

# Forest Tree and Shrub Seed Committee

Elisa Vieira



# Members

Elisa Vieira	Brazil
Victor Vankus	USA
Lucie Robineau	France
Kevin Murtagh	Ireland
Magdalena Beza	Poland
Dave Kolotelo	Canada
Geângelo Calvi	Brazil
David Siqueira	New Zealand
Sergio Pasquini	Italy
Heidi Røsok Bye	Norway
Eugine Ojuku Olung'ati	Kenya
Chandrashekara V. Devegowda	India



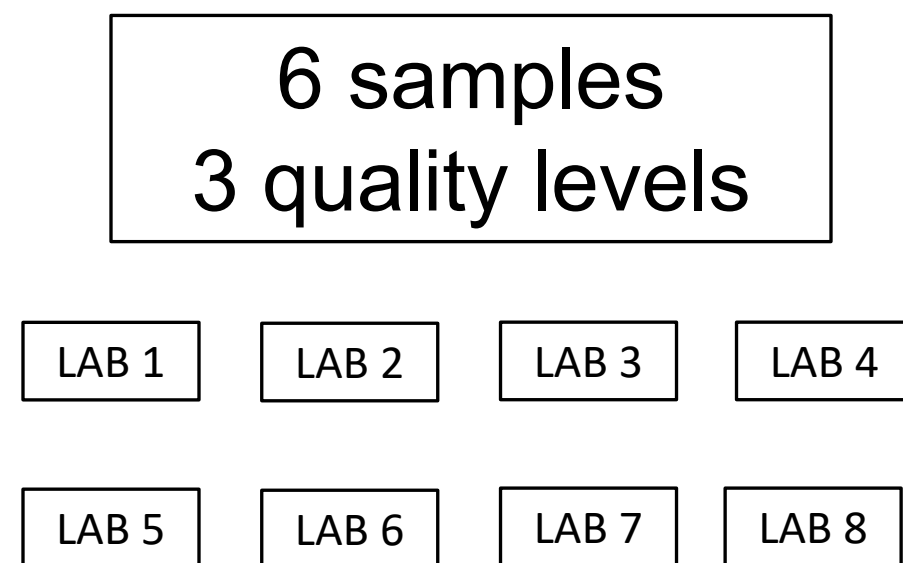
Two vacancies – priority Africa, Asia and Oceania

# Activities

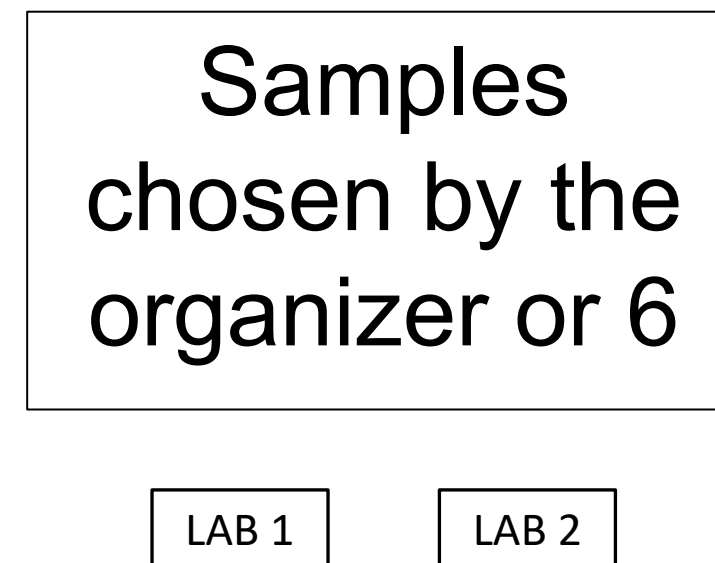
## 1) Validation of *Khaya grandifoliola* germination test:

Purpose: elaboration of a simplified protocol for forest and shrub tests validation process.

