



# **Seed Storage Committee**

**Report to ISTA Ordinary  
Meeting, April 2005, Bangkok  
Thailand**

# Committee members

- Prof T Aveling – SA
- Dr M Bennett - USA
- Prof P Berjak – SA
- Dr R Blanco – Spain
- Dr C de la Cuadra – Spain
- Dr O Elbagoury – Egypt
- Mr D Erdey – SA
- Dr E González-Benito – Spain
- Dr P León-Lobos – Chile
- Prof M McDonald – USA
- Dr H Msanga – Tanzania
- Prof D Mycock - SA
- Prof H Pritchard - UK
- Dr M Sacandé – Burkino Faso
- Dr L Wiesner – USA (retired)
- Dr C Wood - UK

# Working Group 1 – Orthodox Seeds

- **Micro-organisms**
- **Cryostorage and genebanking**
- **Invigoration**
- **Development of methodologies**
- **Other aspects**



# Working Group 2 – Non Orthodox Seeds

- **Micro-organisms**
- **Storage**
- **Responses to manipulation**
- **Development of methodologies**



# Orthodox Seeds – Micro-organisms

**Aveling – storage practice of cowpea by rural farmers**

- **71 farms**
- **Sun dried and stored in calabashes or tins**
- **<20% mouldiness**
- **<20% insect infection**

# Orthodox Seeds – Micro-organisms

## Berjak

- Following fungal infection pattern through seed development in *Welwitschia mirabilis*

# Orthodox Seeds – Cryostorage and genebanking

de la Cuadra

- **Germination of 425 maize (Spanish origin) accessions after 2 decades storage under genebank conditions**

# Orthodox Seeds – Cryostorage and genebanking

## González-Benito

- Cryostorage of 4 *Halimium* and 8 *Helianthemum* spp
- Effects of different storage regimes on *Hirschfeldia incana*
- Determination of storage regime for *Sinapis arvensis*

# Orthodox Seeds – Cryostorage and genebanking

**Pritchard, Wood, Sacandé**

- **Assessment of germination of 14 tropical tree species after prolonged storage (up to 18 years). DSC, lipid analysis and moisture isotherms used to follow physical state of seeds.**

# Orthodox Seeds - Invigoration

de la Cuadra

- **Effect of hydration/dehydration treatments on stored barley, lentil and oat.**

# Orthodox Seeds – other aspects

de la Cuadra

- **Determination of the appropriate scarification treatments of 48 genebank accessions of *Trifolium glomeratum***

# Non Orthodox Seeds – Micro-organisms

## Berjak

- **Amaryllid spp – Fungi do not infect embryonic axes.**

## Erdey

- ***Strelitzia reginae* – Both external and internal fungi can be controlled using hot-water thermotherapy**

# Non Orthodox Seeds - Wet Storage

## Berjak

- *Syzygium cordatum* – 10 weeks at 16 °C
- Amaryllid spp - Isolated axes can be encapsulated and wet stored for 4 months at 6 °C

# Non Orthodox Seeds - Crystorage

## Berjak

- **Amaryllid spp, *Ekebergia capensis*,  
*Syzygium cordatum* and *Trichilia* spp**

# Non Orthodox Seeds – Responses to manipulation

## Berjak

- Mild dehydration stress – stimulates germination – *Trichilia* spp, *Podocarpus henkelii*, *Syzygium cuminii*

## Pritchard, Wood, Sacandé

- To determine appropriate storage regimes 9 palm species screened for desiccation tolerance

# Non Orthodox Seeds – Development of Methodologies

- **Berjak - Cryostorage of alternative tissues – apical meristems of *Dioscorea* spp**
- **Mycock - Cryostorage of alternative tissues – axillary buds of *Eucalyptus* spp, somatic embryos endangered protea**
- **Berjak – Synseeds – *Ekebergia capensis***

# Seed Storage Handbook

The background of the slide features a photograph of a seed storage facility. In the foreground, there is a vast field of golden-brown crops, likely corn, stretching towards the horizon. In the middle ground, several large, cylindrical, light-colored silos stand prominently. To the right of the silos, there is a long, low-profile building with a dark roof, possibly a processing or storage shed. The sky is a clear, pale blue.

- **Several members of committee have shown interest as contributors**
- **Editor required**
- **Financial support**