



Tree Seed Centre
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DETAILS REQUIRED FROM COLLABORATORS SEEKING TREE SEED UNDER THE SATDC PROJECT

To qualify for SATDC support, potential collaborators must provide a statement giving background details to their project, including objectives of the proposed plantings.

To assist in the selection of appropriate species and provenances, requests for seed should be accompanied by project details including:

1) DESCRIPTION OF PROJECT

- Proponent or Manager (give full address for seed despatch)
- Objectives of project and proposed plantings
- Location of the project --
 - Country, State and nearest town
 - Latitude, Longitude, Altitude
- Indicate species of special interest
- Indicate results if Australian species have already been tested on the areas concerned, or similar sites nearby
- Project size
 - Number of trial sites proposed
 - Experimental design and spacing
 - Area of each trial (ha) and approximate number of plants required from each seedlot
- Preferred date for the receipt of seed samples and arrangements for provision of import permits, if required for research seed. Requests should be placed at least three months in advance of optimum sowing time to avoid disappointment.

2) SITE DETAILS

- Climate
 - Nearest representative weather station (name, latitude, longitude, altitude, years of record)
 - Rainfall - Mean annual rainfall and rainfall on a monthly basis. Temperature - Monthly mean values for average daily maximum (°C) and minimum (°C) temperatures. Absolute minimum (°C) and number of frosts (days/year)
- Local relief (flat, hollow, slope, ridge top)
- Slope (flat or gentle, intermediate, steep) and aspect
- Soil
 - Parent material
 - Soil texture, depth, colour, stoniness
 - Drainage (free draining, waterlogged etc)
 - pH (very acid (<4.5), acid (4.5-6.0), neutral (6.0-7.5), alkaline (>7.5))
 - Salinity (if applicable)
- A summary of the principal factors affecting tree growth

3) PROPOSED MANAGEMENT REGIME

Site preparation, weed control, fertilising, irrigation, protection, evaluation schedule, etc.

AVAILABILITY OF TREE PROPAGATION KITS

SATDC wishes to announce the availability of Tree Propagation Kits to a limited number of collaborators who are without the basic necessities to successfully raise seedlings for trial.

Each kit includes notes on the raising and establishment of Australian trees with special reference to the seed provided, gives recommendations on trial designs and contains basic nursery items such as germination trays, polythene bags, fertilizer, pesticides and labels.

Please note that the number of kits available is limited and requests will be considered on an individual basis according to the needs of potential recipients.

資料14 ギンビーのACLA試験地に植栽された樹種リスト

APPENDIX 1: SPECIES AND ORIGINS OF PLANTS TESTED IN THE GYMPIE ACIAR TRIALS

Genera (and Genus Codes) and Families in the Trials

Code	Genus	Family
Aca	Acacia	Leguminosae (Mimosoideae)
Adn	Adenanthera	Leguminosae (Mimosoideae)
Alb	Albizia	Leguminosae (Mimosoideae)
Alc	Allocasuarina (syn Casuarina)	Casuarinaceae
Alp	Alphitonia	Rhamnaceae
Ang	Angophora	Myrtaceae
Ata	Atalaya	Sapindaceae
Ban	Banksia	Proteaceae
Bra	Brachychiton	Sterculiaceae
Cal	Callitris	Cupressaceae (Gymnospermae)
Cas	Casuarina	Casuarinaceae
Csa	Cassia	Leguminosae (Caesalpinioideae)
Des	Dendrolobium (syn Desmodium)	Leguminosae (Papilionoideae)
Dod	Dodonea	Sapindaceae
Euc	Eucalyptus	Myrtaceae
Fli	Flindersia	Rutaceae
Gei	Geijera	Rutaceae
Gme	Gmelina	Verbenaceae
Gre	Grevillea	Proteaceae
Lep	Leptospermum	Myrtaceae
Lop	Lophostemon (syn Tristania)	Myrtaceae
Lys	Lysiphylum	Leguminosae (Caesalpinioideae)
Mel	Melaleuca	Myrtaceae
Mla	Melia	Meliaceae
Nau	Nauclea	Sterculiaceae
Neo	Neofabricia	Myrtaceae
Par	Parinari	Rosaceae
Pet	Petalostigma	Euphorbiaceae
Pla	Planchonella	Sapotaceae
Rho	Rhodospaera	Anacardiaceae
Ses	Sesbania	Leguminosae (Papilionoideae)
Syn	Syncarpia	Myrtaceae
Syz	Syzigium	Myrtaceae
Ter	Terminalia	Combretaceae
Yen	Yentilago	Rhamnaceae

ACIAR PLANTINGS - Species, Origin and Planting Year

Seedlot	Gen Species	Origin							Planting yr.mo
		Source	Lat °	Lon °	Alt (m)	Clim Gp	MAR (mm)		
1	14652	Aca adsurgens	Carranga WA	19 14	127 46	340	I	348	86.3
2	13794	Aca ammobia	Uluru NP NT	25 20	131 12	560	C	261	84.4
3	14631	Aca ampliceps	NE Wave Hill NT	17 26	130 56	230	I	493	86.3
4	14668	Aca ampliceps	40km E Halls Ck WA	18 26	127 51	400	I	441	86.3
5	13834	Aca aneistrocarpa	Avon Downs Ar NT	20 02	137 30	0	I	310	84.4
6	14093	Aca aneistrocarpa	Gary Hwy WA	24 26	125 06	440	F	221	85.2
7	13480	Aca aneura	13k N St George Q	27 53	148 43	210	D	503	84.4
8	13481	Aca aneura	6k E Charleville Q	26 25	146 17	300	F	454	84.4
9	13719	Aca aneura	Vaughan Springs NT	22 12	130 55	600	F	321	84.4
10	13687	Aca aulacocarpa	Iokwa Prov PNG	8 41	141 29	35	K	1804	84.4
11	13865	Aca aulacocarpa	Buckley LA Q	17 09	145 37	720	E	1612	84.4
12	13866	Aca aulacocarpa	Garioch Q	16 40	145 18	400	H	1317	84.4
13	14591	Aca aulacocarpa	N of Yeppoon Q	23 06	150 45	6	H	1327	87.2
14	14969	Aca aulacocarpa	31 km S Cooktown Q	15 41	145 12	125	K	1602	87.2
15	13686	Aca auriculiformis	Iokwa Prov PNG	8 41	141 29	35	K	1804	84.4
16	13854	Aca auriculiformis	Oenpelli Ar NT	12 20	133 04	50	K	1355	84.4
17	13861	Aca auriculiformis	Springvale Hld Q	15 50	144 55	500	H	1624	84.4
18	11690	Aca baileyana	Dubbo NSW	32 18	148 35	260	B	537	84.4
19	14756	Aca bancroftii	N Taroom Q	24 17	149 55	300	D	700	87.2
20	15589	Aca bancroftii	near Moranbah Q	21 30	148 05	310	G	617	87.2
21	13493	Aca bidwillii	24km NE Longreach Q	23 17	144 21	250	F	432	84.4
22	14187	Aca bidwillii	Ouaringa Q	23 50	149 57	119	G	710	85.2
23	14204	Aca bidwillii	Irvinebank Q	17 23	145 16	780	D	851	85.2
24	14599	Aca bidwillii	W Cloncurry Q	20 44	140 16	340	I	428	86.3
25	14754	Aca blakei	N Miles - Taroom Q	26 31	150 03	360	D	644	86.3
26	15518	Aca blakei	Miles/Chinchilla Q	26 40	150 17	410	D	665	87.2
27	14965	Aca brassii	30km N Coen Q	13 44	143 07	165	J	1149	86.3
28	15556	Aca burrowii	Goondiwindi/Texas Q	28 49	150 43	260	D	608	87.2
29	14039	Aca calcicola	W of Uluru NT	25 13	130 20	530	F	256	85.2
30	13485	Aca cambagei	S Longreach Q	24 01	143 48	210	F	391	84.4
31	13485	Aca cambagei	S of Longreach Q	24 01	143 48	210	F	391	85.2
	13487	Aca cambagei	98k W Windsorah Q	25 22	141 43	110	F	220	84.4
33	13487	Aca cambagei	98k W of Windsorah Q	25 22	141 43	110	F	220	85.2
34	13864	Aca cincinnata	Shoteel LA Q	16 57	145 38	440	H	1629	84.4
35	13878	Aca cincinnata	Julatten Ar Q	16 35	145 25	410	H	1639	84.4
36	13878	Aca cincinnata	Julatten area Q	16 35	145 25	410	H	1639	87.2
37	14732	Aca concurrens	W Rosewood Q	27 39	151 29	100	D	588	86.3
38	15516	Aca concurrens	Caboolture Q	27 01	152 56	35	E	1400	87.2
39	13767	Aca coriacea	Vaughan Springs NT	22 18	130 52	600	F	320	84.4
40	13768	Aca coriacea	Rabbit Flat NT	20 15	130 02	380	I	379	84.4
41	13774	Aca cowleana	Vaughan Springs NT	22 18	130 52	600	F	320	84.4
42	13775	Aca cowleana	Tanami Bore NT	19 58	129 42	450	I	398	84.4
43	14621	Aca cowleana	Daly Waters NT	16 15	133 22	200	J	621	86.3
44	14745	Aca crassa ssp crassa	Western Ck SF Q	27 51	151 02	380	D	643	86.3
45	13681	Aca crassicarpa	Mata Prov PNG	8 40	141 45	30	K	1848	84.4
46	13681	Aca crassicarpa	Mata Prov PNG	8 40	141 45	30	K	1848	86.3
47	13681	Aca crassicarpa	Mata prov PNG	8 40	141 45	30	K	1848	87.2
48	13682	Aca crassicarpa	Oriomo R Prov PNG	8 50	143 10	20	K	2107	86.3
49	13863	Aca crassicarpa	Shoteel LA Q	16 57	145 38	440	H	1629	84.4
50	14588	Aca cretata	57 km E Emerald Q	23 26	148 43	200	G	608	87.2