### Multi-laboratory validation:



### Peer validation:



### New method forest and shrub seeds:



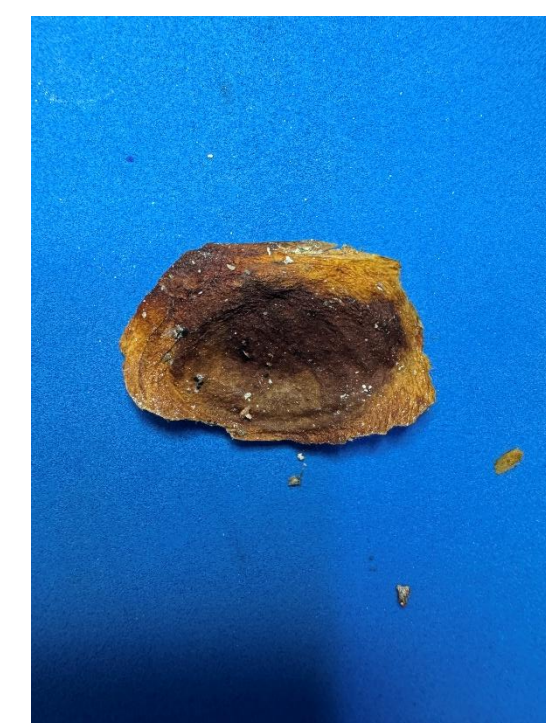
Statistics: new calculation

Statistics: rep - repro

# Activities

Results:

Provenance	%U	TSW (g)	Laboratory		
			Embrapa Forestry	CATI	Agriculture Ministry
Rio de Janeiro (2024)	6.8	433.16	62	60	60
Pará (2025)	7.9	314.3	80	74	86
Espirito Santo (2026)	7.6	328.6	75	72	???



# Activities

2) Chapter 13 (Testing seeds by weighed replicates ) revision:

- Species: *Betula* spp., *Chloris gayana*, *Corymbia* spp., *Eucalyptus* spp
- Working group: FTSCom – Sergio Pasquini, Elisa Vieira  
GerCom – Ignacio Aranciaga, Erik van Egmond  
External – Kym Beliveau (Australian Seed Laboratory)  
Frikkie Marais (Sakata Seeds South Africa)
- Revised topics:  
Mandatory purity test: no for *Betula* spp.

# Activities

Revised topics:

*Chloris gayana*: weighed replicates or 4x100 seeds: ???

Germination test: first count with 7 days.

Mandatory purity test: *Betula* spp. – no

*Chloris gayana*: ???

*Corymbia* and *Eucalyptus* spp. -yes

seed + dross = pure seed

Impurity: large pieces of chaffy matter and weed seeds.

Tables 13A and B: replicates weights (minimum???)

# Activities

Revised topics:

Number of seeds in the replicate is not 100.

Species	Counting	REP 1	REP2	REP 3	REP 4	Number of normal seedlings / Kg seed
Eucalyptus benthamii - 1	Replicate weight	0.1032	0.1009	0.1019	0.1004	314,960
	<b>Number of seeds (before germination)</b>	<b>35</b>	<b>54</b>	<b>21</b>	<b>34</b>	
	Number of normal seedlings	41	26	41	21	
	Number of abnormal seedlings	7	3	2	5	
	Number of death seeds	5	0	0	3	
	Total	53	29	43	29	
Eucalyptus benthamii - 2	Replicate weight	0.1003	0.1025	0.1001	0.1004	357,142
	<b>Number of seeds (before germination)</b>	<b>35</b>	<b>54</b>	<b>21</b>	<b>34</b>	
	Number of normal seedlings	29	43	11	28	
	Number of abnormal seedlings	1	8	2	5	
	Number of death seeds	2	3	4	0	
Total	32	54	17	33		
Eucalyptus camaldulensis	Replicate weight	0.1009	0.9989	0.9991	0.1011	215,000
	<b>Number of seeds (before germination)</b>	<b>20</b>	<b>15</b>	<b>25</b>	<b>30</b>	
	Number of normal seedlings	110	108	115	140	
	Number of abnormal seedlings					
	Number of death seeds					
Total	110	108	115	140		

Important information for new tolerance tables calculation by STACom.

