PCGIN meeting to view JIC plots of exotic germplasm, 1st July 2005

Attendees:

Mike Ambrose	JIC
Claire Domoney	JIC
Barrie Smith	PGRO
Jane Thomas	NIAB
Simon Kightley	NIAB
Frances Bligh	UNILEVER

Background

The meeting was organised as a follow-up to the meeting of PCGIN core participants held on the 20th June to:

a) view the 47 microplots of 'exotic' germplasm being grown at JIC for Objective 2 'Phenotyping' and
b) start detailed discussions for the three-site trial of 20 lines to begin in 2006.

Meeting

The morning was spent visiting the material growing under the pea cage. The opportunity was taken to tour the demonstrations of wide diversity in peas, including lines comprising the phylogenetic tree based on AFLP marker analysis, and a second demonstration of pea mutant reference lines from the JIC collection. Moving to the PCGIN microplots, the discussion focused on practicalities of growing 'exotic' material and a walk around to observe the range of canopy types, diseases and lodging that is now in evidence.

The afternoon discussion focused on the points that emerged from the morning tour and on collating a first draft of the character descriptor states and scales for the proposed recording for the phenotype of the material.

Key points:

- Our efforts should be geared to produce the best plots possible for evaluation in order to record the potential of the lines. Responses to diseases and pests would be assessed as a separate exercise. The material should therefore be kept as free as possible from pests and diseases.

- Plots would require netting to prevent bird damage (pigeons, crows, rooks) and appropriate measures taken to keep out rabbits and hares.

- Pre- and post-emergence herbicides should be used. There is no difference in the sensitivity of the exotic material to herbicides, compared with modern commercial material.

- Small-seeded exotic germplasm is in some cases slower to establish. Seed treatment against weevil, damping off and downy mildew was considered essential to ensure good establishment.

Plot size and layout

Issues of plot size, layout, design and sowing density were discussed. Preliminary points were noted, prior to email discussion of more detailed plans to be ready in time for the end of the year.

Phenotypic characterisation and data recording on plots

Discussions covered the following topics:

- Vigour assessment
- Plant counts - (a) ¼ quadrat, (b) total count, (c) 2 row counts
- Emergence date - (a) first signs, (b) 50% emergence
- Cold tolerance/damage
- Early basal branching
- Flowering - (a) 50% in flower, (b) full flower and (c) out of flower
- Height of canopy (centre) at full flowering.
- Lodging - separate scores for (a) sagging at base, (b) leaning, (c) creeping habit.
- Date of maturity (when ready to harvest)
- Final assessment
- Comments and overall assessment

Data recording at maturity:
The performance of the lines will be assessed by analysing 5 individual plants from the middle and edge of each plot. The following measurements will be recorded:

Straw length
Number of branches
Components of yield
  - No. of vegetative nodes (including scale nodes)
  - No. of flowering nodes
  - Pods per plant
  - Seeds per plant

Branches (score separately)
  - No. of pods
  - No. of seeds

Plant material will be oven dried (90^0C)
  - Total seed dry weight
  - Weight of total remaining haulm and pods

To ensure uniformity of scoring at all sites, a standard EXCEL proforma scoring sheet (together with notes) will be prepared from notes of the detailed discussion during the meeting. This will be developed by circulation of an email document and is an ongoing discussion. Visits between sites will be arranged to compare plant behaviour.

Vicia faba
It was agreed that Mike Ambrose would identify a limited number of 'exotic' lines for growing out for 'observation' on the three sites.

Timetable
Plans for plot layout, design and sowing density to be in place for the end of October.
Seeds will be dispatched to all sites by the end of the year.
Seed requirements for separate disease tests would be notified to Mike Ambrose.

Visits to JIC PCGIN plots subsequent to the meeting
Geoffrey Gent PGRO 15th July.
Stephen Smith Cebeco 22nd July.

MJA