



Cocoa Quarantine Project

Department of Horticulture
School of Plant Sciences
University of Reading

181 AUG 1989

Newsletter 2

July 1989

Introduction

Since our last newsletter, the size of the cocoa collection at Reading has greatly increased to 147 clones.

The rapid increase in the size of the collection has led to a problem of space to house it and more importantly, to carry out quarantine procedures. However, this problem has been recently overcome by the Biscuit, Cake, Chocolate and Confectionery Alliance who have provided funds to build a larger facility to house the work.

The New Quarantine House

The new facility consists of a twin span polythene clad tunnel with a total floor area of 300m². The cladding material also includes a skin of a newly developed 'thermofilm' polythene which has excellent heat retention properties. A second inner skin provides a double glazing system, the air space between which is inflated to provide additional insulation. This feature should help to keep our heating costs down. The structure has now been built and services are presently being installed. We hope to transfer the nutrient control system from the older facilities shortly and to have the new facility fully operational by the end of July.

Quarantine Procedure

In this newsletter we thought it useful to include a brief description of the quarantine procedures that we are presently adopting at Reading.

On obtaining suitable budwood the sequence of quarantine procedures we adopt is as follows:

Material is first budded onto approximately 3 month old cocoa seedlings of the variety Amelonado. We have adopted a patch bud method of budding which is widely used for cocoa propagation. Here a small rectangular piece of budwood containing a dormant bud is grafted on to a seedling where an approximately equivalent sized piece has been removed below the cotyledonary node. This is then secured with grafting tape and left for approximately 14 days. After this the grafting tape is removed. At this stage it is usually clear which grafts have formed a good union. Providing sufficient material is available this is split into two groups. The first group is retained for quarantine procedures. Here transmission of virus from the bud patch to the mother plant is checked by regular observations over a period of approximately 18 months. The other group is used for propagation and for these, the shoot of the mother plant is removed. The latter procedure may surprise many who are used to a gradual cutting and bending of the

shoot to encourage the development of the bud with the shoot only finally removed once the bud is growing out vigorously. However, immediate removal of the shoot appears to work effectively, at least under Reading conditions, and the bud appears to grow out rapidly. As well as checking for virus transmission all the material is checked regularly for pests and disease problems. Since the majority of the material in quarantine is of South American origin, the main potential disease threat comes from Witches Broom disease. Any material suspected of being infected (either with virus or fungus) is immediately destroyed by incinerating the affected plants.

Where we have experienced difficulty in grafting material, priority is given to propagating the material so that quarantine procedures cannot begin until the propagated material can itself be a source of budwood so that graft transmission to Amelonado stocks can be tested. This normally takes 8-10 months.

Availability of budwood

Since some clonal material has now passed through quarantine and is now available for distribution, we would encourage groups associated with the Cocoa Quarantine Project to contact us via Mr. E. T. Beauchamp, Biscuit, Cake, Chocolate and Confectionery Alliance, 11 Green Street, London W1Y 3RF so that shipment arrangements can be made. Budwood is valuable and we strongly advise shipment via personal couriers who can be responsible for the material throughout its journey. If you have personnel travelling to your location from the United Kingdom at any stage, this is the ideal means of moving the material. Our cocoa will continue to grow actively until approximately the end of October and so shipment prior to that date would be preferred. Carriage costs will need to be met by those receiving budwood.

Open Day

We hope, in the near future, to arrange an open day for the quarantine facilities. The date for this has yet to be arranged and we will send details in due course.

If you need to contact us, our full address is: Cocoa Quarantine Project, Dept. Horticulture, University of Reading, Plant Science Laboratories, Whiteknights, P.O. Box 221, Reading RG6 2AS. Phone numbers: (Paul Hadley) 0734 318074; (Teresa Lee) 0734 883032. Fax: 0734 750630

Paul Hadley.
(Project Leader)

List of clones held at Reading University, June 1989.

Population	Numbers	(An asterisk denotes clones from original Kew Collection)
A	196	
AMAZ	3-2, 5-2, 6, 6-3, 10-1, 10-3, 12, 12-4, 15, *15-15	
BE	3*, 10*, 2	
CC	11*, 38*	
EET	272*	
EQX	0, 69, 78, 3161, 3310-3, 3348-44, 3348-52, 3360-3 3370-5, J5, Z, 3308-1	
ICS	16, 27, 43, 47, 48, 100	
IMC	9*, 11*, 14*, 20*, 54*, 61*, 67*, 77*, 78*, 83*, 96*	
LAFI	7*	
LCT EEN	1C*, 28-S1, 46*, 85, 127, 162-1010, 37A, 37F, 37G, 158G, 163A, 163D, 241 on 163B	
MA	12	
MAN	15-2, 15-60	
MO	81*	
MORORONGO*		
MT	1	
MXC	67	
NA	33*, 682, 776, 824	
NAPO	2	
P-4-A*, P-4-B*, P-7-B*, P-16-A*, P-19-A*, P-19-B*, P-21-A*		
PA	4*, 7, 18*, 20*, 51*, 56*, 70*, 88*, 107*, 137*, 179*, 300*	
PUCALA	1*	
RB	29. 33-3*, 39, 41, 46, 47	
SC	1*, 3*, 4*, 9*, 10*	
SCA	9, 19*	
SIAL	93*, 339*	

SK	5*
SPEC	54-1*, 160-9*
TJ	1*
UF	11*, 221*, 667*, 676*, 705*
Y	44*
10P	

Clone collection from Montpellier, France.

123C, 125C, 128C, 133C, 144C, 154C, 158C, 171C, 177C, 221C, 252C, 259C

125H, 136H, 147H, 166H, 168H, 179H, 183H, 207H, 221H, 235H, 239H, 247H,
249H, 290H. 296H, 341H