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Seedlot	Gen Species	Origin							Planting yr.mo	
		Source	Lat °	Lon °	Alt (m)	Clm Gp	MAR (mm)			
51	13629	<i>Aca dealbata</i>	Mt Toorongo	V	37 48	146 07	900	B	1686	84.4
52	14739	<i>Aca deanei</i>	N Cooyar	Q	26 55	151 49	550	D	772	86.3
53	15470	<i>Aca deanei</i>	Goondiwindi	Q	28 49	150 43	260	D	608	87.2
54	14726	<i>Aca decurrens</i>	SW Goulburn	NSW	34 53	149 17	685	B	683	86.3
55	14619	<i>Aca difficilis</i>	N Elliot	NT	17 24	133 30	250	J	505	86.3
56	14623	<i>Aca difficilis</i>	S Borroloola T'off	NT	16 21	133 22	235	J	618	86.3
57	9690	<i>Aca doratoxyton</i>	Condobolin Dist.	NSW	33 05	147 10	200	A	413	87.2
58	9972	<i>Aca elata</i>	Balmoral	NSW	33 04	151 35	120	B	1162	84.4
59	14738	<i>Aca falcata</i>	SW Nanango	Q	26 46	151 54	500	D	822	86.3
60	14970	<i>Aca falcata</i>	3km N Ravenshoe	Q	17 36	145 28	890	D	1169	86.3
61	15554	<i>Aca falcata</i>	Bunya Rd Samford	Q	27 22	152 54	120	D	1185	87.2
62	14981	<i>Aca falciformis</i>	15km NE Ravenshoe	Q	17 31	145 26	1050	E	1721	86.3
63	15502	<i>Aca falciformis</i>	S of Warwick	Q	28 32	151 58	900	D	835	87.2
64	14488	<i>Aca farnesiana</i>	Yuendumu Reserve	NT	22 15	131 47	600	F	279	85.2
65	14596	<i>Aca farnesiana</i>	NE Barcaldine	Q	23 33	145 18	265	F	466	86.3
66	15469	<i>Aca fasciculifera</i>	Rockhampton	Q	23 10	150 26	60	G	884	87.2
67	14736	<i>Aca fimbriata</i>	Tarong Coal Mine	Q	26 46	151 50	500	D	804	86.3
68	15472	<i>Aca fimbriata</i>	Samford	Q	27 14	152 50	80	D	1156	87.2
69	13958	<i>Aca flavescens</i>	Bramston Beach	Q	17 19	146 00	0	H	3941	84.4
70	14175	<i>Aca flavescens</i>	Mt Molloy	Q	16 40	145 18	400	H	1317	85.2
71	14590	<i>Aca flavescens</i>	Farnborough	Q	23 06	150 45	6	H	1327	86.3
72	14590	<i>Aca flavescens</i>	Farnborough	Q	23 06	150 45	6	H	1327	87.2
73	14763	<i>Aca glaucocarpa</i>	Blackdown Tld	Q	23 51	149 05	840	D	827	86.3
74	15473	<i>Aca glaucocarpa</i>	20 km NW Gayndah	Q	25 32	151 29	390	D	816	87.2
75	14891	<i>Aca hammondii</i>	8 km S Normanton	Q	17 43	141 03	20	J	876	86.3
76	15100	<i>Aca harpophylla</i>	70 km NW Moranbah	Q	21 44	147 36	300	G	575	87.2
77	14657	<i>Aca hemignosta</i>	98km N Halls Ck	WA	17 30	127 56	395	J	581	86.3
78	13853	<i>Aca holosericea</i>	Jabiru Area	NT	12 50	132 50	50	K	1386	84.4
79	13879	<i>Aca holosericea</i>	Mt Molloy/Mareeba	Q	16 46	145 15	380	G	1090	84.4
80	13879	<i>Aca holosericea</i>	Mt Molloy/Mareeba	Q	16 46	145 15	380	G	1090	86.3
81	13879	<i>Aca holosericea</i>	Mt Molloy/Mareeba	Q	16 46	145 15	380	G	1090	87.2
82	14660	<i>Aca holosericea</i>	Turkey Ck	WA	17 04	128 12	400	J	650	86.3
83	14197	<i>Aca hylonoma</i>	Gordonvale	Q	17 01	145 50	110	H	2387	85.2
84	14977	<i>Aca hylonoma</i>	14km NE Gordonvale	Q	17 01	145 50	110	H	2387	86.3
85	14885	<i>Aca julifera</i> ssp <i>gilbertensis</i>	62km NW Chillagoe	Q	16 47	144 08	280	G	922	86.3
86	14890	<i>Aca julifera</i> ssp <i>julifera</i>	128km N Hughenden	Q	19 54	144 16	930	D	685	86.3
87	14974	<i>Aca julifera</i> ssp <i>julifera</i>	3km SW Balfes Ck	Q	20 13	145 53	330	G	663	86.3
88	15558	<i>Aca julifera</i> ssp <i>julifera</i>	Ipswich	Q	27 37	152 50	60	D	902	87.2
89	15590	<i>Aca julifera</i> ssp <i>julifera</i>	near Moranbah	Q	21 58	148 14	310	G	629	87.2
90	14758	<i>Aca juncifolia</i>	Isla Gorge	Q	25 12	149 59	360	D	721	86.3
91	13779	<i>Aca latzii</i>	Wallera Range Rd	NT	24 34	132 47	450	F	212	85.2
92	14750	<i>Aca leiocalyx</i>	N Kogan to Warra	Q	26 59	150 50	340	D	677	87.2
93	15471	<i>Aca leiocalyx</i>	St George/Moonie	Q	27 54	149 39	280	D	552	87.2
94	13652	<i>Aca leptocarpa</i>	Heathlands	Q	12 45	143 15	60	K	1912	84.4
95	13691	<i>Aca leptocarpa</i>	Woroi-Wipim Prov	PNG	8 52	143 03	30	K	2017	84.4
96	14139	<i>Aca leptocarpa</i>	Mt Molloy	Q	16 40	145 18	400	H	1317	86.3
97	14577	<i>Aca leptoloba</i>	NE Irvinebank	Q	17 23	145 14	780	D	804	86.3
98	15503	<i>Aca leucoclada</i>	S of Warwick	Q	28 25	155 57	840	D	819	87.2
99	13739	<i>Aca ligulata</i>	Milton Pk	NT	23 15	132 52	620	F	244	84.4
100	13740	<i>Aca ligulata</i>	Vaughan Springs	NT	22 18	130 52	600	F	320	84.4

