

Minutes of 2nd PCGIN Management Meeting NIAB, Cambridge, 27/06/06

Attending:

Noel Ellis, Claire Domoney, Mike Ambrose, Carol Moreau, Jane Thomas, Donal O'Sullivan, Haidee Philpott, Geoffrey Gent, Anthony Biddle, Barrie Smith, Adrian Charlton, Keith Fox

Apologies for absence:

Catherine Chinoy (JIC), Frankie Bligh (Unilever), Simon Kightley (NIAB), Bruno Viegas (who has moved to a new post within Defra).

Chair:

Keith Fox (Advanta)

Noel Ellis welcomed everyone to the meeting and introduced Carol Moreau, a new appointment on the PCGIN project at JIC.

Communications and web site issues

Web site: the registration process, as outlined in the first PCGIN annual report, was acceptable to Defra. [The report, approved by Defra, will shortly be available on the open area of the web-site (<http://www.pcgin.org/projectinfo.htm>). Registration was required to enable the project to collect details of pulse crop interests in the UK. About 50 people had registered so far. The restricted access areas contained some project specific information of a preliminary nature; most of this would be available later on the open area.

Related workshops: Noel Ellis would attend the Pulse Ascochyta workshop in July, and Jane Thomas would be attending the Faba Bean workshop in October.

The need for outputs from the project to be publicised as much as possible was emphasised. The PGRO journal is an important outlet, and regular articles were needed – at least one per year, following that of the Winter 2005 edition. The Grain Legumes magazine is also being used, as well as the UK farming press, where the PCGIN contribution to the 2006 PGRO members' day had been covered. Feedback from the industry is vital – there had already been good contacts through a number of meetings involving BEPA and a number of issues, including the requirement for deep green colour stability in peas, had been identified as areas for seed quality investigations.

Phenotyping and *Vicia faba*

Mike Ambrose described the selection of 18 *Pisum* lines for detailed phenotyping from an original 48 examined at JIC. Protocols for phenotyping had been devised and were in use at JIC, NIAB and PGRO. Two additional measurements were agreed for 2006 – canopy height at maturity, and height of first pod.

26 *Vicia faba* lines are being examined in the glasshouse at JIC, plus a Portuguese land race. INRA was identified as a potential further source of exotic *Vicia* material, including Chinese lines, and links with INRA have been established. An Australian variety, Fiesta, was produced for drought tolerance, and would be of interest for investigation in the UK. Seed type (size, colour, tannin content), drought sensitivity and bruchid beetle damage were major issues for UK faba beans.

There is a need to understand the variability available in faba bean material suitable for the UK. Existing performance and phenotypic databases could be explored in a similar way to the pea work which had been carried out, by agreement with breeders/agents. However, for practical work, the low level of autofertility in beans is a major problem in applying the principles used for *Pisum* to *Vicia*. 40% selfing was considered a high level, and some types of faba bean would not achieve this.

It was agreed that faba bean work would be extended by including material for phenotyping at the three sites in 2007.

Some *Pisum* material may be removed from the phenotyping work at the three sites in 2007, on the basis of poor performance in 2006. This will make space for phenotypic evaluation of faba lines and other pea lines, including the parents to be selected for the development of the RILs' within objective 3. Protocols would then be revised for the 2007 sowing and extended to cover faba bean.

The meeting agreed that the move to increase faba bean work in the PCGIN was appropriate, given the level of interest from the industry.

Performance data integration and selection of lines

Performance data for peas had been examined with PCO analysis in 3 year datasets, and an initial set of 7 characters.

Genotypic marker work at JIC had progressed with 46 varieties out of 100 originally identified as differential for selected characters from the PCO analysis. Available markers described about 50% of the variability.

Further work was needed to define the best approach for integrating the phenotypic and genotypic datasets, and to identify parents for creating RILs. It was agreed that a sub-committee (Noel Ellis, Haidee Philpott, Keith Fox and Carol Moreau) would meet by mid-July to progress this *^{see 1 below}).

Genetic resources and maps

Mutation screening – the network project could identify resources for this, and stakeholders should be made aware of this aspect. Fast neutron mutants are being screened for interesting characters at JIC, and again stakeholders will be informed of novel variants.

Gene-specific primer sequence information should be made available on the web site, but more work was needed on this aspect.

Genetics of seed quality traits

Claire Domoney outlined the links being established with animal nutritionists.

The TILLING platform within GLIP was being used to isolate novel mutations in pea proteins that are relevant to animal feed value.

Metabolite profiling was being discussed for dissecting quality traits in vining and marrowfat peas.

Pulse crop quality had been discussed as part of the programme at a recent HGCA meeting and at BEPA meetings. Bleaching in peas (marrowfats), and bruchid beetle damage in beans were identified as major issues. This year's spring bean variety trials would be examined for bruchid damage to see whether or not there was any influence of genotype; Anthony Biddle agreed to collate and pass on to JIC any information that would be relevant to the choice of variant *Vicia* lines as parents for crosses; contacts with UNIP, France, had been established where field screens are being performed for *Vicia* in 2006.

Industrial links and GLIP

Potential industrial uses of pulse crops were discussed (biofuels, biofilms) and also the potential for emerging areas for legume research (e.g. tree legume species)

The GLIP programme contained about a further 9 months of active work before the final report phase. The future of the Technology Transfer Platform after the end of GLIP was still to be determined.

Stakeholder meetings

Dates for the next stakeholder meeting would be circulated, with likely options being 1st or 4th week in September ** see 2 below .

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Metabolite profiling – any information found on small molecules relevant to the profiling in pea leaves and seeds should be sent to Adrian Charlton.

The meeting closed at 15.30.

The meeting included a visit to the NIAB PCGIN pea plots.

*¹ A sub-committee met at JIC on the 11th July.

**² September 29th at PGRO has been agreed for the next stakeholders' meeting.