# Activities

## 3) Forest Seed Health survey

- Forest Tree and Shrub Seed + Seed Health committees.
- Objective: to know pests (pathogens and insects) associated with forest seeds and its risk of dissemination by the international seed trade.
- Google Forms.

1. Country \*

Sua resposta

2. What are currently the most important pests (including diseases and insects) \*  
that are transmitted through seeds in forest species within your organisation or  
country?

Sua resposta

3. What types of identification tests are you currently using to detect these pests? \*

Sua resposta

4. Would you be interested in participating in workshops focused on methods \*  
for detecting these pests?

Sua resposta

5. When it comes to diseases and pests transmitted through forest seeds, what \*  
are your main concerns for the future?

Sua resposta

-187 requests – 40 answers

ISTA accredited labs  
Forest breeders, plant  
pathologists and entomologists

Countries:

Canada, Brazil, UK, Norway,  
Sweden, Poland, Italy, Malaysia,  
Vietnam, New Zealand

## Insects:

<i>Coleoptera spp.</i>
<i>Curculio elephas</i>
<i>Cydia splendana</i>
<i>Pamene fasciana</i>
<i>Curculio glandium</i>
<i>Megastigmus pictus</i>
<i>Megastigmus atedius</i>
<i>Megastigmus lasiocarpae</i>
<i>Megastigmus spermotrophus</i>
<i>Lycorma delicatula</i>
<i>Agrilus planipennis</i>
<i>Cryptophlebia ombrodelta</i>
<i>Bruchus pisorum</i>
<i>Moona spermophaga</i>

## Pathogens:

<i>Fusarium circinatum</i>
<i>Phytophthora</i>
<i>Pythium</i>
<i>Rhizoctonia</i>
<i>Cylendrocladium</i>
<i>Botrytis cinerea</i>
<i>Sphaeropsis sapinea</i>
<i>Macrophomina phaseolina</i>
<i>Alternaria alternata</i>
<i>Cladosporium cladosporoides</i>
<i>Penicillium expansum</i>
<i>Phoma spp.</i>
<i>Sirococcus conigenus</i>
<i>Diplodia sapinea</i>
<i>Diaporthe</i>
<i>Neonectria neomacrospora</i>
<i>Cryphonectria parasitica</i>
<i>Austropuccinia psidii</i>
<i>Rubus spp.</i>
<i>Sydowia polyspora</i>
<i>Xylella</i>
<i>Bursaphelenchus xylophilus</i>

## Detection methods:

Macro and microscopic inspection
Incubation (blotter tests)
Agar plate
PCR
ELISA
digital PCR
X-ray (insects)
Send material to specialists

## Future concerns:

Capacity-building
Unregulated trade of forest seeds
Spread of exotic pests due to FRM transit
Resistance absence
Climate change affecting distribution
Loss of genetic diversity
Inefficient detection
Trade restrictions
Resistance to traditional control methods