ACIAR PLANTINGS - Species, Origin and Planting Year

Seedlot	Gen Species	Origin							Planting yr.no		
		Source	Lat °	Lon °	Alt (m)	Clim Cp	MAR (mm)				
101	13740	<i>Aca ligulata</i>	Vaughan Springs NT	22	18	130	52	600	F	320	85.2
102	14587	<i>Aca longispicata</i>	Emerald Q	23	28	148	04	200	G	614	87.2
103	14676	<i>Aca maconochienana</i>	SW L Gregory WA	20	17	127	19	260	I	269	86.3
104	14761	<i>Aca macradenia</i>	Blackdown Tableland Q	23	51	149	01	860	D	837	87.2
105	15593	<i>Aca maidenii</i>	Brisbane Q	27	27	152	56	60	D	1147	87.2
106	13460	<i>Aca mangium</i>	Oriomo Rv PNG	8	50	143	08	10	K	2090	84.4
107	13621	<i>Aca mangium</i>	Piru, Ceram Indones IND	3	04	128	12	150			84.4
108	13946	<i>Aca mangium</i>	7km SSE Mossman Q	16	31	145	24	60	K	1977	84.4
109	13807	<i>Aca mearnsii</i>	Robertson NSW	34	00	150	00	500	B	783	84.4
110	14398	<i>Aca mearnsii</i>	4km N Batemans Bay NSW	36	20	150	13	40	B	946	86.3
111	14398	<i>Aca mearnsii</i>	4 km N Batemans Bay NSW	36	20	150	13	40	B	946	87.2
112	12986	<i>Aca melanoxylon</i>	Smithton Area TAS	41	00	145	00	200	B	1501	85.2
113	13630	<i>Aca melanoxylon</i>	Jeeralong V	38	25	146	30	550	B	1277	84.4
114	14176	<i>Aca melanoxylon</i>	Atherton Q	17	17	145	26	1022	E	1428	85.2
115	14585	<i>Aca melanoxylon</i>	W of Brisbane Q	27	24	152	55	100	D	1175	87.2
116	14766	<i>Aca melanoxylon</i>	NW Samford Q	27	22	152	47	300	E	1236	86.3
117	14766	<i>Aca melanoxylon</i>	NW of Samford Q	27	22	152	47	300	E	1236	87.2
118	13944	<i>Aca melanoxylon</i>	E Nambour Q	26	36	153	02	100	E	1886	84.4
119	13944	<i>Aca melanoxylon</i>	E Nambour Q	26	36	153	02	100	E	1886	85.2
120	13773	<i>Aca monticola</i>	Warrabi Hill NT	22	21	131	18	700	F	317	84.4
121	14008	<i>Aca monticola</i>	S of Broome WA	18	50	121	40	25	I	447	85.2
122	13781	<i>Aca murrayana</i>	Ayers Rock NT	25	13	130	53	580	F	263	84.4
123	13781	<i>Aca murrayana</i>	Ayers Rock NT	25	13	130	53	580	F	263	85.2
124	13782	<i>Aca murrayana</i>	Olgas NT	25	12	130	48	590	F	265	84.4
125	13782	<i>Aca murrayana</i>	Olgas NT	25	12	130	48	590	F	265	85.2
126	14735	<i>Aca neriifolia</i>	N Toowoomba Q	27	24	152	00	500	D	819	86.3
127	14759	<i>Aca neriifolia</i>	Blackdown Tld Q	23	51	149	04	860	D	839	86.3
128	13654	<i>Aca oraria</i>	Starcke Hdg Q	14	16	144	26	1	K	1272	84.4
129	13867	<i>Aca oraria</i>	Springvale Hdg Q	15	48	144	56	150	K	1390	84.4
130	14961	<i>Aca oraria</i>	39km NW Cairns Q	16	41	145	35	5	H	1825	86.3
131	14672	<i>Aca pachycarpa</i>	E Billihona Stn WA	19	33	127	41	300	I	313	86.3
132	14629	<i>Aca pallidifolia</i>	N Camfield R NT	16	41	131	46	200	J	584	86.3
133	14767	<i>Aca parramattensis</i>	NE Marulan NSW	34	42	150	02	550	B	704	86.3
134	13482	<i>Aca pendula</i>	N Charleville Q	25	51	146	36	380	D	507	84.4
135	13482	<i>Aca pendula</i>	N of Charleville Q	25	51	146	36	380	D	507	85.2
136	13962	<i>Aca pendula</i>	Collie-Trangie Dist NSW	31	40	148	18	200	A	481	84.4
137	14757	<i>Aca penninervis</i>	Isla Gorge Q	25	12	149	59	360	D	721	86.3
138	15592	<i>Aca penninervis</i>	near Childers Q	25	13	152	06	110	D	1008	87.2
139	14542	<i>Aca platycarpa</i>	SE Katherine NT	14	35	132	30	190	J	684	86.3
140	14960	<i>Aca platycarpa</i>	61km NW Chillagoe Q	16	47	144	08	280	G	922	86.3
141	9094	<i>Aca plectocarpa</i>	Chapman R Kimberley WA	16	20	126	50	410	J	760	84.4
142	14003	<i>Aca plectocarpa</i>	Middle Springs WA	15	45	128	40	50	J	748	85.2
143	14003	<i>Aca plectocarpa</i>	Middle Springs WA	15	45	128	40	50	J	748	87.2
144	14004	<i>Aca plectocarpa</i>	Packsaddle Springs WA	15	50	128	40	50	J	729	85.2
145	14695	<i>Aca plectocarpa</i>	Kununurra WA	16	18	128	15	120	J	656	86.3
146	12055	<i>Aca podalyrifolia</i>	Bundaberg Area Q	24	50	152	40	100	G	1136	84.4
147	12055	<i>Aca podalyrifolia</i>	Bundaberg Area Q	24	50	152	40	100	G	1136	85.2
148	12055	<i>Aca podalyrifolia</i>	Bundaberg Area Q	24	50	152	40	100	G	1136	86.3
149	12055	<i>Aca podalyrifolia</i>	Bundaberg Area Q	24	50	152	40	100	G	1136	87.2
150	14733	<i>Aca podalyrifolia</i>	W Rosewood Q	27	38	151	29	100	D	569	86.3

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Seedlot	Gen	Species	Origin						Planting yr. mo	
			Source	Lat °	Lon °	Alt (m)	Clim Gp	MAP (mm)		
151	14737	<i>Aca podalyrifolia</i>	SW of Nanango	Q	26 46	151 54	500	D	822	87.2
152	14747	<i>Aca polybotrya</i>	W Millmeran	Q	27 57	151 08	420	D	647	86.3
153	13500	<i>Aca polystacha</i>	McIlwraith Rg	Q	13 42	143 18	360	G	1183	84.4
154	13871	<i>Aca polystacha</i>	Bridle LA	Q	16 58	145 37	480	H	1576	84.4
155	7859	<i>Aca pruinocarpa</i>	Wiluna	WA	26 37	120 15	520	A	209	84.4
156	7859	<i>Aca pruinocarpa</i>	Wiluna	WA	26 37	120 15	520	A	209	85.2
157	7915	<i>Aca pruinocarpa</i>	59km N Meekatharra	WA	26 00	118 00	490	A	194	86.3
158	7947	<i>Aca pruinocarpa</i>	21km ESE Meekatharra	WA	26 00	118 00	490	A	194	84.4
159	7947	<i>Aca pruinocarpa</i>	21km ESE Meekatharra	WA	26 00	118 00	490	A	194	85.2
160	15474	<i>Aca pustula</i>	Ban Ban Springs	Q	25 48	151 51	280	D	822	87.2
161	13599	<i>Aca retinoides</i>	Moynton Ar	V	37 18	142 46	854	B	1051	84.4
162	14140	<i>Aca rothii</i>	Musgrave	Q	14 17	143 26	210	K	1209	85.2
163	14160	<i>Aca rothii</i>	Weipa	Q	12 32	141 51	10	K	1662	85.2
164	13501	<i>Aca salicina</i>	34km E Roma	Q	26 34	149 08	310	D	585	84.4
165	14592	<i>Aca salicina</i>	23km W Banana	Q	24 36	149 54	105	G	652	86.3
166	13651	<i>Aca saligna</i>	Wanneroo	WA	31 45	115 48	20	B	812	84.4
167	14622	<i>Aca shirleyi</i>	Daly Waters	NT	16 19	133 23	225	J	620	86.3
168	14753	<i>Aca shirleyi</i>	E Miles	Q	26 40	150 15	360	D	644	86.3
169	14773	<i>Aca silvestris</i>	NW Bombala	NSW	36 49	149 00	800	B	566	86.3
170	13690	<i>Aca simsii</i>	Rouku Prov	PNG	8 42	141 32	30	K	1817	84.4
171	13960	<i>Aca simsii</i>	Stannery Hills	Q	17 19	145 13	700	D	768	85.2
172	13960	<i>Aca simsii</i>	Stannery Hills	Q	17 19	145 13	700	D	768	84.4
173	13488	<i>Aca stenophylla</i>	SE Windorah	Q	25 06	142 50	120	F	283	84.4
174	13961	<i>Aca stenophylla</i>	Quambone (mid W)	NSW	30 56	147 52	200	A	432	84.4
175	14670	<i>Aca stenophylla</i>	Cow Ck	WA	18 41	128 21	340	I	374	86.3
176	14751	<i>Aca stenophylla</i>	Condamine River	Q	26 50	150 34	300	D	642	87.2
177	15588	<i>Aca stenophylla</i>	Chinchilla	Q	26 46	150 35	310	D	649	87.2
178	14612	<i>Aca stipuligera</i>	N Banka Banka	NT	18 38	133 57	305	J	406	86.3
179	14760	<i>Aca storeyi</i>	Blackdown Tld	Q	23 52	149 01	860	D	836	86.3
180	14975	<i>Aca tephрина</i>	NE & E Hughenden	Q	20 50	144 18	333	F	457	86.3
181	13843	<i>Aca torulosa</i>	Elliot	NT	17 33	133 32		I	489	84.4
	14141	<i>Aca torulosa</i>	Weipa	Q	12 39	141 49	2	K	1690	86.3
183	14183	<i>Aca torulosa</i>	NW Chillagoe	Q	16 36	144 07	275	G	945	85.2
184	14888	<i>Aca torulosa</i>	29km NW Laura	Q	15 27	144 13	110	J	956	86.3
185	14229	<i>Aca trachyphloia</i>	Monga SF	NSW	35 36	149 55	710	B	910	86.3
186	11505	<i>Aca tumida</i>	104km N Pt Headland	WA	20 08	119 23	110	I	299	85.2
187	11514	<i>Aca tumida</i>	nr Wittenoom	WA	21 41	117 45	480	F	357	85.2
188	14675	<i>Aca tumida</i>	S L Grégory	WA	20 10	127 34	260	I	266	86.3
189	13271	<i>Aca victoriae</i>	79km N Charleville	Q	25 51	146 35	310	F	491	84.4
190	13494	<i>Aca victoriae</i>	NW Dajarra	Q	21 32	139 15	240	F	324	84.4
191	14489	<i>Aca victoriae</i>	Titree Station	NT	22 08	133 02	552	F	277	85.2
192	15464	<i>Aca victoriae</i>	Blackall	Q	24 28	145 36	300	F	489	87.2
193	15559	<i>Aca victoriae</i>	Clermont/Alpha	Q	22 57	147 07	300	G	586	87.2
194	14180	<i>Adn abrosperma</i>	WNW Wrotham Park	Q	16 30	143 21	108	J	998	85.2
195	14577	<i>Adn abrosperma</i>	NW Chillagoe	Q	16 59	144 18	220	J	868	86.3
196	15513	<i>Adn abrosperma</i>	Laura	Q	15 32	144 24	90	J	925	87.2
197	14213	<i>Aib procera</i>	Port Douglas	Q	16 34	145 30	30	H	1864	85.2
198	14959	<i>Aib procera</i>	14km NE Cairns	Q	16 50	145 41	10	H	1958	86.3
199	14962	<i>Aib procera</i>	12km S Port Douglas	Q	16 33	145 29	15	K	1911	87.2
200	13164	<i>Aib campestris ssp campestris</i>	3km W Quarading	WA	32 03	117 23	290	A	387	84.4

