

Visit to Uganda regarding Inputs by NRI on R8273, ZB0342

Keith Tomlins, NRI (1 April 2004)



The terms of reference for the visit were:

The Consultant input will be in the area of storage, enterprise development and maximising incomes.

Specifically the following tasks will be undertaken:

- i) Visit sites where storage structures have already been constructed, in order to identify gaps in fresh SP storage e.g. control of sprouting and microbial deterioration, and suggest appropriate corrective measures so as to overcome the constraints and improve the production of sweetpotato.
- ii) Be given an overview of the general composition of SP varieties selected by farmers, and the effect of storage technologies on selected chemical component, and give input.
- iii) Be briefed on the outcome of shipment simulation study conducted, with the aim of conducting a similar study to incorporate an informal sensory evaluation by the European market.
- iv) Participate and evaluate the construction of some SP root storage structures in other sites e.g. schools
- v) Provide a backstopping role on enterprise development, maximising incomes, and development of user-friendly packages to disseminate post harvest technologies.

Summary

The coalition has made first-rate progress in the development of user-friendly packages to disseminate post harvest technologies, shipment simulation studies, storage technologies and enterprise development. Recommendations have been suggested that build upon these successes. These include suggestions for understanding and reducing losses in shipment studies and reducing losses using on-farm storage technologies.

Development of user friendly packages to disseminate post-harvest technologies (Monday 29 March 04).

This meeting was attended by:

- Dr Regina Kapinga, CIP
- Mr Geoffrey Menya, KARI
- Tumwe Camine Silver, CIP
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI

A variety of excellent packages for dissemination have already been developed by CIP on behalf of the coalition. In particular, the poster in the form of a 2004 calendar interspaced with illustrations of important objectives of the project was considered very appropriate. This calendar was eagerly received by farmers groups, processors groups and education establishments.

CIP have also developed draft posters to promote the importance of quality aspects for orange-fleshed sweetpotato production from the farm to the consumer. Following group discussions between the partners, the following approach was suggested:

- The stakeholders involved at each stage in the production and marketing chain could be consulted in the format and content of the posters or other means of dissemination if proposed by the stakeholders.
- Ownership of the promotion material is shared between the stakeholders and the coalition. The promotion material developed could also acknowledge the stakeholders who helped to develop it.
- It was suggested that the promotion material could be developed at the same time as the training activities that involve the stakeholders. This way the stakeholders would have a clear understanding of the key issues that need to be promoted and in a follow-on session to the training, help develop the promotion material.
- To assist the stakeholders in developing the promotion material, it was suggested that CIP use draft material to facilitate discussion.

Considering nutritional information on labels, it was suggested that the partnership consult the Uganda Standards Body to determine what the law specifies. Also, the partnership can look at the labelling of similar products already marketed. To refine the labelling, focus groups comprising consumers and traders could discuss and identify ways of improving the labelling and ensuring that the information (written and pictorial) informs.

Be briefed on the outcome of the shipment simulation study conducted and give inputs on handling of sweetpotato and marketing quality (Monday 29 March 04)

This meeting was attended by:

- Mr Katende Mukasa, Hortexa
- Dr Agnes Namutebi, Makerere University,
- Natabirwa Hedwig, Food Science and Technology Research Institute
- Mr Geoffrey Menya, KARI
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI

This study was very interesting and showed much potential for increasing stakeholder incomes through export of quality orange-fleshed sweetpotato to Europe. Many positive lessons have been learnt through the simulation study such as the importance of dehauling, selecting sweetpotato roots that were free of disease (rots) and damage (weevil, skinning, cuts, breaks, shrivelling), the appropriate packing of roots in fibreboard boxes, spacing of boxes in the container and temperature control. Detailed financial analysis had demonstrated that there are potentially clear economic benefits of shipping by sea as opposed to by air.

Following discussions between the partners the following issues might be considered.

- There are cultivar variations with Kakamega being the most suitable. Other cultivars could be investigated in the future;
- The weight loss of between 2% and 13% for dehaulmed and between 4% and 15% for non-dehaulmed was higher than that reported for sweetpotato stored in the USA of around 2%. This weight loss was associated with losses due to rotting of up to 39% for dehaulmed and 87% for non-dehaulmed. There are a number of possible explanations being a) the temperature of the roots exceeded 14°C through respiration leading to weight loss, b) that the humidity was less than 85% leading to desiccation and c) because the unit was not ventilated, the level of CO₂ increased sufficiently to result in anaerobic respiration and subsequent cell death d) the curing was incomplete.
- While the temperature in the container was set to 14°C, the humidity was set to 90%. This coalition may wish to consider reducing the humidity to 85% which is recommended. It was also understood that the container was not ventilated and this needs to be invested by the partnership.
- Furthermore, the only means of monitoring the temperature was that set by the container. It is possible that the actual temperature of the roots might have exceeded 14°C because of heat generated from respiration.
- If roots are not dehaulmed, the roots should be cured prior to transportation. Another option is to increase the dehauling period to 14 days or longer up to 21 days.
- Little was known about the effect that transporting the roots by road to Mombassa might have on root quality and whether this will be of concern.

