

University of Bristol  
LONG ASHTON RESEARCH STATION  
Director: Professor J. M. Hirst, DSC, PhD, FRS

ARC CE USERS GROUP MEETING

Tuesday 2 November, 1982

11.00 to 15.15 h

PROGRAMME

- 10.30 - 11.00.a.m.      Coffee - In the Common Room  
11.00.                      Director's Welcome  
11.05.                      Discussion: Chairman: Dr Chester G. Guttridge

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AGENDA

1. Minutes of meeting at GCRI 1st October, 1981, and Matters Arising
2. Management, staffing, allocation, running costs, project costings
3. ARC Headquarters matters and policy
4. Maintenance, servicing, spares
5. New CE equipment, manufacturer's prototypes
6. Microprocessor control
7. Instruments and sensors
8. Lamps and lighting, future availability of reflectolite lamps
9. Disposal of lamps
10. Phytotoxicity
11. Management of, and problems with growing plants in CE
12. Next meeting
13. Any other business.

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- 12.45.p.m.      Lunch  
13.40.              Return to Common Room for Introductory Talks on LARS CE  
14.00              Visit CE facilities  
15.15.              Tea in Common Room.

Minutes of the 1982 ARC CE Users Group Meeting held on 7th November, 1982 at Long Ashton Research Station.

The minutes of the 1981 meeting were approved; there were no matters arising.

1) Management, staffing, allocation running costs, project costings and ARC policy.

There was detailed discussion on these points, the salient features being:

Letcombe Laboratory (LL) and Glasshouse Crops Research Institute (GCRI) described their weekend arrangements. At LL a science graded officer (above HSO) is responsible for checking cabinets and taking decisions on calling in technical staff. The officer is paid a 'Long Hours Gratuity'. At GCRI the weekend monitoring is by technically graded staff who are paid travelling expenses and overtime.

A number of institutes are experimenting with closing down some of their facilities during the months of peak rate maximum demand. Other stations economised by phasing the lighting periods to avoid peak demand. Hardwick, (National Vegetable Research Station - NVRS) warned that electricity boards did not always read maximum demand meters at the same time each month, therefore care should be exercised in determining the 'close down' period. Weed Research Organisation (TOO), Long Ashton Research Station (LARS) and LL reported that they divided the cost of the CE facilities between the users for project costing purposes.

Moorby, (Agricultural Research Council - ARC HQ) commented on standardising the purchase of equipment and spares across the service, and pointed out this meant loss of choice. Institutes generally wished to maintain some autonomy over the choice of equipment. However, the ARC now has to justify in detail, to the Treasury, the purchase of foreign equipment. Grimshaw, (ARC HQ) said that advice was available

from ARC HQ Building and Supplies Branch and the National Institute for Agricultural Engineering, for institutes who wished to purchase or set up CE facilities. Further to this, Moorby said that ARC was in the process of accumulating data on the various types of cabinets, growth rooms and ancillary equipment that was available. All future purchases by Institutes would be closely monitored by the ARC Instrument Group and this would require users to provide the Group with detailed performance specifications.

2) Maintenance

There was a brief discussion about bulk purchasing of fluorescent tubes through a consortium arrangement but as suppliers usually offer a 25-30% discount anyway there was no advantage to be gained.

GCRI, LARS and WRO were organising a preventative maintenance programme and building up stocks of spares but it was too early to evaluate the efficacy of such schemes.

3) Report on new CE equipment, manufacturers prototypes, lamps and lighting, instruments and sensors.

Sandwell (MAFF, Harpenden Labs) told the meeting that they were replacing their old electromechanical timers with electronic programmable times which they built themselves from Radio Spares components costing £60. Butler (GCRI) has developed a new combined monitoring head with a 6 volt aspirating fan running at 3 volts to extend its life. Thorne (Rothamsted Experimental Station - RES) said the specifications were now available for the RES rooms.