ACIAR PLANTINGS - Species, Origin and Planting Year

Seedlot	Gen. Species	Origin						Planting yr. mo		
		Source	Lat °	Lon °	Alt (m)	Clim Gp	MAR (mm)			
201	13225	<i>Alo. campestris</i> ssp <i>eriochlamys</i>	Comet Vale	YA	29 56	121 07		A	227	84.4
202	13226	<i>Alo. campestris</i> ssp <i>grossa</i>	7km N Norseman	YA	32 00	121 40	280	A	275	84.4
203	13201	<i>Alo. decaisneana</i>	Curtin Springs	NT	25 18	131 42	440	F	236	84.4
204	13204	<i>Alo. decaisneana</i>	NW Hermannsburg Mst	NT	23 45	132 41	580	F	241	84.4
205	13171	<i>Alo. huegeliana</i>	40km W Naremben	YA	32 05	118 50	380	A	320	84.4
206	13172	<i>Alo. huegeliana</i>	Hyden Rock W Hyden	YA	32 28	118 53	360	A	327	84.4
207	13133	<i>Alo. littoralis</i>	NE Gympie	Q	25 57	152 56	50	E	1411	86.3
208	13880	<i>Alo. luehmannii</i>	Mt Molloy/Mareeba	Q	16 49	145 23	380	G	1055	86.3
209	14186	<i>Alp. excelsa</i>	Rockhampton	Q	23 07	150 20	20	G	845	85.2
210	14190	<i>Alp. excelsa</i>	Dinga	Q	23 11	149 17	212	G	709	85.2
211	15475	<i>Alp. petrei</i>	Cooroy/Gympie	Q	26 24	152 49	170	E	1509	87.2
212	13332	<i>Ang. costata</i>	W Woolgoolga	NSW	30 03	153 04	250	E	1372	84.4
213	13332	<i>Ang. costata</i>	W Woolgoolga	NSW	30 03	153 04	250	E	1372	85.2
214	14181	<i>Ata. hemiglauca</i>	NW Chillagoe	Q	16 36	143 48	211	J	933	85.2
215	14486	<i>Ata. hemiglauca</i>	Utopia Station	NT	22 14	134 34	491	F	269	85.2
216	14191	<i>Ban. integrifolia</i> v comp.	Shoal Bay	Q	23 13	150 48	5	H	1202	85.2
217	15466	<i>Bra. populneus</i>	Dalby	Q	27 04	151 19	410	D	638	87.2
218	9496	<i>Cal. endlicheri</i>	Gilgandra Dist	NSW	31 00	148 00	290	A	455	84.4
219	9711	<i>Cal. intratropica</i>	Murganella	NT	11 32	132 56	30	K	1330	84.4
220	8052	<i>Cal. macleayana</i>	Whian Whian SF	NSW	29 00	153 00	375	E	1461	84.4
221	14843	<i>Cas. cristata</i>	W Gilgandra	NSW	31 43	148 40	290	B	529	86.3
222	15240	<i>Cas. cristata</i>	14 km E Coondiwindi	Q	28 29	150 27	220	D	581	87.2
223	13134	<i>Cas. cunninghamiana</i>	13km S Gympie	Q	26 20	152 41	200	E	1263	84.4
224	13511	<i>Cas. cunninghamiana</i>	26km SE Mt Morgan	Q	23 49	150 18	120	G	759	84.4
225	13515	<i>Cas. cunninghamiana</i>	9km SE Mareeba	Q	17 04	145 28	400	G	1087	84.4
226	13515	<i>Cas. cunninghamiana</i>	9km SE Mareeba	Q	17 04	145 28	400	G	1087	85.2
227	13515	<i>Cas. cunninghamiana</i>	9km SE Mareeba	Q	17 04	145 28	400	G	1087	86.3
228	13515	<i>Cas. cunninghamiana</i>	9km SE Mareeba	Q	17 04	145 28	400	G	1087	87.2
229	13134	<i>Cas. cunninghamiana</i> + F	13km S Gympie	Q	26 20	152 41	200	E	1263	84.4
230	13511	<i>Cas. cunninghamiana</i> + F	26km SE Mt Morgan	Q	23 49	150 18	120	G	758	84.4
231	13515	<i>Cas. cunninghamiana</i> + F	9km SE Mareeba	Q	17 04	145 28	400	G	1087	84.4
232	15567	<i>Cas. equisetifolia</i> ssp <i>incana</i>	Moreton Island	Q	26 06	153 26	1	E	1482	87.2
233	15579	<i>Cas. glauca</i>	Agnes Waters	Q	24 14	151 52	10	G	1186	87.2
234	14100	<i>Cas. obesa</i>	20km W Wiluna	YA	26 34	120 03	550	A	212	86.3
235	14188	<i>Csa. brewsteri</i>	Blackwater	Q	23 35	149 03	195	G	637	85.2
236	15514	<i>Csa. queenslandica</i>	13 km E Mt Molloy	Q	16 40	145 27	400	H	1505	87.2
237	14560	<i>Des. umbellatum</i>	SE Chillagoe	Q	17 18	144 35	500	G	773	86.3
238	13753	<i>Dod. augustissima</i>	Ayeyonga Nat Res	NT	23 52	132 33	650	F	257	84.4
239	13754	<i>Dod. augustissima</i>	Ukuru NP	NT	25 20	131 47	500	F	244	84.4
240	13755	<i>Dod. viscosa</i> ssp <i>spatulata</i>	Stanley Chasm	NT	23 45	133 28	720	C	241	86.3
241	12336	<i>Euc. annulata</i>	Coconarup Res	YA	33 38	119 51	0	A	442	84.4
242	13713	<i>Euc. argophloia</i>	SF 302 Ballon	Q	26 20	150 40	300	D	684	84.4
243	13713	<i>Euc. argophloia</i>	SF 302 Ballon	Q	26 20	150 40	300	D	684	85.2
244	13713	<i>Euc. argophloia</i>	SF 302 Ballon	Q	26 20	150 40	300	D	684	86.3
245	11468	<i>Euc. brevifolia</i>	52km W Timber Ck	NT	15 42	130 07	20	J	777	84.4
246	14338	<i>Euc. camaldulensis</i>	E Petford	Q	17 17	145 03	500	G	703	86.3
247	14338	<i>Euc. camaldulensis</i>	E of Petford	Q	17 17	145 03	500	G	703	87.2
248	14425	<i>Euc. cloeziana</i>	Gympie	Q	26 18	152 48	100	E	1387	86.3
249	14425	<i>Euc. cloeziana</i>	Gympie	Q	26 18	152 48	100	E	1387	87.2
250	7034	<i>Euc. gamophylla</i>	11 km fm Millstream	YA	22 00	118 00	300	I	329	84.4

ACTAR PLANTINGS - Species, Origin and Planting Year

Seedlot	Gen	Species	Origin						Planting yr.mo
			Source	Lat °	Lon °	Alt (m)	Clim Grp	MAR (mm)	
251	10499	Euc. gamophylla	109km N Alice Spring NT	22 50	133 25	670	F	263	84.4
252	12541	Euc. gamophylla	Dales Gorge WA	22 57	118 38	500	F	278	85.2
253	12541	Euc. gamophylla	Dales Gorge WA	22 57	118 38	500	F	278	84.4
254	14044	Euc. gamophylla	W of Olgas NT	25 05	130 03	610	F	269	85.2
255	12839	Euc. gongylocarpa	Windarra WA	28 32	122 15	460	A	211	84.4
256	13886	Euc. grandis	Woondum SF Gympie Q	26 18	152 47	60	E	1331	86.3
257	13886	Euc. grandis	Woondum SF Gympie Q	26 18	152 47	60	E	1331	87.2
258	13906	Euc. grandis	Boambee SF Coffs Hbr NSW	30 18	153 03	60	E	1792	86.3
259	13906	Euc. grandis	Boambee SF Coffs Hbr NSW	30 18	153 03	60	E	1792	87.2
260	13936	Euc. jensenii	N Phillips Rg WA	16 46	125 52	400	J	826	86.3
261	13158	Euc. melanophloia	40km N Charleville Q	26 25	146 13	330	F	459	84.4
262	13588	Euc. melanophloia	Drummond Rg Q	22 46	147 31	300	G	596	84.4
263	10700	Euc. normantonensis	32km W Mt Isa Q	20 20	138 50	300	I	391	84.4
264	10945	Euc. normantonensis	26km W McLeod R Q	16 27	144 47	460	H	1281	84.4
265	10945	Euc. normantonensis	26km W McLeod R Q	16 27	144 47	460	H	1281	85.2
266	8583	Euc. ochrophloia	47km N Thargomindah Q	27 39	143 49	140	F	268	84.4
267	11731	Euc. ochrophloia	35km S Quilpie Q	26 53	144 20	180	F	319	85.2
268	12507	Euc. ochrophloia	NW Charleville Q	26 08	145 40	302	F	444	84.4
269	7228	Euc. oxymitra	5km E Yawa Bore NT	24 39	132 18	540	F	241	84.4
270	15510	Euc. raverelliana	Rockhampton Q	23 22	150 31	5	G	914	87.2
271	12262	Euc. sheathiana	143km W Coolgardie WA	31 17	119 52	340	A	306	84.4
272	12776	Euc. socialis	20km E Wilcannia NSW	31 32	143 34	20	A	222	84.4
273	13792	Euc. socialis	Redbank Gorge NP NT	23 34	132 31	600	F	259	84.4
274	13759	Euc. trivalvis	Redbank Gorge NP NT	23 34	132 31	600	F	259	84.4
275	13760	Euc. trivalvis	Olgas NT	25 12	130 48	580	F	264	84.4
276	15241	Eli. maculosa	25km NW Blackall Q	24 14	145 20	280	F	474	87.2
277	15467	Gei. parviflora	Roma/Miles Q	26 34	148 55	300	D	565	87.2
278	14995	Grn. dalrympleana	2km E Cooktown Q	15 28	145 16	8	K	1672	87.2
279	15512	Grn. dalrympleana	Mossman/Daintree Q	16 23	145 24	5	K	2653	87.2
280	14164	Gre. glauca	Weipa Q	12 43	142 06	18	K	1588	85.2
281	14177	Gre. glauca	Mt Garnet Q	17 40	145 07	765	D	753	85.2
282	15511	Gre. glauca	Mt Mollooy Q	16 39	145 15	440	H	1316	87.2
283	14143	Gre. parallela	Weipa Q	12 33	141 52	10	K	1663	86.3
284	14980	Gre. pinnatifida	Julatten Area Q	16 34	145 22	415	H	1606	86.3
285	14905	Gre. pteridifolia	46km NW Cooktown Q	15 17	145 59	280	H	1687	86.3
286	11706	Gre. robusta	Gilgandra (pl) NSW	31 42	148 42	280	B	532	84.4
287	11706	Gre. robusta	Gilgandra (pl) NSW	31 42	148 42	280	B	532	85.2
288	13955	Lep. flavescens	Nowra NSW	35 02	150 36	40	B	1165	84.4
289	15582	Lep. flavescens	Tin Can Bay Area Q	25 59	152 52	10	E	1346	87.2
290	14144	Lep. longifolium	Weipa Q	12 40	142 06	10	K	1590	85.2
291	14900	Lep. longifolium	34km NW Laura Q	15 26	144 11	90	J	944	86.3
292	14555	Lep. petersonii	SW Atherton Q	17 21	145 24	935	E	1231	86.3
293	15568	Lop. confertus	Moreton Is. Q	27 09	153 25	10	E	1473	87.2
294	13529	Lop. grandiflorus	N Coen Q	13 46	143 08	170	J	1144	84.4
295	14185	Lop. suaveolens	Ravenshoe Q	17 35	145 27	935	D	1197	85.2
296	14185	Lop. suaveolens	Ravenshoe Q	17 35	145 27	935	D	1197	86.3
297	11475	Lys. cunninghamii	W of King River WA	15 52	128 19	100	J	702	87.2
298	13845	Lys. carronii	Urundangie NT	21 45	138 20	0	I	249	87.2
299	14146	Mel. acacioides	SE Weipa Q	12 43	142 05	2	K	1599	85.2
300	14866	Mel. arcana	NNE Tozers Gap Q	12 43	143 12	100	K	1840	86.3

