, Clermont-Ferrand, France), SIMON GRIFFITHS, SMON ORFORD (John Innes Centre, Norwich, UK), ALISTAIR PASK (University of Nottingham, Leicester, UK), ROGER SYLVESTER-BRADLEY (ADAS Boxworth, Cambridgeshire, UK), PETER JAMIESON (Institute for Crop and Food Research, Christchurch, New Zealand) & JAYALATH DESILVA (University of Nottingham, Leicester, UK)

10:25 *Invited speaker*
Nitrogen use efficiency in bread wheat: breeding tools and recent genetic progress
JACQUES LE GOUIS (INRA, Clermont-Ferrand, France; UBP, Clermont-Ferrand, France), FABIEN CORMIER, SÉBASTIEN FAURE, PIERRE DUBREUIL (Biogemma, Chappes, France), EMMANUEL HEUMEZ (INRA Péronne, France), KATIA BEAUCHÊNE (ARVALIS-Institut du végétal, Orsay, France), STÉPHANE LAFARGE, SÉBASTIEN PRAUD (Biogemma, Chappes, France)

10:55 Coffee

Session 5. Yield

11:20 *Invited speaker*
Photosynthesis as a target to improve wheat yield: synthetic approaches and existing variation
CHRISTINE RAINES (University of Essex, UK)

11:50 *Invited speaker*
Fruiting efficiency an alternative trait to further rise wheat yield potential
GUSTAFO SLAFER (Universitat de Lleida, Lleida, Spain)

12:20 *Invited speaker*
Gibberellin signalling: The target of the first green revolution, but not for the second
MIKE GOODING & RICHARD CASEBOW (University of Reading, UK)

12:50 **Identification of Novel Rht-1 Dwarfing Alleles**
STEVE THOMAS, ARCHANA PATIL, CHEN LIANG, CUNEYT UCARLI, KATHRYN GRANT, GEORGE LUND, PETER HEDDEN & ANDREW PHILLIPS (Rothamsted Research, Harpenden, UK)

13:15 Lunch & Posters

Session 6. Disease resistance

14:15 *Invited speaker*
Genetic approaches to minimise take-all root disease in wheat
KIM HAMMOND-KOSACK (Rothamsted Research, Harpenden, UK)

14:45 *Invited speaker*
Improving *Fusarium* head blight resistance in wheat and barley
PAUL NICHOLSON (John Innes Centre, Norwich, UK)

Session 7. Hybrid wheat

15:15 *Invited speaker*
Developments in wheat breeding using hybrid technologies
RICHARD JENNAWAY (Saaten Union, Suffolk, UK)

15:40 **A novel hybrid seed system for wheat**
MARIO GILS, MYROSLAVA RUBTSOVA & KATJA KEMPE (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Gatersleben, Germany)

16:05 Closing remarks

16:10 Tea and depart

Posters

Improving amylose content in durum wheat by tilling
SESTILI F, BOTTICELLA E (University of Tuscia, Viterbo, Italy), MANTOVANI P (Società Produttori Sementi S.p.A., Bologna, Italy), PALOMBIERI S (University of Tuscia, Viterbo, Italy), FERRAZZANO G (Società Produttori Sementi S.p.A., Bologna, Italy), PHILLIPS A (Rothamsted Research, Harpenden, UK), MASSI A (Società Produttori Sementi S.p.A., Bologna, Italy) & LAFIANDRA D (University of Tuscia, Viterbo, Italy)

Effects of tiller inhibition (*Tin1A*) gene and plant density on yield potential traits in doubled haploid lines of the L14 × Rialto population of wheat
KHALED AISAWI, JOHN FOULKES (University of Nottingham, Sutton Bonington, UK) & MATTHEW REYNOLDS (CIMMYT, Texcoco, Mexico)

Breeding wheat for grain yield, changes in emphasis over the years from dependence on a physiological ideaotype to the search for new genes
JOHN BINGHAM (Dereham, Norfolk) & RICHARD SUMMERS (RAGT seeds Ltd, Essex, UK)

Wheat genes for enhanced dietary fibre to improve human health
JACKIE FREEMAN, ALISON LOVEGROVE, TILL K PELLNY, MARK D WILKINSON, ROWAN A C MITCHELL & PETER R SHEWRY (Rothamsted Research, Harpenden, UK)

A Community Resource for Wheat Transformation
EMMA WALLINGTON, MELANIE CRAZE, SARAH BOWDEN, RHIAN HOWELLS & ANDY GREENLAND (NIAB, Cambridge, UK)

A molecular analysis of gene expression in phosphorus deficient wheat roots
ASTRID GRÜN, PETER BUCHNER (Rothamsted Research, Harpenden, UK), MARTIN BROADLEY (University of Nottingham, Sutton Bonington, UK) & MALCOLM J HAWKESFORD (Rothamsted Research, Harpenden, UK)

"Public Wheat Germplasm Resources in the Germplasm Resources Unit at the John Innes Centre"
MIKE AMBROSE, LIZ SAYERS & STEVE READER (Germplasm Resources Unit, John Innes Centre, Norwich, UK)

"The Wheat Precise Genetic Stocks collection in the Germplasm Resources Unit at the John Innes Centre"
ADRIAN TURNER & MIKE AMBROSE (Germplasm Resources Unit, John Innes Centre, Norwich, UK)

Assessment of genetic diversity for drought tolerance in bread wheat through RAPD and STS
SAJIDA BIBI (Nuclear Institute of Agriculture, Tando Jam, Pakistan), M U DAHOT (Institute of Biotechnology and Genetic Engineering, University of Sindh, Jamshoro), A L PHILLIPS (PBCS, Rothamsted Research) & I A KHAN (Nuclear Institute of Agriculture, Tando Jam, Pakistan)