A suggestion for future investigations is that more detailed information needs to be known about the actual temperature and humidity conditions inside the container. A solution might be to use temperature, humidity and impact dataloggers. These have the advantage that once programmed by a computer they can be positioned at key locations within the sealed container to measure more accurately the temperature and humidity of the roots within the boxes for the duration of the trial. After the container is opened the dataloggers can be retrieved and the information downloaded to a computer. Other lower cost methods of monitoring temperature and humidity might be possible and would be dependent on being able to feed cables from the inside to

the outside. To monitor the oxygen and carbon dioxide, hand-held portable meters are available.

The impact datalogger can monitor potential stresses caused by road transport and indicate key stages where potential damage might occur to the roots. It is recommended that the partners read a publication on the use of these loggers for monitoring sweetpotato (Tomlins, K. I., Ndunguru, G., Rwiza, E. and Westby, A. 2000. Post-harvest handling and transport of sweet potatoes and their influence on quality in Tanzania, *Journal of Horticultural Science and Biotechnology*, **75**, 586-590.). A copy of the paper is included in the CD-ROM (Paper on sweetpotato transport published in JSFA.doc).

For more information about dataloggers manufactured by Gemini Data Loggers Ltd. the following website is suggested - <http://www.geminidataloggers.com/products>. They can be purchased from RS Components (<http://rswww.com>). The product codes area;

- Tynytalk Internal temp; catalogue number 196-7386; price £63.00 each
- Tynytalk Relative humidity; catalogue number 196-7409; price £82.00 each
- Tynytalk 35mm PC lead; catalogue number 219-737; price £5.80
- GLM software, catalogue number 394-4672; price £46.00
- Tynytag Plus Shock; catalogue number 327-5960; £236.00 each
- Tynytag cable catalogue number 219-721; £5.50

Note: Other manufacturers also supply dataloggers.

PowerPoint presentations illustrating sweetpotato marketing in the UK from the consumer perspective and at New Spitalfields, London, Europe's largest fruit and vegetable market were shown to the partners. It was considered that the photographs illustrated the quality targets set by competing suppliers in the USA, Israel and Brazil. The photographs also illustrated the types of fibreboard boxes that competitors use. The PowerPoint presentations are included in this CD-ROM (UK consumer & sweetpotato.ppt and UK wholesale sweetpotato – Spitalfields.ppt). The coalition partners recommended that these pictures be shown to the farmers producing sweetpotato roots for export so that they could understand the quality demands and environment that sweetpotatoes are marketed in the UK.

The partners were shown a list of tenants (traders) at New Spitalfields, London (Appendix 1). Many of the traders deal in sweetpotato and might be potential future partners for Ugandan sweetpotato. More information about New SpitalfieldsWeb can be obtained from:

http://www.cityoflondon.gov.uk/our_services/markets/spitalfields/

New Spitalfields Market
Sherrin Road (Off Ruckholt Road),
Leyton,
London E10 5SQ
United Kingdom
Tel 020 8518 7670
Fax 020 8518 7449

Email: spitalfields.market@corpoflondon.gov.uk

Spitalfields Market Tenants Association

1st Floor

Allen House

London

United Kingdom

Tel 020 8556 1479

Fax 020 8556 1033

Email: jim@tenants.sagehost.co.uk

Note: The traders at New Spitalfields are very helpful and are happy to be approached.

Visit farmer group with processing technologies and products

This meeting was attended by:

- Bagya Basaaga Orange freshed potato growers and processors, Luwero District
- Mr Geoffrey Menya, KARI
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI

Many products were being produced by the association and the producers were very keen and motivated. The motorised chipper was seen as an essential part of the process. However, the association felt that they could not afford to purchase the machine without backstopping support from external organisations. Enterprise aspects are discussed later in this report.