ACIAR PLANTINGS - Species, Origin and Planting Year

Seedlot	Gen Species	Origin							Planting yr mo	
		Source	Lat °	Lon °	Alt (m)	Clm Gp	MAR (mm)			
301	14876	Mel arcana	NW Cooktown	Q	15 12	145 09	40	K	1713	86.3
302	14485	Mel bracteata	N Alice Springs	NT	23 36	133 52	840	C	271	85.2
303	14903	Mel bracteata	W Lakeland Dns	Q	15 50	144 54	180	K	1378	86.3
304	14550	Mel cajuputi	SE Daintree	Q	16 16	145 22	5	K	3067	86.3
305	14878	Mel cajuputi	N Mossman	Q	16 16	145 23	12	K	3120	86.3
306	11935	Mel dealbata	near Humpty Doo	NT	12 35	131 18	20	K	1492	84.4
307	15564	Mel lanceolata	45km NE Chinchilla	Q	26 30	151 00	300	D	683	87.2
308	13751	Mel lasiandra	Vaughan Springs	NT	22 18	130 52	600	F	320	84.4
309	13752	Mel lasiandra	Rabbit Flat	NT	20 15	130 02	380	I	379	84.4
310	13532	Mel leucadendra	Iron Rg	Q	12 42	143 20	40	K	1909	84.4
311	13567	Mel leucadendra	Mareeba	Q	17 00	145 30	500	G	1145	84.4
312	13567	Mel leucadendra	Mareeba	Q	17 00	145 30	500	G	1145	85.2
313	13567	Mel leucadendra	Mareeba	Q	17 00	145 30	500	G	1145	86.3
314	13567	Mel leucadendra	Mareeba	Q	17 00	145 30	500	G	1145	87.2
315	14147	Mel leucadendra	Weipa	Q	12 31	141 48	10	K	1665	85.2
316	15575	Mel leucadendra	St. Lawrence	Q	22 23	149 30	25	G	906	87.2
317	14979	Mel linariifolia	1km S 'The Lynd'	Q	18 56	144 30	550	G	659	86.3
318	13440	Mel nervosa	Lake Buchanan	Q	30 33	145 50	300	G	554	84.4
319	13440	Mel nervosa	W L Buchanan	Q	30 33	145 50	300	G	554	86.3
320	14879	Mel nervosa	NE Homestead	Q	20 20	145 42	320	G	645	86.3
321	15565	Mel quinqueruvia	Cakoundra	Q	26 48	152 59	90	E	1750	87.2
322	14902	Mel quinqueruvia (vel aff)	NW Mt Molloy	Q	16 38	145 23	375	H	1473	86.3
323	14149	Mel saligna	Weipa	Q	12 44	142 06	10	K	1590	85.2
324	7717	Mel stypheloides								84.4
325	14495	Mel symphyocarpa	Daly R Mison	NT	13 45	130 42	8	K	1285	86.3
326	14150	Mel symphyocarpa	Weipa	Q	12 31	141 48	10	K	1665	85.2
327	14170	Mel symphyocarpa	Weipa	Q	12 40	141 53	10	K	1690	85.2
328	13530	Mel viridiflora	Iron Rg	Q	12 42	143 20	60	K	1906	84.4
329	14558	Mel viridiflora	NW Chillagoe	Q	16 36	144 07	265	G	938	86.3
330	14589	Mel viridiflora	NW Rockhampton	Q	22 52	150 17	30	G	1140	86.3
331	14500	Mla azedarach v australasica	Atherton	Q	17 17	145 27	752	D	1171	86.3
332	14501	Mla azedarach v australasica	SW Mt Garnet	Q	18 05	144 52	780	D	825	86.3
333	11354	Nau orientalis	W New Britain	PNG						84.4
334	14889	Neo myrtifolia (sp ass n)	S Laura	Q	15 49	144 16	360	G	1141	86.3
335	14896	Neo myrtifolia (sp ass n)	C Weymouth	Q	12 38	143 25	10	K	1845	86.3
336	14153	Par ronda	Weipa	Q	12 33	141 52	10	K	1663	85.2
337	14155	Pel pubescens	Ravenshoe	Q	17 38	145 20	650	G	1138	85.2
338	14189	Pel pubescens	N Dingo	Q	23 11	149 17	192	G	702	85.2
339	14179	Pla pohknamiana v vestita	Albington	Q	18 42	146 17	0	H	2040	85.2
341	15566	Rho rhodanthema	Rathdowney	Q	28 17	152 52	240	D	942	87.2
342	15439	Ses formosa	Maitland R. Hwy 1	VA	20 51	116 36	80	I	298	87.2
343	15509	Syn hillii	NE of Gympie	Q	26 03	153 00	30	E	1461	87.2
344	14157	Syz suborbiculare	Weipa	Q	12 39	141 30	2	K	1675	84.4
345		Syz suborbiculare							1565	86.3
346	14506	Ter ferdinandiana	Cox Peninsula Rd	NT	12 27	130 50	30	K		85.2
347	14178	Ter platyphylla	Mt Carbine	Q	16 31	145 06	360	H	1460	85.2
348	14182	Ter platyphylla	NW Chillagoe	Q	16 40	143 59	202	J	907	85.2
349	15519	Ter platyphylla		Q						87.2
350	15468	Yen yimialis	Augathella	Q	25 53	146 31	370	G	501	87.2

FORESTRY TRAINING CENTRE

MS 483 Fraser Road GYMPIE Q. 4570 Telephone (071) 82 2244 Telex: Quefor AA 42263



The Queensland Department of Forestry operates the Forestry Training Centre located about 5 km north of Gympie in South East Queensland. The Centre was primarily designed as a venue for technical training in tropical and sub tropical forestry. The Gympie location was chosen because there is easy access to the major indigenous forest types and the major plantation types of Queensland.

The town of Gympie has a population of about 12000 people and is a comfortable 2 hour drive north of the Queensland capital city, Brisbane. The climate is sub tropical with hot, humid summers and cool, mainly dry winters. Frosts, generally light, can occur between May and September. Most of the rainfall (> 50%) occurs during the December to March period with much of the rainfall occurring as heavy storms.

The Forestry Training Centre offers a full time Associate Diploma in Applied Science (Forestry) course which is tailored to suit the needs of technical staff. The course is primarily designed to provide an adequate background of formal teaching and practical field experience to enable young people to fill the overseer, forest ranger and technician positions in the Department of Forestry's work force. As such, it is foremost among courses specialising in tropical and sub tropical forestry at the technician level in the Asian and Pacific regions. The Fiji Pine Commission has reported very favourably on the success of the course in training some of their employees. Other countries have also expressed interest in this course.

Expertise and facilities have now been built up to allow the Training Centre to offer short courses in sub-tropical and tropical forestry at the technician level. These courses can be tailored to fit the needs of the participants.

The Training Centre maintains close contact with researchers from the Forest Research Centre, located on the same campus. As a result the Training Centre has been the venue for three major international workshops over the last five years:

- . A Tropical Forest Management Workshop in 1983;
- . A Workshop on Land Use Planning in a Watershed Context in 1985 sponsored by the East-West Centre, Honolulu;
- . A Workshop on Australian Acacias sponsored by ACIAR in 1986.

This close contact is also used to ensure that courses at the Training Centre contain the most up-to-date information. The Research Centre houses sections involved in tree-breeding, hydrology, nutrition, native forest and plantation silviculture, plant propagation and fire research.

SHORT COURSES

AUSTRALIAN TREES - RESOURCES FOR DEVELOPMENT.

