

FTS FOREST TREE AND SHRUB SEED COMMITTEE

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Rules Development

Introduction of New Methods

	TCOM	Method name/Subject	Proposed finalisation	Collaboration
1	FTS	Comparative tests of <i>Abies</i> germination	2010	GER
Planning stage: Survey of priorities and/or needs of FTS members regarding current <i>Abies</i> germination methods planned. Results from <i>Abies alba</i> comparative test on TEZ and germination will also be used to assess degree of uniformity in testing between laboratories and can be used for developing comparative germination tests on additional <i>Abies</i> species. Plan should be finalised and tests started by May or June 2009.				
2	FTS	Comparative tetrazolium tests of <i>Abies</i>	2010	TEZ, STA
In progress: In summer (after the workshop in Peri in June 2008) samples of <i>Abies alba</i> (one seedlot) were distributed to 20 laboratories. Before this the homogeneity of the seed samples were tested in two laboratories (CZDL02 and ITML0600) – both for tetrazolium (“wet” and “dry” methods) and germination. Recently 15 laboratories sent complete results, one laboratory send results of TEZ but not germination. The results obtained are compiled and ready for evaluation. After receiving the results from remaining laboratories all data will be send to STA for evaluation.				

Future Plan: Planning stage: in cooperation with the MOI we would like to start the activity dealing a determination of water activity.

Introduction of New Species

	COM	Species	Subject	Proposed finalisation	Collaboration
1	FTS	Tropical tree seed	Germination of palm seeds	2010	GER

In progress by working group from Seed Conservation Department of Royal Botanic Gardens Kew (Dr Charlotte Seal, Ms Suzy Wood and Prof Hugh W. Pritchard)

Germination of palm seeds available from commercial sources in 2008

Method

Palm seeds of 14 species were mainly purchased from a commercial source and sown onto 1% agar in plastic sandwich boxes. Only 20 – 25 seeds were usually sown. Boxes were placed into incubators at 30°C, photoperiod of 8h light/16 h dark. Seeds were scored as germinated when the radicle was clearly visible. Germination (and rate) varied from 16% (72 d) in *Pritchardia pacifica* to 88% (13 d) in *Tahina spectabilis* and *Pinanga coronata* seedlots (9 d). *Rhopaloblaste augusta* also germinated rapidly.

Species	Germination (%)	MTG (days)
<i>Latania loddigesii</i>	44	40
<i>Iriartea deltoidea</i>	28	56
<i>Latania verschaffeltii</i>	24	34
<i>Oenocarpus bataua</i>	20	27
<i>Oenocarpus mapora</i>	48	33
<i>Orania sylvicola</i>	40	29
<i>Tahina spectabilis</i>	88	13
<i>Basselinia gracilis</i>	32	35
<i>Burretiokentia hapala</i>	48	30
<i>Dictyosperma album</i>	25	25
<i>Phoenix dactylifera</i>	48	25
<i>Pinanga coronata</i>	88	10
<i>Pritchardia pacifica</i>	16	72
<i>Rhopaloblaste augusta</i>	64	9

2	FTS	<i>Jatropha curcas</i>	Validation study involving sampling, purity, 1000 seeds weight, moisture content, germination, viability (TEZ)	2010	BSC, PUR, MOI, GER, TEZ
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Planning stage:

Preliminary work has been carried out by a working group from Seed Conservation Department of Royal Botanic Gardens Kew (Dr Charlotte Seal, Ms Suzy Wood and Prof Hugh W. Pritchard)

Germination protocol for seeds of *Jatropha curcas*

Method

Jatropha curcas seeds were purchased from Sandeman Seeds (France) and were recorded to have a moisture content on receipt of 8.7%. Four replicates of 100 seeds were sown onto 1% agar in plastic sandwich boxes (size 17.5 cm x 11.5 cm x 5 cm), with 25 seeds per box. Boxes were placed into incubators at a temperature of 15°C, 20°C, 25°C, 30°C or 35°C, photoperiod of 8h light/16 h dark and a light intensity of 50-100 W/m². Seeds were scored for germination three times a week, where germination was measured when the length of the radicle was equal to the length of the seed. No further germination was observed after 45 days. However, all seeds were grown on until the first leaf stage to monitor development.

Results

The results were as follows:

Temperature (°C)	Germination# (%) ± std	MTG* (days) ± std
35	66.50 ± 0.76	6.05 ± 1.04
30	61.50 ± 0.65	6.51 ± 1.13
25	61.75 ± 0.59	7.11 ± 1.84
20	39.25 ± 0.73	11.99 ± 5.52
15	0	0

*mean time to germinate; #n = 4 x 100

Recommendation

Although germination and MTG were optimal at 35°C, developing seedlings were greener and appeared healthier at 30°C. Therefore, a temperature of 30°C is recommended for the germination of these species.

Publications**Rules accompanying publications**

	COM	Publication title	Proposed finalisation	Collaboration
1	FTS	ISTA Tree and Shrub Seed Handbook - revision	2010	
No progress yet.				

Workshops and Seminars**Training and education workshops**

	COM	Workshop subject	Proposed Date	Region
1	FTS	Temperate Tree and Shrub Seed Workshop in cooperation with the MOI + TEZ	June 2008	Europe/Italy
ISTA FTS Workshop 12-14 June 2008, Peri, Italy – in cooperation with TEZ, MOI, BSC <u>Program</u> included theoretical and practical sessions. There were 11 presentations dealing with sampling, moisture content, tetrazolium and germination. The practical sessions included mainly sampling and tetrazolium testing. <u>Participants</u> – 24 participants including chairs of the BSC, TEZ, MOI and FTS Committees Information regarding the topics, pictures and presentations can be downloaded at: http://www.corpoforestale.it/cnbfperi/EN/index.htm				
2	FTS	Tropical Tree and Shrub Seed Workshop	April 2009	South America / Brazil / Paraná State / Curitiba
The workshop has been postponed until 2011.				
3	FTS	Workshop in cooperation with Monica Moreno. The possibility of organising a workshop in conjunction with the IUFRO Congress is being examined	2009 (Planning stage)	Buenos Aires, Argentina

Seminars

	COM	Seminar subject	Proposed Date	Region
1	FTS	ISTA-supported conference (with IUFRO, BGCI and the ITF) on 'Trees, seeds and a changing climate' (, University of Sussex, United Kingdom), organised by Prof Hugh W. Pritchard and Dr Matthew Daws (RBG Kew, Wakehurst Place).	September 2008	Europe/United Kingdom
<p>Trees, Seeds and a Changing Climate', 22 – 25 September 2008, Royal Botanic Gardens Kew, Wakehurst Place & University of Sussex, Brighton, United Kingdom.</p> <p><u>Program</u> was divided into the following topics:</p> <ol style="list-style-type: none"> 1. CLIMATE CHANGE: PREDICTED AND OBSERVED IMPACTS 2. FOREST FRAGMENTATION AND RESTORATION 3. TREE SEED SCIENCE. <p><u>Participants</u> - 40 delegates from: Australia, Brazil, Canada, China, Denmark, Finland, Greece, Italy, Poland, RSA, Taiwan, United Kingdom.</p>				

Proficiency Tests

	Proficiency Test Subject	Proposed date	Collaboration
1	Tree and Shrub Seed Germination – 1 st round with 1 species	2009/10	PT
<p>Planning stage:</p> <p>The preliminary round will be initiated in 2009 (species: <i>Pinus sylvestris</i>; tests: purity, 1000 seed weight, germination).</p>			