EAST MALLING ROOTSTOCK CLUB

Minutes of the

POLICY GROUP MEETING

held on Friday 25 September 2015 at 09:00, in the Shell meeting room, East Malling Research

Present:

Dr Bruno Essner    INN (PDV), France
Ms Felicidad Fernández   EMR, UK
Mr Ian Hardie    EMR, UK    (Part of meeting only)
Ms Rachel Lockley   AHDB Horticulture, UK
Mr Allesio Martinelli   INN (CIV), Italy
Mr Andrew Tinsley   AHDB Horticulture, UK
Mr Adam Whitehouse   EMR, UK
Professor Xiangming Xu   EMR, UK    (Chairman)
Mrs Angela Chapple   EMR, UK    (Minutes)

1. Welcome

The Chairman welcomed Club members to the meeting of the Policy Group and thanked them for attending.

2. New contract

Mr Hardie confirmed that a new clause had been added to the contract; which would be repeated at the end of the 5-year period. It was noted that Mr Fulton, legal consultant at AHDB, was currently on leave and would review the latest version of the contract on his return, after which the contract would be circulated to Club members.

Action: Mr Hardie - final version of the contract to be circulated to all members following review by AHDB’s legal consultant

(Mr Hardie left the meeting.)

3. Review of action points from previous meeting

The action points/minutes from the meeting held on 28 January 2015 had been circulated to the consortium previously and were agreed and signed by the Chairman. The following actions were considered:

(a) EMRC web-page
Ms Fernández confirmed that the EMRC web-page had been constructed, and the address and password sent to Club members by email. All members are able to access the web-page to view annual reports, results and updates and feedback would be welcomed. In response to a question from Mr Martinelli, Ms Fernández confirmed that the INN reports could be posted for the benefit of Club members.

**Action:** Mr Martinelli to send INN reports for the last 2 years to Ms Fernández for uploading to the EMRC web-page; all Club members to provide feedback and suggestions on the web-page to Ms Fernández

(b) **EMH**

Mr Martinelli confirmed that the results of the trial affected by herbicide sprays from his neighbour would be passed on to members of the Club.

In discussion, Mr Martinelli reported a variation in tree size between orchards. Ms Fernández suggested that it would be useful to obtain soil samples from the orchards where EMH was growing well, as there was a possibility that unevenness could be soil related.

Mr Martinelli reported a general trend for an increased demand for more vigorous rootstocks.

(c) **Update on breeding activities**

Mr Essner confirmed that he had contacted NCGR Corvallis to request material of ‘Farmingdale’, which would be planted over the winter.

Liners of AR295-6 had been supplied by Mr Essner and grafted controls were planted in new seedling trial plots last winter.

Ms Fernández reported that she had made very limited progress with finding a test for detecting pear decline. In discussion, Mr Tinsley said that work was done at East Malling in the past, but he was not aware that pear decline was a problem now. He suggested speaking to pear growers to ascertain the level of the problem. Ms Fernández advised that susceptibility can remain unknown as symptoms can take up to 5 years to manifest, and experiments in the glasshouse were prohibitively expensive. In response to a question from Professor Xu, Ms Fernández advised that current molecular tools did not detect pear decline, but added that she had not given up on the problem. Mr Martinelli advised that Italy was facing a real problem with pear decline; he suggested that it may be possible to arrange for testing in Italy. In discussion, Ms Fernández estimated that 5-10 replicates of 5-10 genotypes (e.g. maximum 100 trees) would be sufficient. A further option, suggested by Mr Essner, could be to find a UK orchard infected with the disease and plant a row. It was noted that the current legal status of the disease would permit this; however, it would not be permitted to bring in infected material into the UK.

**Action:** Ms Fernández to contact tree fruit groups, with assistance from Mr Tinsley and Ms Lockley, to locate a UK orchard with pear decline which may be used to test for resistance

(d) **EMR/HDC trials**

Minimal pruning had been carried out on ‘old’ trials, while the ‘new’ pear trials were cut back to 1 m. Further corrective pruning will be carried on the older trees. In discussion, Mr Whitehouse advised that Mr John Easton, who had carried out the pruning at EMR, was setting up a documented policy on pruning. A video of Mr Easton pruning will be made as a visual record.
It was noted that the EMRC database would be updated with details of the Canadian SJP84 series; this is information will be provided on the EMRC web-page.

**Action:** Ms Fernández and Mr Whitehouse to update the database with Canadian rootstocks and make available on the EMRC web-page as a pdf document

Regarding sources of controls for the new pear trial, it was agreed to start looking for sources of rootstocks from Europe. In discussion, it was agreed to try to incorporate quince ‘Elina’. Mr Essner stated that increased cold tolerance was a major strong point. Materials would be sent in winter when the wood was dormant.

**Action:** Ms Fernández and Mr Whitehouse to add design of experiment to the agenda for the January 2016 meeting

4. **EMR update on breeding progress**

The EMRC annual report for 2014-15 had been circulated. Ms Fernández presented an update, summarising progress on the breeding programme at EMR.

In reply to a question from Mr Martinelli, Ms Fernández explained that better financial reporting had identified very high weeding costs, so Mypex (black fabric ground covering) was used as a cheaper option; it was also hoped that this would improve rooting in the first year. Mr Essner asked about water management issues and Ms Fernández advised that water from the irrigation lines above trickled through the fabric. If successful, it is envisaged that this system would be continued in future as a more cost-effective solution to weeding.

Ms Fernández advised that columnar trees had been double-budded this year; trees which had not taken well may be removed as deselection is commenced, to ensure a good population for recording.