PRELIMINARY NOTICE

During 1989-90 three short courses will be held to introduce participants to Australian trees, their ecology, distribution, silviculture and utilization. Australia is guardian to a unique and extensive resource of woody flora which has proven to be very valuable in forestation programs both in Australia and overseas. There are over 6 million hectares of *Eucalyptus* plantations in the world, and about half a million of *Acacia* species, another half million of *Casuarina* and many other plantings of *Hakea*, *Grevillea* and *Araucaria*. These are playing an increasingly important role in the industrial and economic development of many countries. Currently over 40% of the world's tropical forestry plantations are of species of Australian origin. Australian trees and woody shrubs have been used for fuelwood, building materials, and as an industrial raw material, as well as for many other uses. Many more species within the Australian tree flora have the potential to be equally useful when planted as exotics in other parts of the world.

These three short courses are intended for foresters, agriculturalists, aid administrators and others who have an interest in using the genetic resources of the Australian tree flora for forestation purposes.

A number of Australian educational and research institutions are co-operating to present these courses, including the Department of Forestry in the Australian National University, Canberra, the Faculty of Agriculture and Forest Science in the University of Melbourne, the Gympie Training Wing of the Queensland Department of Forestry, the Australian Tree Seed Centre of the CSIRO Division of Forestry and Forest Products, and the Australian Centre for International Agricultural Research (ACIAR). Other co-operators will include the State Forest Services for the areas where field inspections are to be held.

The three courses will be:

Course No. 1. Tropical and Sub-tropical Australia, 26 June - 18 August, 1989.

This course will concentrate on the flora of eastern Australia from Canberra to Townsville and the Darwin area of the Northern Territory. Approximately 4 weeks of lectures, demonstrations, and local forest inspections will take place at Canberra and Gympie to deal with the dendrology, ecology, silviculture, harvesting and use of Australian species. Field tours will cover a range of sites between Canberra and Coffs Harbour, N.S.W., and from Brisbane to Townsville in Queensland, and the environs of Darwin and Katherine in the Northern Territory. These tours will last approximately 4 weeks in total.

Course No. 2. Temperate Australia. 29 January - 23 March, 1990.

This course will concentrate on the flora of south-eastern Australia, Victoria and Tasmania. Approximately 4 weeks of lectures, demonstrations and local forest inspections will take place at Canberra and Creswick (the Forestry Annex of the University of Melbourne) to deal with the dendrology, ecology, silviculture, harvesting and use of Australian species. Field tours will cover the same range of sites as in Course No. 1 between Canberra and Coffs Harbour, N.S.W., and selected sites within Victoria and Tasmania. These tours will last approximately 4 weeks.

Course No. 3. Arid and Semi-arid Australia. 25 June - 17 August, 1990.

This course will concentrate on the flora of the drier regions of Australia. Approximately 4 weeks of lectures, demonstrations and local forest inspections will take place at Canberra and Perth to deal with the dendrology, ecology, silviculture, harvesting and use of Australian species. Field tours will cover the dry country between Canberra, Broken Hill, north-western Victoria and Adelaide, and the Kalgoorlie goldfields and north-western areas of Western Australia, ending up in Darwin. These tours will last approximately 4 weeks.

All three courses will pay particular attention to seed production and collection, selection of species and provenances, and sources of seed for research and commercial purposes. A reasonable working knowledge of the English language will be required, with the level of instruction at commencement undergraduate level.

The cost per participant after arrival in Canberra, to departure from Darwin or Melbourne will be in the vicinity of \$Aust 12,000. Expressions of interest at this stage should be sent to the address below when more complete details will be supplied.

Enquiries should be addressed to:

Australian Trees Short Course,
ANUTECH Pty. Ltd.,
Australian National University,
P.O.Box 4, GPO,
Canberra, Australia, 2601.

資料 17

Proposal for Short Courses

AUSTRALIAN TREES - RESOURCES FOR DEVELOPMENT

ANUTECH PTY LTD,

In association with

THE DEPARTMENT OF FORESTRY,
AUSTRALIAN NATIONAL UNIVERSITY, CANBERRA

THE FACULTY OF AGRICULTURE AND FOREST SCIENCE, MELBOURNE

DEPARTMENT OF FORESTRY TRAINING CENTRE,
GYMPIE, QUEENSLAND

CURTIN UNIVERSITY, PERTH

AUSTRALIAN TREE SEED CENTRE,
CSIRO DIVISION OF FORESTRY AND FOREST PRODUCTS, CANBERRA

AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH,
(ACIAR), CANBERRA

Canberra
May 1988

SHORT COURSES

AUSTRALIAN TREES - RESOURCES FOR DEVELOPMENT.

Introduction

During 1989-90 three short courses will be held to introduce participants to Australian trees, their ecology, distribution, silviculture and utilization. Australia is guardian to a unique and extensive resource of woody flora which has proven to be very valuable in forestation programs both in Australia and overseas. There are over 6 million hectares of *Eucalyptus* plantations in the world, and about half a million of *Acacia* species, another half million of *Casuarina* and many other plantings of *Hakea*, *Grevillea* and *Araucaria*. These are playing an increasingly important role in the industrial and economic development of many countries. Currently over 40% of the world's tropical forestry plantations are of species of Australian origin. Australian trees and woody shrubs have been used for fuelwood, building materials, and as an industrial raw material, as well as for many other uses. Many more species within the Australian tree flora have the potential to be equally useful when planted as exotics in other parts of the world.

Perceived Need

Our information from around the world suggests there is great interest in the Australian flora and that there is a market for short courses dealing with this topic. This information has come to us from Australian foresters working overseas either as consultants or as aid workers, and from overseas visitors to our universities and research institutions. These three short courses are intended for foresters, agriculturalists, aid administrators and others who have an interest in using the genetic resources of the Australian tree flora for forestation purposes.

Organisation of the Courses

A number of Australian educational and research institutions are co-operating to present these courses, including the Department of Forestry in the Australian National University, Canberra, the Faculty of Agriculture and Forest Science in the University of Melbourne, the Gympie Training Wing of the Queensland Department of Forestry, Curtin University in Perth, the Australian Tree Seed Centre of the CSIRO Division of Forestry and Forest Products, and the Australian Centre for International Agricultural Research (ACIAR). Other co-operators will include the State Forest Services for the areas where field inspections are to be held.

The course will be managed by ANUTECH Pty. Ltd., a wholly owned company associated with the Australian National University. The Coordinator of the course will be Dr. K.R. Shepherd, Reader in the Department of Forestry in the Australian National University. The Department of Forestry will be responsible for presenting the first, formal part of the program. The Department, headed by Professor D.M. Griffin, has an academic staff of seventeen, including many with extensive overseas experience in the aid and consulting fields. The three co-operating institutions in Queensland, Victoria and Western Australia, likewise have experienced staff who will present the lectures and demonstrations. The field tours will be co-ordinated by the Australian Tree Seed Centre, headed by Mr. S. J. Midgley, of the CSIRO Division of Forestry and Forest Products. ACIAR participation will be co-ordinated by Dr. J.W. Turnbull.

Educational Methodology

The courses are designed to cover three different regions of Australia, each sufficiently distinct to warrant individual treatment. In each course approximately two-and-a-half weeks of lectures, demonstrations, and local forest inspections will take place at the Department of Forestry, Australian National University, Canberra, to deal with the dendrology, ecology, silviculture, and some aspects of the harvesting and use of Australian species. An additional series of lectures, demonstrations and local field inspections will take place on location in either Queensland, at the Department of Forestry Training School, at Gympie; the University of Melbourne facility for Forestry at Creswick, Victoria; or at Curtin University in Perth, Western Australia. These segments of the course will deal particularly with raising and planting Australian species, as well as supplementing the material dealt with in Canberra. All three courses will pay particular attention to seed production and collection, selection of species and provenances, and sources of seed for research and commercial purposes. The program for each course can be outlined briefly as follows:

Course No. 1. Tropical and Sub-tropical Australia, 26 June - 18 August, 1989.

This course will concentrate on the flora of eastern Australia from Canberra to Townsville and the Darwin area of the Northern Territory. Field tours will cover a range of sites between Canberra and Coffs Harbour, N.S.W., and from Brisbane to Townsville in Queensland, and the environs of Darwin and Katherine in the Northern Territory. These tours will last approximately 4 weeks in total. Particular species of interest will include: *Eucalyptus camaldulensis*, *E. grandis*, *E. saligna*, *E. cloeziana*, *E. dunnii*, *Acacia uloeccarpa*, *A. auriculiformis*, *A. mangium*, *Grevillea robusta* and *Macadamia spp* as well as many others less well known outside Australia.

Course No. 2. Temperate Australia, 29 January - 23 March, 1990.

This course will study the flora of S-E Australia, including New South Wales, Victoria and Tasmania. The first field tour will cover the same range of sites as in Course No. 1 between Canberra and Coffs Harbour, N.S.W. The second long field tour will cover selected sites within Victoria and Tasmania. These tours will last approximately 4 weeks. Particular species of interest will include *Eucalyptus camaldulensis*, *E. grandis*, *E. saligna*, *E. dunnii*, *E. robusta*, *E. viminalis*, *E. delegatensis*, *E. regnans*, *E. nitens*, *E. obliqua* and *E. globulus* spp. *globulus*, *Acacia dealbata*, *A. mearnsii* and *A. melanoxylon*, *Casuarina cunninghamiana* and *C. stricta*, as well as others less well known outside Australia.

Course No. 3. Arid and Semi-arid Australia, 25 June - 17 August, 1990.

This course will concentrate on the flora of the drier regions of Australia. Field tours will cover the dry country between Canberra, Broken Hill, north-western Victoria and Adelaide, and the Kalgoorlie goldfields and north-western areas of Western Australia, ending up in Darwin. These tours will last approximately 4 weeks. Key species will include not only those well known internationally, such as *Eucalyptus camaldulensis* and *Acacia aneura* but also many others at present little known outside Australia.