Get briefing on constructed storage structures and hold discussions with farmers and leading partner with the aim of identifying gaps (Monday 29, Tuesday 30 March 04)

This meeting was attended by:

- Thsitukirewamu Kabulanaka Farmer Group Luwero District
- Mr Geoffrey Menya, KARI
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI

Excellent progress made by farmers and schools in application of technology. The farmers group had a good understanding of the need to dehaulm prior to harvest, handling of roots during harvest, quality and construction of the stores. Suggested improvements were:

- Place the stores in the shade under trees;
- Not to line the stores with grass (this also reduces cost);
- Provision of drainage channels to avoid rain water running into the stores;
- Regular inspection and termination of the store as soon as root deterioration is detected.

In addition, the farmers were advised of the risks in storing roots and therefore to determine their exposure according to their own situation.

The farmers were given a copy of a leaflet 'Storing Sweetpotato made Simple'. A copy of the leaflet is also included in the CD-ROM.

Participate and evaluate the construction of some sweetpotato root storage structures at schools in Luwero District

Staff and children from the following schools participated

- St Augustines Primary
- Ziobwe Church of Uganda Primary
- Wakatai Primary
- Bukimu Islamic Primary

Also participating were:

- Natabirwa Hedwig, Food Science and Technology Research Institute
- Mr Geoffrey Menya, KARI
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI
- Kyakonye - BRIBITE

The school had made tremendous progress in store construction. The store was correctly placed in the shade under a tree and the importance of root quality was understood. Suggested improvements were:

- Dehaulming before harvest
- Not to line the stores with grass (this also reduces their costs);
- Provision of drainage channels to avoid rain water running into the stores;
- Regular inspection and termination of the store as soon as root deterioration is detected.
- To understand the risks associated in that not all stores will be successful.

Meet BUCADEF staff and get briefing on activities related to enterprise development and maximising incomes

This meeting was attended by:

- Musoke Arthur, BUCADEF
- Deo Lukyamuzi, EDL
- Immaculate Sekitto, PRAPACE
- Mr Keith Tomlins, NRI

Outstanding progress has been made in farmers enterprises with support and backstopping by BUCADEF and EDL to encourage and provide sustainable enterprises. It was reiterated that the enterprises need to be based on a sound business plan that takes into account risk and susceptibility to shock resulting from changes in cost of raw materials, selling price, equipment breakdown, labour cost etc. All costs need to be included in the business plan including machinery donated by backstopping organisations. The target consumers, projected demand, price paid and changes over time also need to be estimated.

Visit farmers with NAARI/BUCADEF staff and give advice on enterprise development and maximising incomes

This meeting was attended by:

- Group leaders representing Kikoota, Tulina Ezzubi and Ninbye Mothers farmers groups
- Namayania Prossy, BUCADEF
- Immaculate, PRAPACE
- Mr Keith Tomlins, NRI

Storage of sweetpotato was discussed with the farmers groups. Stores (pit and clamp) were opened after 14 weeks storage. While the stores had been well constructed, the roots in the stores were mostly rotten because the stores were not constructed in the shade. Advice was given as with the other groups.

Considering the export market, the farmers were very keen to develop this market and had clear livelihood advantages through increased price of the roots compared to the local market. The need for providing sweetpotato roots that are of uniform size and shape and free of disease and damage for export markets was discussed. PowerPoint presentations of the UK situation was shown which stimulated much discussion. The farmers clearly understood and appreciated the need to only export good quality roots that were free from defects. The farmers also felt that they required more information about the export marketing chain to understand the relationship between price, grade, weight and quality.

Acknowledgements

Many thanks to the coalition partners and stakeholders for making my visit useful as well as enjoyable. In particular, I would like to thank Dr Berga Lemaga for facilitating my visit and Mrs Immaculate Sekitto for her kind support and assistance throughout my stay.

Appendix 1: List of Tenants (traders) at New Spitalfields market, London, United Kingdom.

Note: Some tenants are in bold. There are some that were trading the most sweetpotato in March 2004.

