

## **WGIN Management Meeting – 26<sup>th</sup> February 2004, Nickersons**

**Attending:-** Peter Shewry, Kim Hamond-Kosack, Andy Phillips, John Snape, David Marshall, Chris Chapman, Mike Holdsworth, Neil Paveley, Jim McVitie, Donal O’Sullivan, Richard Summers, Peter Werner, Stephen Smith, David Feuerhelm, Richard Jennaway, , Thomas Jolliffe, Mike Field and Sam Irving

**Apologies:** - Robert Koebner, Bruno Viegas, Donal Murphy-Bokern, Keith Edwards, Graham Jellis

### **AGENDA**

- 1 Introduction**
- 2 Update on work in progress.**
- 3 Follow up activities involving the breeders.**
- 4 Report on Breeders Meeting.**
- 5 Trait analysis.**
- 6 Future targets for pathogen resistance.**
- 7 Close**

#### **1 – Introduction**

Minutes of previous meeting and Breeder’s Meeting received and approved. Sam Irving introduced to the group as administrative support for the project.

#### **2 – Update on work in progress**

JWS reported on work carried out at JIC on germplasm resources and evaluation, and mapping populations (**Document WGIN 2004 –M1-JIC workpackages**). It was agreed that links to all the datasets mentioned will be placed on WGIN website. Questions were asked about SNP procedures, these will be redirected to Robert Koebner (**Action item**).

KHK reported on work carried out at RRes on the nitrogen use efficiency and canopy architecture field trial, diploid wheat accessions, and *Septoria* leaf blotch and soil borne cereal mosaic/*Polymyxa graminis* pathology tests (**Document WGIN 2004 – M2-RRes workpackages-I**). Breeders wish it to be noted that they are concerned as to the value of the traits field trial, because it is being undertaken before the results from the Defra funded desk study on Nitrogen use economy (AR0714) is a desk study by John Folkes at University of Nottingham and assisted by Peter Barraclough and Malcolm Hawksworth at Rothamsted are available. The findings from this desk study are due in November 2004. The breeders also consider the traits being studied (particularly nitrogen use efficiency) are of limited commercial value and are unlikely to be incorporated into their breeding programmes. In response, RRes and the JIC stated that traits such as canopy architecture may be important in understanding resistance to some pathogens and for weed control. In response to the pathology tests, there was some surprise that some resistant diploid accessions had been found. Many breeders expressed concern that a diploid model was being used for these studies, instead preferring work to find suitable candidate loci directly in hexaploid wheat.

AP reported on mutagenesis in hexaploid wheat and the PCR tilling technique (**Document WGIN 2004 – M3 - RRes workpackages II**).see slide presentation). Some concerns noted over sterility issues in the field and the opportunities for cross pollination events occurring that could be resolved by bagging individual ears.

### **3 – Follow up activities involving the Breeders**

One of the reference mapping populations selected for the WGIN core project, is Avalon x Cadenza. The pedigree is available for Avalon – Richard Summers will convert the information available into a dendrogram that can be placed on the WGIN website (**Action item**). The pedigree of Cadenza is more complicated and JWS is to look at the JIC GAIT data and produce the appropriate dendrogram (**Action item**).

It is not feasible for breeders to donate samples of all their F<sub>1</sub> crosses. This should become a more focused activity based around the traits of interest. It was suggested that NP and MH could organise a Traits Workshop in April to discuss these. It would be possible for individual researchers to draw up a list of desired crosses and breeders could then donate any that are available, or even undertake these crosses.

It was decided that the GAIT genotyping data should be made available on the WGIN website. However, the associated pedigree relationships based will await the publication by Mike Gale (JIC)

With respect to IP and WGIN activities, Peter Werner outlined what had been agreed for the OREGIN project. Namely, that no germplasm donated to or generated within OREGIN could be directly commercialised. However, all OREGIN materials could be used freely by researchers and breeders for research and commercial activities. Graham King at HRI is drawing up the draft of the OREGIN MTA in conjunction with Bruno Viegas at Defra. All those at the meeting agreed with this general principle. Neil Paveley is currently drawing up an MTA to cover the use of the Avalon x Cadenza DH mapping population and will liaise with Bruno (**Action item**).