Course Content for the Lecture, Laboratory and Demonstration Program

1.1 Introduction to the Australian flora.

1.1.1 Its origins, nature and extent and significance in a world context. An introduction to the Australian flora, including its phytogeographical regions. (1 hour)*

1.1.2 Concepts and ecological evolution of the flora. Including the floristic elements and 3-phase evolution, and the significance of paleo-environments in eucalypt evolution. (1 hour)

1.1.3 Major forest types. Descriptions of major forest types, including rainforests, eucalypt, casuarina and wattle dominated forests and woodlands. (2 hours)

1.2 Australian vegetation.

1.2.1 Taxonomy. The processes of tree identification, descriptive terminology, construction and use of keys, herbarium procedures etc, with particular emphasis on the Australian flora and the reference resources available in Australia. Taxonomy, modern classification, comparative morphology, geographical distribution, and species identification for *Eucalyptus*, *Casuarina*, *Acacia* and *Melaleuca* species and some other species of international importance, including *Araucaria*. (6 hours plus laboratory work for 6 hours)

* Suggested time allocated for the topic.

1.2.2 Ecology. Environmental influences on species distribution of the Australian tree flora: topography and latitude, soil chemistry and nutrient availability, soil physical properties and water status, Insects, micro-organisms and fire. Conservation status of the Australian flora, with particular reference to important gene resources. Environmental concerns about planting Eucalypts. (8 hours plus a field visit of about 6 hours)

1.2.3 Genetic variation. The nature and extent of genetic variation in some important Australian tree species. The importance of provenance in seed collection. Case studies of some selected species of world economic importance, including possibly *Euc. camaldulensis*, *E. viminalis*, *E. cloeziana*, *E. grandis*, *E. globulus*, *E. nitens* or selected *Acacia* species. (6 hours)

1.3 Technology of Introduction.

1.3.1 Choosing a species for forestation purposes. Methods of species introduction and testing, provenance testing, choice of the most suitable provenance. Aids to species selection, homoclimatic matching, CLIMSIM and BIOCLIM, data banks on species performance in various locations. (2 hours)

1.3.2 Seed collection and seed handling. Methods used by the seed section of CSIRO in field collections of seed for world distribution, methods of drying, cleaning and storing seed. Germination testing of eucalypt, acacia and casuarina species. Various techniques will be demonstrated. (4 hours plus 4 hours of demonstrations and lab. visits)

1.3.3 Nursery techniques. Methods for raising seedlings and for vegetative propagation of Australian tree species. Tissue culture, use with Australian species. (2 hours plus a visit to a local nursery)

1.3.4 Establishment and protection. Methods for establishment of plantings using Australian tree species, with particular emphasis on the importance of good soil preparation, the use of fertilizers and pesticides, protection from animal and insect pests, and from diseases. (2 hours plus some field inspections)

1.4 Tree improvement strategies.

1.4.1 Opportunities for tree improvement. The nature and extent of genetic variation in Australian tree species and opportunities for genetic improvement. (1 hour)

1.4.2 Breeding strategies. Approaches to tree breeding which might be followed to improve the gene resource available for valuable species. Use of seed and vegetative propagation. (2 hours)

1.4.3 Tree breeding methods for improvement in selected traits in eucalypts, casuarinas and acacias, the time scale involved, the nature and extent of benefits to be expected. (2 hours)

1.4.4 Some specific case studies of tree improvement programs for Australian species. (2 hours)

1.5 Uses of Australian tree species.

1.5.1 Uses of tree species in Australia and elsewhere for lumber, pulpwood, fuelwood and charcoal (coppice production), oils, honey, fodder, medicinal purposes and drugs, other minor forest products. (2 hours)

1.5.2 Problems of harvesting, transporting, processing, drying and preserving Australian timbers. The discussion will deal with particular problems which can arise with harvesting and processing of Australian tree species, many of which are heavy, dense, subject to considerable growth stresses, can cause excessive wear to saws etc. etc. (6 hours plus 6 hours field inspections)

Note: Much of this course will be presented in Canberra. Sections 1.3.3, 1.3.4 and parts of 1.5.1 and 1.5.2 will probably be dealt with either at Gympie, or Creswick, or Perth.

Itinerary for the Coursework and Field Tours

Appendix 1 provides a detailed breakdown of the two months of time to be devoted to each course, including the times in residence in Canberra and the other instruction centre for the particular course, and the broad outline of the tour program for each course. The tour programs have been planned to allow maximum exposure to the Australian flora in the time available. The field tours will be used to build on the knowledge gained in lectures and laboratory demonstrations concerning identification and ecology of trees and shrubs of the Australian flora. They will go to places where provenances of international significance grow, allow time for some experience with field collection procedures, and for inspection of CSIRO/ACIAR provenance trials of international significance. Tours will also include inspections of routine forestry administration and operations within areas controlled by State Forest Services and the private companies where the itinerary allows.

Standard of the Courses

The instruction will be pitched at approximately the commencement university undergraduate level. A reasonable working knowledge of botany and forestry would be desirable but not essential.

Language for the Courses

A working knowledge of the English language will be required by participants.

Costs

The cost per participant has been determined on the basis of the in-country costs, from arrival in Canberra, to departure from Australia either by way of Darwin or Melbourne, depending on the particular course. The in-country costs will be in the vicinity of SAust 14,000.

Expressions of Interest

Expressions of Interest should be sent to the address below and enrolment details will be supplied.

Australian Trees Short Course,

ANUTECH Pty. Ltd.,

Australian National University,

P.O.Box 4, GPO Canberra,

Australia, 2601.

APPENDIX 1a.

Itinerary for Course No. 1 - Tropical and Sub-tropical Australia

Week No	Day	Date	Activity
1	sat	Jun 24	Arrival
	sun	Jun 25	Arrival
	mon	Jun 26	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jun 27	Lectures, laboratory work, field demonstrations in Canberra
	wed	Jun 28	Lectures, laboratory work, field demonstrations in Canberra
	thur	Jun 29	Lectures, laboratory work, field demonstrations in Canberra
2	fri	Jun 30	Field tour Canberra - South Coast - Canberra (ecology, species)
	sat	Jul 1	Field tour Canberra - South Coast - Canberra (ecology, species)
	sun	Jul 2	Free day
	mon	Jul 3	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jul 4	Lectures, laboratory work, field demonstrations in Canberra
	wed	Jul 5	Lectures, laboratory work, field demonstrations in Canberra
	thur	Jul 6	Lectures, laboratory work, field demonstrations in Canberra
	fri	Jul 7	Lectures, laboratory work, field demonstrations in Canberra
3	sat	Jul 8	Free day
	sun	Jul 9	Free day
	mon	Jul 10	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jul 11	Lectures, laboratory work, field demonstrations in Canberra
	wed	Jul 12	Depart for tour, overnight Bathurst
	thur	Jul 13	On tour, overnight Katoomba
4	fri	Jul 14	On tour, arrive Sydney, overnight Sydney.
	sat	Jul 15	Free day in Sydney
	sun	Jul 16	Afternoon travel to Gloucester, overnight Gloucester
	mon	Jul 17	On tour, overnight Taree
	tues	Jul 18	On tour, overnight Port Macquarie
	wed	Jul 19	On tour, arrive Coffs Harbour
	thur	Jul 20	Coffs Harbour area
	fri	Jul 21	Coffs Harbour area, late afternoon plane to Brisbane, overnight Brisbane
5	sat	Jul 22	Free day in Brisbane
	sun	Jul 23	Travel to Gympie in afternoon to Training Wing, Qld. Forestry Department.
	mon	Jul 24	Series of lectures, demonstrations and local field excursions
	tues	Jul 25	Series of lectures, demonstrations and local field excursions
	wed	Jul 26	Series of lectures, demonstrations and local field excursions
	thur	Jul 27	Series of lectures, demonstrations and local field excursions
	fri	Jul 28	Fraser Island excursion?
6	sat	Jul 29	Fraser Island excursion?
	sun	Jul 30	Free day
	mon	Jul 31	Series of lectures, demonstrations and local field excursions
	tues	Aug 1	Series of lectures, demonstrations and local field excursions
	wed	Aug 2	Series of lectures, demonstrations and local field excursions
	thur	Aug 3	Depart on final tour to Mckay/Cairns/Atherton Petford/Darwin
	fri	Aug 4	On tour
	sat	Aug 5	On tour
7	sun	Aug 6	On tour
	mon	Aug 7	On tour
	tues	Aug 8	On tour
	wed	Aug 9	On tour
	thur	Aug 10	On tour
	fri	Aug 11	On tour, overnight Cairns
	sat	Aug 12	Excursion to Barrier Reef, overnight Cairns
8	sun	Aug 13	Morning free, afternoon flight to Darwin from Cairns.
	mon	Aug 14	On tour Darwin, Kakadu, Katherine, Darwin
	tues	Aug 15	On tour
	wed	Aug 16	On tour
	thur	Aug 17	Tour concludes at Darwin, overnight Darwin.
	fri	Aug 18	Final short course evaluation and concluding session. (Possible departures)
	sat	Aug 19	(Departure)

APPENDIX 1b.

