

PCGIN steering/management meeting

NIAB, Huntingdon Road, Cambridge

Wednesday, June 25th, 2008

(10:30 – 15:30)

Draft Minutes

Chair: Noel Ellis

1) Present:

Birds Eye	Chris Goodsall
JIC	Noel Ellis
JIC	Claire Domoney
JIC	Mike Ambrose
NIAB	Jane Thomas (Host)
NIAB	Donal O'Sullivan
Nickerson-Advanta	Keith Fox
PGRO	Barrie Smith
PGRO	Anthony Biddle

2) Apologies:

Birds Eye	M. Buurman
CSL	A. Charlton
Defra	K. Bainbridge
JIC	M. Wade
Nickerson-Advanta	S. Berry

3) Minutes of the previous management meeting

(held at Nickerson-Advanta, Docking, January 18th, 2008).

The minutes were agreed and it was agreed that these could be released openly on the project web site.

4) Matters arising:

- 4.1 The 2006 phenotypic data report has been completed and mounted on the project web site.
- 4.2 The 2007 data have been collated and are available as excel files.
- 4.3 Selfing data in relation to faba beans in the glasshouse is being collated by MA, and these were discussed with DOS in relation to his faba bean lines from ICARDA.
- 4.4 The preliminary discussions on a LINK proposal were discussed later (see 13 below).
- 4.5 The discussions with Michael Abberton regarding lupins were held separately as one meeting at JIC and one at PGRO.

5) Annual report submission & web-site update

- 5.1 The annual report submission was noted and no matters arose from the

content with regard to the submission. A meeting has been arranged for July with Defra to discuss the report and future plans for PCGIN.

- 5.2 The plan to modify the format of the 'closed' part of the web site was approved.
- 5.3 The updates to the website were noted. All presentations made at PCGIN meetings (with one agreed exception) are openly available on the web site, as are the data sheets and excel files associated with the annual reports.

6) Reports from previous plot trials

6.1 JIC

- 6.1.1 MA agreed to send the url link to the 2006 data sets.
- 6.1.2 A preliminary analysis of the 2007 data is available in the annual report.

7) Status of current plot trials

7.1 JIC (MA)

- 7.1.1 Earlier sowing and cold weather had resulted in slow germination and emergence period. This has revealed differences between the lines.
- 7.1.2 Plots are growing well and some just coming out of flowering.
- 7.1.3 Some preliminary observations of disease (downy mildew on peas) and lodging have been made.
- 7.1.4 Differences in flower number per node for *Vicia faba* lines have been noted.
- 7.1.5 The pea nodulation assessment has been completed.
- 7.1.6 The date and time for a visit to the JIC site will be arranged by e-mail.

7.2 NIAB (JT)

- 7.2.1 The lines have shown rapid emergence followed by slow growth and prolonged flowering.
- 7.2.2 The first lines are coming 'out of flower'.
- 7.2.3 Sitona damage has been observed and preliminary observations of disease have been made, but disease pressure is still low.
- 7.2.4 The nodulation study has not yet been made, but the lines look healthy.
- 7.2.5 The bean plants remain upright.

7.3 PGRO (BS)

- 7.3.1 The trial has exhibited extended slow growth and flowering.
- 7.3.2 The first lines are coming 'out of flower'.
- 7.3.3 Downy mildew infection is high (0 – 22% infestation), and appears high on peas in other trials at this site.
- 7.3.4 Mice have damaged some blocks of beans reducing replicate number.
- 7.3.5 The bean plants will need to be staked.

8) Downy mildew & other diseases:

- 8.1 JT commented that an *Ascochyta* test was discussed in the report and that the JI15 source of downy mildew resistance appeared to segregate among the three JI15 x JI1194 RILs in the trial. (L08/10, L 08/11 and L08/12).

- 8.2 Differences in disease reaction among the RILs at NIAB and PGRO suggest that a double checking of the RIL identity by molecular or phenotypic marker analysis should be undertaken. (Flower colour alone is sufficient to distinguish these three lines). **Action MA, JT, BS, NE**
- 8.3 JT had received sufficient seed of each of the JI15 x JI1194 RILs from JIC in order to undertake a downy mildew trial. These 58 RILs included some 'catch-up' lines for which marker density needs to be checked. **Action NE**
- 8.4 JT requested leaf samples from downy mildew infected plants from multiple locations to be part of a race structure assessment. **Action MA, JT, BS**
- 8.5 AB reported on a root disease screen for the 2007 planting and commented that the results were consistent with the 2006 assessment. There was some variability available for Phoma and Fusarium, but limited variation for Aphanomyces, although JI2947 appeared to show a little less susceptibility.
- 8.6 There was a little discussion of the bean scoring sheet and the desirability of conformity across sites was agreed. Coordination will be conducted by e-mail. **Action MA, JT, BS**

9) Combining & vining pea RILs; genetic map & marker update

NE commented on this, essentially as in the report, but there was some discussion of the extended implication for *Vicia faba* genetics. The effectiveness of the vining pea parental crosses has been confirmed.

10) Seed quality crosses and their analysis

- 10.1 CD reported that the L-3 backcross lines and associated field trials were underway. The genetic analysis of 'staygreen' gene in the marrowfat crosses is proving difficult possibly because of co-ancestry of the respective alleles.
- 10.2 A plan to follow alleles of other genes in the chlorophyll degradation pathway was described by CD.
- 10.3 Alternative assays for chlorophyll content were described, as trialled on some PGRO seed material.

11) TILLING mutants

CD and NE informed the group about the current lines being analysed.

12) GL-TTP update

NE reported on the current status of the GL-TTP, its relationship to PCGIN and AEP and drew attention to the second GL-TTP workshop to be held in Novi Sad in November.

13) LINK proposal & taste/flavour metabolite genetics

CD described the current state of a LINK project proposal and reported on positive discussions with Peter Street at Defra. The plan to submit a concept note was agreed.

14) Vicia issues

- 14.1 DOS presented his plans for a *Vicia faba* SNP chip and the ERA-PG proposal concerning self fertility.

14.2 The necessity for the development of *Vicia faba* resources as a prerequisite to any *Vicia faba* genetic project was discussed.

15) PCGIN plans: 2008 & beyond

A general discussion of the way in which PCGIN-generated resources could be exploited for the genetics of agriculturally sustainable crops ensued. It was noted that while the pulse crop area has been declining in the UK and throughout Europe, current statistics and predictions point to a significant increase in demand for pulse crops. The requirement for a low energy demand break crop for cereals and OSR in the longer term seems obvious, so the need to develop genetic resources that can re-initiate breeding when this becomes economically viable seems a justifiable public policy objective. The key features which were agreed to be important were:

- 1) to initiate the QTL analyses of the agronomic and seed quality traits that will segregate in the PCGIN mapping populations and to undertake the relevant marker work.
- 2) to develop genetic resources in *Vicia faba*.
- 3) to continue small scale plot trials with lupins.

16) Next stakeholder meeting: date, venue and topic

It was agreed to fix this date in the late autumn by agreement with Defra, taking account of the likely availability of stakeholders. JIC was considered a good choice of venue, and the topic should be the description of the output from and implications of the PCGIN project.

17) AOB

17.1 CG informed the group of the cessation of Birds Eye activity at Colworth. The pea breeding and associated materials will be sold and future sensory support for the company out-sourced.

17.2 NE thanked JT for hosting the meeting.

The meeting concluded with a wrap-up session after a trip to the NIAB PCGIN plot trials.