5. **Pest and disease resistance screening – progress in 2015**

Ms Fernández presented an overview of the updated results of P&D screening to September 2015, including results of fireblight testing on four selections sent to Dr Markus Kellerhals’ team in Wadenswil, Switzerland, which had been circulated.

(a) **Fireblight**

Fireblight results were as expected, with a clear result from inoculation for CG-935(7); the two others were fairly resistant (better than M9). An aggregate of results overall had been prepared; it was agreed that it was not necessary to retest as sources were reliable, with clear data. A further 3/4 different sets would be tested next year and Enterprise and one other used for control, to save on costs.

Professor Xu asked if high susceptibility to fireblight would kill commercial viability. Mr Essner advised that some plants would be lost, but not all. There were different criteria in different parts of the world, e.g. fireblight is not a big problem for UK, but it is in USA. It was therefore agreed to continue with fireblight protocols.

It was agreed to ask the Swiss team for clarification of the summary scores “fairly” and “moderately”, as these terms were not clearly differentiated.

**Action:** Ms Fernández to reword classification scores and include a simplified table in next annual report
(b) **Woolly apple aphid**

Ms Fernández advised that next year fresh M25 trees would be used, to obtain clearer results. It was noted that scoring was not yet finished as populations were currently still active. EMR were also working on extraction tests using a new robot to achieve better results. Existing DNA from all pipeline material would be tested for verification during the coming winter to try to obtain better markers.

(c) **Phytophthora cactorum**

Ms Fernández presented the results; she explained that softwood cuttings were used. These were not considered ideal but had taken satisfactorily. About 12 cuttings per tray were used and most had initiated roots and would be moved to the glasshouse with additional light to prevent dormancy. Next year seed germination may be taken as well as softwood cuttings. In discussion, Mr Essner suggested that young liners should be used to see how they behaved. It was agreed to take this suggestion – i.e. softwood cuttings, plus seeds, plus liners – next year, and to try to do as much P&D selection as possible to ensure a reliable test. Vigour will be evaluated for the first 3 years and then trees would be allowed to fruit.

(d) **Apple replant disease (ARDERI)**

Professor Xu gave a brief overview of the BBSRC-funded ARDERI project which started in April 2015. Ms Fernández advised that one workpackage was about field trials – e.g. M9, MM106 and cider orchards – and different reported susceptibilities. Trees have been grafted on a range of genotypes, including AR295-6, and will be planted on two replant sites in October. Trials will be sampled over 2 years, to provide 36 months of data, which should provide conclusive results.

A further workpackage involves inoculating specific species in a knock-out experiment. This had not worked well in rhizotrons as plants were too stressed in the summer; next year that section of the trial will be repeated using pots. Ms Fernández will keep Club members advised of progress in this project.

The EMRC replant experiment planned to set up tree replicates of each of 22 genotypes budded with columnar scion in February 2015 on virgin soil (and old tennis court), untreated replant soil and replant soil treated with chloropicrin. Unfortunately, grafting take and survival were not very successful and for many of the EM selections there were not enough trees. It had been decided to save the virgin land as this is very rare and set up a smaller test. Phenotyping for symptoms and soil sampling will be carried out in collaboration with the ARDERI project.

(e) **AHDB – evaluation of rootstocks to canker**

A new project has been agreed by AHDB, to fund evaluation of rootstocks to canker. A potted tree trial will be conducted at EMR in the first year on a panel of rootstocks to determine the relative susceptibility to Nectria canker following controlled inoculations. It is envisaged that this project will pull different strains of research together and is led by Dr Robert Saville at EMR. Dr Saville is happy to introduce any material (including advanced selections) and Club members are invited to send liners (about 100). It was proposed to include AR295-6 and other advanced selections from the programme. Ms Fernández will calculate the number the project could test with Dr Saville and confirm to Mr Essner.
6. Development of proposal for underpinning research on rooting

Ms Fernández outlined a new proposal that EMR molecular physiologist, Dr Gerard Bishop, has submitted to BBSRC underpinning research on rooting. The proposal aims to explore the basic understanding of rooting in apple and pear rootstocks, to identify good markers that can be used in future programmes. The proposal contains five workpackages and involves three key people at EMR – Dr Bishop, Ms Fernández and Dr Nicola Harrison – requesting ~£1M of BBSRC support over 4 years. Ms Fernández the explained each of the workpackages in detail. Initial peer reviews have been either “excellent” or “very good”, which is encouraging for an industrial partnership award. Ms Fernández described the subject as borderline and complex for BBSRC, but it is what the industry needs, which goes against the grain of normal BBSRC funding for basic research. She explained that the project made no difference to the Club’s breeding programme, but would provide additional underpinning science.

7. Any other business

New Quince trial - Mr Essner advised that he would confirm in writing, and stating details, that PDV have started a new trial which includes 14 rootstocks of Quince from EMR. He said that interest in Quince rootstock continues to be quite strong. He will keep the Club members advised.

Action: Mr Essner to send written details of Quince trial to Ms Fernández, for information

AR295-6 – Ms Fernández advised that an agenda item for one of the meetings in 2016 should include data for the preparation of a detailed plan for the application for protection of IP, including US plant patent.

Action: Ms Fernández to include a plan for the application for IP protection in the agenda for one of 2016 meetings

8. Date of next meeting

It was suggested that the date of the next meeting would be Wednesday 27 January, commencing at 09:00, at East Malling.

Action: Mrs Chapple to formally confirm date of next meeting by email

The meeting closed at 12:25 p.m.