

WGIN Management Meeting
January 26th 2005, University of Nottingham
Minutes

Attendees

Peter Shewry, Kim Hammond-Kosack, Steve Smith, Peter Werner, Andy Phillips, Graham Jellis, Phillip Howe, Nick Balam, David Feurhelm, Robbie Waugh, Peter Jack, Simon Clack, Sue Salmon, Dhan Bhandari, Robert Koebner, John Flintham, Thomas Joliffe, John Snape, Mike Holdsworth, Chris Chapman, Donal O'Sullivan, John Foulkes, Mike Field, Jeroen Wilmer

Apologies

Keith Edwards, Bruno Viegas, Richard Jennaway, Chris Tapsell, Sophie Laurie, Tina Barsby

Minutes

Sam Irving, Kim Hammond-Kosack

Progress Reports

Kim Hammond Kosack (Rothamsted Research)

Presentation Available – Title ‘ Exploiting *T. monococcum* L. as a source of novel traits genes and variant alleles’

Questions

Why is this breeding programme containing a tetraploidisation step, why don't you cross straight from the *T. monococcum* to hexaploid bread wheat?

We were concerned about fertility, but if we used *T. monococcum* as the pollen donor and a range of hexaploid wheat genotypes as the female parent, some fertile F₁ embryos can be generated which can subsequently be rescued by tissue culture. We will read up on the literature and see where success has been achieved.

Will there be any disease resistance testing done on the F₁s?

No, we consider these results will be of no real value because the plants will be stressed.

Do we think the Septoria resistance is monogenic in *T. monococcum* ?

We have no information yet on the genetic control of the range of resistance phenotypes we have observed in the mixed isolate infection tests .

Is there Septoria resistance in related species, for example oats and rye?

Subsequent reading of the literature after the meeting revealed that wheat and rye are attacked by *Septoria tritici*, but oats and barley are not.

Andy Phillips (Rothamsted Research)

Presentation Available – Title – ‘TILLING in hexaploid wheat’

Questions

There is some concern the high mutation rate is going to cause other mutation problems.

The backcrossing will prevent this from being expressed in the hexaploid.

Is the 20 ox just an example?

Yes, but it's also pretty slow.

Robert Koebner (John Innes Centre)

Presentation Available – Title – ‘Progress since Nov 2004’

Questions

There is some concern the mutants produced are interesting rather than useful.

We need direction, possibly from lists etc, of what is actually useful.

Would it be better to try and find genes from the phenotype rather than the other way round.?

Not really, by the time you have taken redundancy, combined effects etc into account it would be too hard. Immortalised mutants lines are needed for true breeding anyway. The odds of finding a mutant that outperforms in any known character is very unlikely, but things like recessive resistance may well show up.

In terms of work done in barley, reverse genetics found very few beneficial mutants, except some recessive resistance. Now in the process of backcrossing this into elite germplasm.

NIAB do have a desk study on molecular markers for VCU traits - the community will soon be approached for comments.

John Snape (John Innes Centre)

Presentation Available – Title ‘Avalon x Cadenza’

Questions/comments

The Avalon Cadenza population MTA is now in place, so request seed from JIC if you would like to trial the population

How many loci were found on the map?

We haven't definitely counted, but I would guess at 150-200

How much seed is currently available for each of the 204 DH lines/

About 2kg per line, that will be distributed as 5 or 10 g packets

WGIN Year One Field Trial

Peter Barraclough (Rothamsted Research)

Presentation Available – Title – ‘Rothamsted Variety Trial’

Questions

Do the populations behave as expected in the previously conducted desk study?

In some cases yes, e.g. Avalon and Cadenza, though some don't behave exactly as expected e.g. Beaver. No proper comparison has been done as yet.

How is the nitrogen applied?

Pneumatic

Is it possible that soil N varied greatly?

It's possible, but unlikely the variation was great enough to make a difference.

The “take home” message is that we do have significant differences in both uptake efficiency and utilisation efficiency between these varieties.

Unfortunately, no Beaver (or Mercia) was available for this year's trial (2004-5).

HFN Proposal Update

Peter Jack (RAGT)

Presentation Available

CIMMYT are very positive as to possibilities for cooperation.

Though LINK support is likely, other funding from Defra may prove difficult.

The Greengrains Project

Phil Howe (Syngenta)

Presentation Available – Title – ‘Green Grains’

Questions

Is the group using calibrations produced by HGCA?

The technical meeting is not due to be held until April – Richard Whyman (ADAS) is chairing and will be informed.

Is there an N waste Rescue System in the systems set up?

There is an animal feed facility producing “dark grains” – it makes a loss but you'd have to pay to dispose of that waste anyway.

What is the view of Defra with regard to bioethanol/bioenergy?

They are a thought to be a little sceptical, making it necessary to have a model this complex to show the process.

Has a current energy balance been calculated?

Yes, there is a first modelling exercise. However, it is complicated by many factors and depends how you account for energy flow.

Why is there a drop in protein in Group 3 soft grains anyway?

There is a minimum this goes down to beneath which you just get less seeds. Some varieties may be close to this threshold. Also, the plants are not N stressed, N is not limiting, so this will produce consistently higher yields.

There are organic experiments ongoing in low N conditions.

Is protein in general low in cereals?

Yes, but only compared with legumes, oil seeds etc.

How was the mapping population chosen?

Fairly randomly – it was available from another study.

What the End User Wants

Sue Salmon (CCFRA) and Simon Clack (Smiths Flour Mills)

Presentation Available – Title ‘Increasing liaison with the milling/baking industries’

Questions

Is the flour from Malacca yellow when the husk is removed?

No, it stays even when this is removed.

One problem with modern milling is the rupturing of the cell wall requires a high energy intake, which is not good for meeting energy efficiency requirements, and also leads to very hot flour, which can cause a problem for manufacturers. So ideally something that made this rupture easier would be welcome.

As far as the Group 1 Hereward replacement goes, something less good would be acceptable, but would obviously have a lower premium.

Feedback on the Stakeholders meeting

Sam Irving and Kim Hammond-Kosack

Presentation available- on the collated questionnaire results from the November 2004 Stakeholder meeting.

Any Other Business

Next Management Meeting will be on 6th May 2005 at the John Innes Centre

Stakeholder Meeting 22nd November 2005 at Rothamsted Research

22nd OREGIN Stakeholders at NIAB

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Note

A copy of any of the presentations referred to in these minutes is available by mailing Sam Irving at WGIN@bbsrc.ac.uk