Aberdeen & Stanton Ltd
Stands 67, 68a
Tel: 020 8556 3128
Fax: 020 8558 8935

Ahmed Exotics
Stand 38
Tel: 020 8518 7008
Fax: 020 8561 5176
ahmed.exotic@webstar.co.uk

Akbar General Importers Ltd
Stand 71
Tel: 020 8558 7418
Fax: 020 8558 7410

Alancia Fruit & Veg
Stand 83A/B
Tel: 020 8539 0165
Fax: 020 8556 8173

Alphan
Stand 91
Tel: 020 8556 0888
Fax: 020 8556 0888

Amzone Fruit & Veg
Stand 102
Tel: 020 8539 1666
Fax: 020 8539 2666

Booker Hart Ltd
Stands 1a, 19, 20
Tel: 020 8539 8787

Walter Braund (Spitalfields) Ltd
Stand 62
Tel: 020 8558 9868
Fax: 020 8558 7062

R J Bristow & Son
Stands 93& 108
Tel: 020 8539 9190
/020 8558 6655
Fax: 020 8558 4768
/020 8559 9909

W Bruce (Stratford) Ltd
Stand 47
Tel: 020 8556 7463
Fax: 020 8556 5958

W Bruce Ltd

Stand 10
Tel: 020 8558 8889
Fax: 020 8556 7148

C & C Fruit Co. (Spitalfields) Ltd
Stands 21 & 22
Tel: 020 8558 6000
Fax: 020 8558 0100
<http://www.candcgroup.co.uk>

David Catt Ltd
Stand 52
Tel: 020 8558 9787
Fax: 020 8556 2168
cattspits@aol.com

A W Cavanagh (Spitalfields) Ltd
Stand 43
Tel: 020 8556 3326

Coles & Wall Growers Ltd
Stand 7
Tel: 020 8558 2424
Fax: 020 8539 5855

Peter Cornwell & Son
Stand 30
Tel: 020 8556 4006
Fax: 020 8556 4480

DamDam Limited
Stand 60A
Tel: 020 8539 7772
Fax: 020 8539 8907

Del Monte Fresh Produce (UK) Ltd
Stand 100
Tel: 020 8556 1226
Fax: 020 8556 1014

J & H Dinmore Ltd
Stands 5, 6 & 29
Tel: 020 8558 8757
Fax: 020 8556 5873

Direct Fresh Fruit & Veg
Stand 54
Tel: 020 8558 0023
Fax: 020 8558 0901

Donovan Bros Ltd
Stand 16 & 105
Tel: 020 8558 6566
Fax: 020 8558 4181

E Four Sales (Spitalfields) Ltd
Stand 109
Tel: 020 8558 7901
Fax: 020 8988 0717

Evans & Radford Ltd
Stand 96a
Tel: 020 8558 6777
Fax: 020 8558 4475

Fruit Deniz Ltd
Stands 83c & 84
Tel: 020 8556 7273
Fax: 020 8558 7796

Fruit International
Stands 44, 60b & 61
Tel: 020 8558 0819
Fax: 020 8472 0007

G D Sales
Stand 69
Tel: 020 8558 2216
Fax: 020 8558 2216
george@g.d.sales.ndirect.co.uk

Gilgrove (New Spitalfields) Ltd
Stand 23 & 1C
Tel: 020 8556 1416

J. Hackshall Ltd
Stand 15
Tel: 020 8558 8672
Fax: 020 8558 8672

Ernest Hammond (London) Ltd
Stand 68b
Tel: 020 8556 4441
Fax: 020 8556 4181

George Harlow
Stands 103-104
Tel: 020 8558 1317
Fax: 020 8558 7393

Hebatco International General Trading Ltd
Stand 63
Tel: 020 8988 0408
Fax: 020 8988 0409
hebatco@aol.com

T A Hilliard
Stand 94
Tel: 020 8556 5333
Fax: 020 8558 5595

John Hinge (Spitalfields) Ltd
Stands 33, 34 & 86
Tel: 020 8556 9050
Fax: 020 8558 0939
bireton@aol.com

Jonathan Hurst Ltd
Stand 41-42
Tel: 020 8558 7815

Fax: 020 8558 7135

Arthur Hutchinson Ltd
Stand 76 & 77
Tel: 020 8539 6005
Fax: 020 8539 8525

International Super Fruit & Veg
Stand 4
Tel: 020 8558 8047

J T Produce Ltd
Stands 24-27
Tel: 020 8556 3228
Fax: 020 8558 6838
jtproduce@compuserve.com

J T Kemsley (Spitalfields) Ltd
Stand 99
Tel: 020 8558 7711
Fax: 020 8556 8726

Kenyaveg Ltd (import Sweetpotato from Brazil, Israel, China)
Stands 39, 57 & 58
Tel: 020 8558 5180
Fax: 020 8558 5657

Knights Of London
Stand 3
Tel: 020 8558 9842
Fax: 020 8558 7018

Kong Ming Veg
Stands 31, 32, 64 & 65
Tel: 020 8558 8888
Fax: 020 8558 6868

Ian Lashmar & Son
Stand 101
Tel: 020 8539 2323
Fax: 020 8532 8338
lashmar@foxfarm.freeseve.co.uk