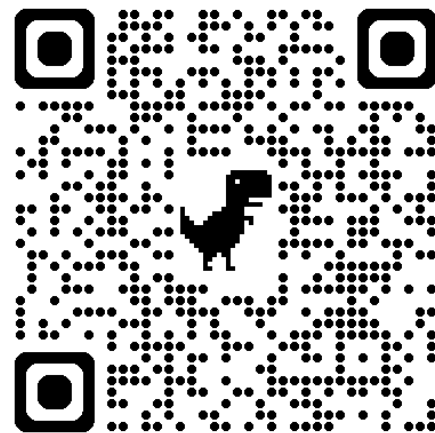
# Activities

## 4) Publication:



### Testing and International Trade of Forest Tree and Shrub Seeds

Elisa Vieira, Victor Vankus and Steve Jones



Tested forest species and genera by ISTA accredited laboratories	Most important species imported and exported by the countries associated to the OECD Forest Seed and Plant Scheme
<p><i>Robinia pseudoacacia, Pinus taeda, Pinus elliottii, Pinus sylvestris</i> and <i>Pinus</i> spp, <i>Prunus persica</i> and <i>Prunus</i> spp., <i>Abies alba</i> Miller, <i>Fagus sylvatica</i> L., <i>Larix decidua</i> Mill., <i>Picea abies</i> (L.) Karsten, <i>Pyrus</i> spp., <i>Eucalyptus</i> spp., <i>Quercus</i> spp.</p>	<p><i>Picea abies, Picea sitchensis, Cedrus libani, Pseudotsuga menziesii, Pseudotsuga menziesii var. glauca, Khaya senegalensis, Larix sibirica, Larix decidua, Acacia senegal, Anacardium occidentale, Betula pendula, Quercus robur, Quercus rubra, Quercus petraea, Castanea sativa, Carpinus betulus, Fagus sylvatica, Abies nordmanniana, Abies bornmuelleriana, Abies grandis, Acer campestre, Acer pseudoplatanus, Fraxinus sylvatica, Pinus nigra, Pinus sylvestris, Alnus glutinosa, Thuja plicata, Populus tremula</i></p>

# Activities

## 5) ISTA representation:

### ISF Tree and Shrub Group Annual Meeting 2025

- Dehra Dun, India
- August, 26-28
- Representative: Chandrashekara Devegowda
- Topics:
  - Phytosanitary requirements – exportation *Pinus* spp. and *Pseudotsuga* spp. seeds from US to EU – *Fusarium circinatum*.
  - *Forest seed stock*.
  - Discussions with OECD about native species.
  - EU FRM revision.
  - Future of the tree seed industry

# Activities

## OECD Forest Seeds and Plant Scheme Technical Working Group Meeting 2026

- Karpacz, Poland
- April, 27-28
- Permanent representative: Magdalena Beza
- Topics:
  - Updates OECD Forest Seeds and Plant Scheme rules and procedures (capacity-building strategy, draft Programme of Work (2027-2030)).
  - Collaborations (EUFORGEN, schemes on Wild Species, FOREMATIS).
  - Experiences of participating countries (FRM statistics report Nordic countries).
  - Stone Pine (*Pinus pinea*) grafting for improving the production of edible pine nuts).
  - Forest seed quality methods: TZ test applied to forest seeds.
  - Overview on Poland Forestry sector and conservation work at Kostrzyca Forest Gene Bank.



# Activities

## Questions to the committee:

Date	Question	Country	Answer
	Germination of <i>Coffea arabica</i>	Iran	RAS2009, but it is not used in routine. The TZ in the attached protocol is the test used and approved by MAPA
Nov./25	Pure seed definition for <i>Paulownia</i> spp.	Germany	Specie not included in ISTA rules and tables. Seed is similar to Tabebuia or Handroanthus seeds. Tabebuia can be found in the Tropical and Sub-tropical handbook (draw of the seed with wings). The definition 14 of PSD can be considered.
Nov./25	Criteria for inclusion of forest species in the scope of an accredited ISTA laboratory	India	Those species with international trade.
Dec./25	Germinatin test of <i>Eucalyptus obliqua</i>	Australia	Purity test is not necessary, weight of the replicate and germination condition indicated according to the book Eucalyptus Seed
April/26	<i>Moringa oleifera</i> germination test	Brazil	Wwashed sand and on agar media within 14-21 days. TZ test
April/26	Germination chamber models - experience	Slovenia	Members shared experience
June/26	<i>Mallus</i> spp. germination test	Germany	Prechelling for 42-91 days, germination at 20-30o C, 8 hours of light

# Thank you!

- FTSCom members
- ECOM Liaison Officer: Irena Gera and Sergio Pasquini
- Secretariat