The merits and demerits of various types of lamps and lighting systems were discussed. Bembridge (Sutton Bonington - SB) said they had found metal halide "Colorac" lamps to be satisfactory in their new Fisons cabinets. However Heathcote (SB) reported that these lamps can vary up to 30% in output. They were low in far-red

and required filtered tungsten-halogen lamps to boost them. Aldous (John Innes Institute - JII) reported on a mercury-halogen power cell discharge lamp made by Wotan which emitted a spectral distribution close to daylight. There was a range of these lamps providing 250, 400 or 1000 watt output. Harvey (JII) said they were comparing the performance of the 400 watt Wotan lamps with sodium lamps. The former produced 600 •E just below the lights and 400 •E at bench level, with the sodium lamps the plants became shade adapted.

Bembridge (SB) said that since Phillips had stopped making "Reflectolite" tubes, Thorn had agreed to manufacture a similar product but only on a batch basis.

Simmonds (WRO) reported that Sylvania ES100 1" tubes were giving satisfactory results in their Saxcil cabinets, lasting up to 18 months and costing £1-88 each (5 ft). The only problem was a 4 month delivery time.

Walter (LL) reported that their Fisons cabinets were now performing satisfactorily. Moorby (ARC HQ) told the meeting that Fisons were installing new growth rooms at Loughborough and if their performance specification was realised they could be very promising.

Hardwick (NVRS) said that an instrument package (designated NCR 101) for checking out equipment was being made available from the USA by Ted Tibbits.

Randall (GCRI) told of a humidity sensor, manufactured by Phillips which was giving encouraging results and cost only £1.50.

Moorby (ARC HQ) said that a sub-group of RAPAC was looking into new work on sensors and their development.

#### 4) Safety

The question of the safe disposal of mercury lamps was raised by Heathcote (SB). Advice should be sought from the appropriate Local Authority, Graham Powell (Safety Officer, ARC HQ) or the Health and Safety Executive in cases of concern.

5) Phytotoxicity

Hardwick (NVRS) reported that Fisons were investigating phytotoxic effects which had occurred in Sweden with native varieties of spring sown Oil Seed Rape. These problems had not arisen in winter sown varieties. Guttridge (LARS) said that LARS had found that some cabinets grew better brassicas than others, but the problem disappeared some 3 months later. He went on to say that they had tested many substances under bell jars in the glasshouse and found that "EMCEL", fillers with an acetic acid base, and a cardboard spool on which wire was wound were phytotoxic. Dow-Corning 738 RTV silicone adhesive was not toxic and could be used in contact with plants. No toxic plastics were found in the LARS tests. Aircraft quality cable was used in the new LARS rooms. Baker (LARS) said the cause of phytotoxicity was usually low molecular weight volatiles and Caseley (WRO) said that plastic pipes often caused problems so they now used food or medical grade material.

6) Growing plants in CE

Caseley (WRO) emphasised the problems of obtaining consistent watering particularly in chemically stressed plants. Also problems occur with over-watering small pots where 150% of field-capacity often occurs when capillary matting is used.

7) Next meeting

It was agreed that the 1983 meeting will be held at Welsh Plant Breeding Station and John Innes Institute extended an invitation for the 1984 meeting.

8) Any other business

Simmonds (WRO) informed the meeting of a Conference on Environmental Weed Control and Crop Growth and for anyone acquiring information on new monitoring devices being developed to please let him know.

**LIST OF PARTICIPANTS  
ARC CE USERS GROUP MEETING 1982  
AT THE LONG ASHTON RESEARCH STATION, UNIVERSITY OF BRISTOL**

Dr R. Hardwick Dr C. Hole Dr J. Brewster Mr R. Bolton	NVRS Wellesbourne, Warwick CV35 9EF
K. R. Bambridge L. Heathcote	University of Nottingham, Sutton Bonington, Loughborough, Leics.
Dr E. I. Newman	University of Bristol, Department of Botany, Bristol
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