London Fruit & Veg
Stands 78 & 95
Tel: 020 8556 9045
Fax: 020 8539 0339

M & M Exotics
Stand 62a
Tel: 020 8556 6100
Fax: 020 8556 7776

M & R Superfresh Ltd (import sweetpotatoes)
Stand 74
Tel: 020 8556 0101
Fax: 020 8556 0419

M R (London) Ltd
Stand 66

Tel: 020 8556 9127
Fax: 020 8558 4754

V Marsh (Mushroom & Salad Sales)
Stand 35
Tel: 020 8558 1111
Fax: 020 8539 2006

A May Ltd
Stand 1b
Tel: 020 8556 8756
Fax: 020 8556 8722

Montgomery
Stand 45 & 46
Tel: 020 8558 8000
Fax: 020 8539 6005

B J Neale & Co Ltd
Stand 28
Tel: 020 8556 8580

Nirman Tropical Foods Ltd
Stand 59
Tel: 020 8518 7732
Fax: 020 8518 7943

S Oliver Ltd
Stand 81
Tel: 020 8556 1024

P & A Imports
Stand 18b
Tel: 020 8558 2750
Fax: 020 8558 1108

J & J Parsons
Stand 102
Tel: 020 8558 9999
Fax: 020 8558 9777

Prime Fruit & Veg
Stand 70 & 107
Tel: 020 8988 0111
Fax: 020 8556 0234

Jimmy Pan Imports (import SP from Israel, China, Brazil)
Stand 56
Tel: 020 8558 1665
Fax: 020 8539 8852

Pauls Fruit & Veg (Western International) Ltd
Stand 11
Tel: 020 8558 2677
Fax: 020 8558 7250

Payne Simmons Ltd
Stand 51
Tel: 020 8558 9045
Fax: 020 8558 8875

T J Poupart (import sweetpotato mainly from Israel and USA but will take other origins)

Stand 79

Tel: 020 8558 5922

Fax: 020 8558 6002

Rama Excellent Fruit & Veg

Stand 85

Tel: 020 8558 1940

Fax: 020 8558 1940

Arthur Ridgwell Ltd

Stand 12

Tel: 020 8558 9874

Fax: 0208 558 5609

M T Russell Ltd

Stand 2

Tel: 020 8558 7722

Fax: 0208 558 7726

Saliko

Stand 88b

Tel: 020 8518 7269

Fax: 020 8558 1556

E C Sandell & Son Ltd

Stand 14

Tel: 020 8558 9763

Fax: 020 8556 2504

A W Sexton & Sons (Stratford) Ltd

Stand 55

Tel: 020 8556 6463

Fax: 020 8556 6415

Shreeji Wholesale

Stand 8

Tel: 020 8558 8412

Fax: 020 8558 8414

Singh & Co

Stand 89

Tel: 020 8539 1166

Fax: 020 8558 0470

Joseph Smith

Stand 36

Tel: 020 8558 9720

Fax: 020 8558 1271

Special Fruit

Stands 80, 96b & 97

Tel: 020 8532 8882

Fax: 020 8518 7226

Sun Exotics

Stand 75

Tel: 020 8558 7778

Fax: 020 8558 7101

Sunnyfields Veg
Stands 48 - 50
Tel: 020 8558 3388
Fax: 020 8558 1133

Sunfresh
Stand 72
Tel: 020 8558 9803
Fax: 020 8558 6918

Sunripe Exotics Ltd
Stand 9
Tel: 020 8556 0200

Temple Veg (Sales)
Stands 90 & 106
Tel: 020 8558 2020
Fax: 020 8556 7545

S Thorogood & Sons (Covent Garden) Ltd
Stands 87 & 88b
Tel: 020 8539 7839
Fax: 020 8532 8645

Tropical Produce
Stand 73
Tel: 020 8558 0909
Fax: 020 8558 0707

Tropifresh (import sweetpotato from Brazil, China and about one consignment a week from Uganda through Asian traders)
Stands 16a, 17 & 40
Tel: 020 8558 6760
Fax: 020 8558 5897

Venwood Produce
Stand 53
Tel: 020 8558 3721

Vitacress (Sales) Limited
Stand 98
Tel: 020 8558 4026
Fax: 020 8569 2593

Waldon (Fruit) Ltd
Stand 37 & 18a
Tel: 020 8558 8818
Fax: 020 8558 1216

World Fruit
Stand 13
Tel: 020 8558 6912
Fax: 020 8558 9121