### **4 – Report on Breeders Meeting 9<sup>th</sup> January 2004**

The minutes arising from the breeders meeting were circulated to all (**Document WGIN 2004 – M4- Breeders Meeting Jan 04 minutes**), and Chris Chapman highlighted certain issues and conclusions.

The following key points were noted:-

- The value of WGIN to the UK relies on the breeders exploiting its outputs.
- Breeders wish the focus to be on practical not academic outputs.
- They prefer the use of elite rather than model populations.
- Information should be available with no or minimal IP restrictions.
- They need the development of robust molecular markers not just novel ones.
- The breeders welcome a germplasm screening operation.
- They would prefer research work to be done on commercial material rather than mutant and model populations.
- The focus should be on commercially important traits.
- The breeders do not see the intrinsic value to the diversity screens per se.

- It is expected that research by breeding companies will take place downstream of WGIN work.
- There is concern that the partner institutions must continue to undertake basic pathology research, for example, on the second wheat syndrome rather than purely molecular biology based projects. This is because pests and diseases and measures to control them (insecticides, pesticides etc.) are still a major issue.
- To improve the value of the UK wheat crop, measures must be taken to improve its quality.
- WGIN discussions and dialogues which result in the introduction of new techniques into wheat breeding are welcome.

In response, JWS noted that Defra, expects to influence the direction of WGIN research in addition to the researchers and breeders. JWS also suggested that although some traits may not be of current industrial value, they may be necessary for sustainability, and thus if breeders do not voluntarily introduce them into their material, it may require regulation to require them to incorporate them into commercial varieties. The research must reflect both policy and commercial agendas. Some breeders felt that regulation on traits was highly unlikely to succeed.

It was suggested that at some point there may be a need to propose modification to the work programme and milestones to DEFRA. The possibility was also raised of extending specific projects beyond 5 years. It was also pointed out that it was always the intention that the core WGIN programme was intended to provide underlying resources, with more specific targets addressed by satellite projects or Link projects. However, there is a limit to the number of Links that the plant breeding community can support.

With regard to the use of novel markers and platforms, it is felt that the science must stay up to date with all current developments. However, genes located by current techniques may not be cost effective for many breeders to use.

KHK asked the breeders to clarify the term ‘germplasm bridge’ used in the Minutes of the Breeders Meeting. These are elite cultivars, that are either currently very successful commercially or have only very recently taken off the recommended list. The germplasm bridge cultivars would be used by the WGIN researchers to move traits from the core project into a form accessible for use by all the breeders.

## **5 – Trait Analysis**

Following on from earlier discussions, it was decided that an Annual Trait Meeting is required, with the first one ideally taking place in April. The documents produced at the last Breeders Meeting and a draft document circulated by the University of Nottingham/ADAS (**Document WGIN 2004 – M5- Traits**) will provide a preliminary basis from which traits will be selected for discussion. It was agreed that Mike Holdsworth will organise a traits meeting in April 2004 in discussion with Chris Chapman (**action item**). NP, MH and CC to compare and combine documents and select traits for discussion at this meeting. It was also agreed that this traits meeting will be held at the Syngenta site at Whittlesford, Cambridgeshire. It would be desirable for experts on each trait selected to be identified so that they could be asked

to speak. The breeders also pointed out that August and September were extremely busy months, and therefore all discussions on traits for WGIN should be concluded before the end of July. The sum on monies available for the 2004-2005 field traits trial is £40k.

It was suggested that traits investigated within the WGIN core project may vary from year to year over the next five years, depending on agreed priorities.

#### **6 – Future targets for Pathogen Resistance.**

This item was covered to some extent in the Breeders Meeting Report and will be addressed at the forthcoming WGIN traits meeting.

#### **7 – Further Meetings**

It is agreed that another management meeting should take place in June 2004 – SI to organise – in addition to the above mentioned trait workshop in April. This Management Meeting will take place at JIC, so that visits to the field trials of the germplasm resources can be included.

With regard to the next Stakeholder Meeting, which is planned for November 2004 at Rothamsted, it was decided that efforts should be made to ensure greater participation by end users, and that PS will organise this.

Draft 3: Sam Irving, Kim Hammond-Kosack 12<sup>th</sup> March 2004