Itinerary for Course No. 2 - Temperate Australia

Week	Day	Date	Activity
1	sat	Jan 28	Arrival
	sun	Jan 29	Arrival
	mon	Jan 30	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jan 31	Lectures, laboratory work, field demonstrations in Canberra
	wed	Feb 1	Lectures, laboratory work, field demonstrations in Canberra
2	thur	Feb 2	Lectures, laboratory work, field demonstrations in Canberra
	fri	Feb 3	Field tour Canberra - South Coast - Canberra (ecology, species)
	sat	Feb 4	Field tour Canberra - South Coast - Canberra (ecology, species)
	sun	Feb 5	Free day
	mon	Feb 6	Lectures, laboratory work, field demonstrations in Canberra
	tues	Feb 7	Lectures, laboratory work, field demonstrations in Canberra
	wed	Feb 8	Lectures, laboratory work, field demonstrations in Canberra
3	thur	Feb 9	Lectures, laboratory work, field demonstrations in Canberra
	fri	Feb 10	Lectures, laboratory work, field demonstrations in Canberra
	sat	Feb 11	Free day
	sun	Feb 12	Free day
	mon	Feb 13	Lectures, laboratory work, field demonstrations in Canberra
	tues	Feb 14	Lectures, laboratory work, field demonstrations in Canberra
	wed	Feb 15	Depart for tour, overnight Bathurst
4	thur	Feb 16	On tour, overnight Katoomba
	fri	Feb 17	On tour, arrive Sydney, overnight Sydney.
	sat	Feb 18	Free day in Sydney
	sun	Feb 19	Afternoon travel to Gloucester, overnight Gloucester
	mon	Feb 20	On tour, overnight Taree
	tues	Feb 21	On tour, overnight Port Macquarie
	wed	Feb 22	On tour, arrive Coffs Harbour
5	thur	Feb 23	Coffs Harbour area
	fri	Feb 24	Coffs Harbour area, midday plane to Melbourne, bus to Creswick.
	sat	Feb 25	Free day
	sun	Feb 26	Free day
	mon	Feb 27	Lectures, laboratory work, field demonstrations in Creswick
	tues	Feb 28	Continue lectures, lab. sessions and demonstrations in Creswick
	wed	Mar 1	Continue lectures, lab. sessions and demonstrations in Creswick
6	thur	Mar 2	Continue lectures, lab. sessions and demonstrations in Creswick
	fri	Mar 3	Excursion to foothills forests
	sat	Mar 4	Return to Creswick
	sun	Mar 5	Free day
	mon	Mar 6	Continue lectures, lab. sessions and demonstrations in Creswick
	tues	Mar 7	Continue lectures, lab. sessions and demonstrations in Creswick
	wed	Mar 8	Continue lectures, lab. sessions and demonstrations in Creswick
7	thur	Mar 9	Continue lectures, lab. sessions and demonstrations in Creswick
	fri	Mar 10	Continue lectures, lab. sessions and demonstrations in Creswick
	sat	Mar 11	Free day
	sun	Mar 12	Free day
	mon	Mar 13	Depart on extended tour of Victoria and Tasmania.
	tues	Mar 14	On tour
	wed	Mar 15	On tour
8	thur	Mar 16	On tour
	fri	Mar 17	On tour
	sat	Mar 18	On tour
	sun	Mar 19	On tour
	mon	Mar 20	On tour
	tues	Mar 21	On tour
	wed	Mar 22	On tour
thur	Mar 23	Tour concludes in Melbourne, Melbourne overnight.	
fri	Mar 24	Final Short course evaluation and concluding session, Univ. Melb. (Departures)	
sat	Mar 25	(Departures)	

APPENDIX 1c.

Itinerary for Course No. 3 - Arid and Semi-arid Australia

Week No	Day	Date	Activity
1	sat	Jun 23	Arrival
	sun	Jun 24	Arrival
	mon	Jun 25	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jun 26	Lectures, laboratory work, field demonstrations in Canberra
	wed	Jun 27	Lectures, laboratory work, field demonstrations in Canberra
	thur	Jun 28	Lectures, laboratory work, field demonstrations in Canberra
2	fri	Jun 29	Field tour Canberra - South Coast - Canberra (ecology, species)
	sat	Jun 30	Field tour Canberra - South Coast - Canberra (ecology, species)
	sun	Jul 1	Free day
	mon	Jul 2	Lectures, laboratory work, field demonstrations in Canberra
	tues	Jul 3	Lectures, laboratory work, field demonstrations in Canberra
	wed	Jul 4	Lectures, laboratory work, field demonstrations in Canberra
	thur	Jul 5	Lectures, laboratory work, field demonstrations in Canberra
	fri	Jul 6	Lectures, laboratory work, field demonstrations in Canberra
	3	sat	Jul 7
sun		Jul 8	Free day
mon		Jul 9	Lectures, laboratory work, field demonstrations in Canberra
tues		Jul 10	Lectures, laboratory work, field demonstrations in Canberra
wed		Jul 11	Depart for tour, overnight Narrandera
thur		Jul 12	On tour, overnight Dubbo
fri		Jul 13	On tour, overnight Cobar
4		sat	Jul 14
	sun	Jul 15	Free day in Broken Hill
	mon	Jul 16	On tour, overnight Mildura
	tues	Jul 17	On tour, overnight Horsham
	wed	Jul 18	On tour, overnight Murray Bridge
	thur	Jul 19	On tour, overnight Adelaide
	fri	Jul 20	On tour, Adelaide environs with Woods and Forests Dept.
5	sat	Jul 21	Free day in Adelaide.
	sun	Jul 22	Afternoon flight to Perth
	mon	Jul 23	Series of lectures, demonstrations and local field excursions in Perth
	tues	Jul 24	Series of lectures, demonstrations and local field excursions in Perth
	wed	Jul 25	Series of lectures, demonstrations and local field excursions in Perth
	thur	Jul 26	Excursion to the western goldfields, Kalgoorlie, Esperance, Perth
6	fri	Jul 27	Excursion
	sat	Jul 28	Excursion
	sun	Jul 29	Excursion
	mon	Jul 30	Excursion
	tues	Jul 31	Excursion concludes in Perth
	wed	Aug 1	Series of lectures, demonstrations and local field excursions in Perth
	thur	Aug 2	Series of lectures, demonstrations and local field excursions in Perth
	fri	Aug 3	Series of lectures, demonstrations and local field excursions in Perth
7	sat	Aug 4	Free day
	sun	Aug 5	Free day
	mon	Aug 6	Depart on final tour to Pt. Hedland, Broome, Kununurra, en route Darwin
	tues	Aug 7	On tour
	wed	Aug 8	On tour
	thur	Aug 9	On tour
	fri	Aug 10	On tour
	8	sat	Aug 11
sun		Aug 12	On tour
mon		Aug 13	On tour
tues		Aug 14	On tour
wed		Aug 15	On tour
thur		Aug 16	Tour concludes at Darwin, overnight Darwin.
fri		Aug 17	Final short course evaluation and concluding session. (Possible departures)
sat		Aug 18	(Departure)

AUSTRALIAN NATIONAL UNIVERSITY
DEPARTMENT OF FORESTRY

ADVANCED TREE BREEDING

An intensive short course for practising
tree breeders

Canberra - NOVEMBER 9-18 1988

In November 1988, the Department of Forestry at the Australian National University and the University's commercial managers, (ANUTECH), will host a short intensive course directed to those engaged in tree breeding management and research:

The course is designed to address modern issues in tree breeding and to update skills. The following topics will be included -

1. - Quantitative Analytical Techniques - (2 $\frac{1}{2}$ days)
Most Australian tree breeding programs have passed the introductory phase and require critical quantitative analysis to determine future strategy. The course will provide training in these techniques including least squares, maximum likelihood and best linear prediction analyses of progeny data.
2. - Breeding Systems ($\frac{1}{2}$ day)
The importance of the species breeding system, pollen fly patterns and pollen vectors to seed orchard design and program management.
3. - Modern Breeding Strategies and Development of Breeding Plans (2 $\frac{1}{2}$ days)
Attitudes to tree breeding theory and practice have changed in the past decade. The classical strategy of selection, progeny testing and seed production from naturally pollinated orchards is now under increasingly critical scrutiny. Problems include -
High 'up front' economic costs,
The delay in obtaining returns from orchards,

Seed orchards 'locking in' gains for a decade or more, Contamination and an absence of panmixis in orchards.

In consequence strategies are being modified to incorporate new techniques such as greatly improved clonal propagation and the development of controlled pollination procedures in orchards. These and other strategies will be addressed.

4. - Clonal Forestry ($\frac{1}{2}$ day)
The genetic problems associated with clonal forestry. Documentation and control of clonal forestry.
5. - Experimental Design ($\frac{1}{2}$ day)
The need to integrate breeding strategies with progeny testing; the establishment of suitable field layouts and their analysis.
6. - Economic analysis of Breeding Programs (1 day)
Economic analysis of breeding (and other) programs including training in the use of spreadsheets for economic analysis.
7. - Modern Statistical Approaches and the use of Non-Parametric Statistical Techniques ($\frac{1}{2}$ day)
There will be some coverage of the uses of newly developed statistical techniques (e.g. 'bootstrapping').

Non-parametric statistical techniques are not commonly used in forestry but do have application especially in the analysis of subjective assessments, of rankings and of non-normal distributions. They are in the armoury of most microcomputers
8. - Isozyme analysis ($\frac{1}{2}$ day)
The study of isozymes allows tree breeders to assess variation patterns, to study breeding systems and monitor many artificial and natural genetic processes. The course will cover the procedures used for isozyme study and the analytical procedures used to interpret the data.
9. - Environmental matching ($\frac{1}{2}$ day)
Recent developments in environmental matching and prediction of species and provenance performance

10. Miscellaneous

Many of the exercises will use microcomputers. The course will include intensive introductory training in their use with the emphasis on the use of spreadsheets

LOCATION AND LECTURING STAFF

The course will be conducted in the Department of Forestry at the Australian National University by staff from the University Departments of Forestry, Statistics and ANUTECH and from CSIRO. The following have already indicated their willingness to contribute - Dr M.U.Slee (Course Director), Dr. N Byron, Dr. J. Douglas, Dr B. Turner, Dr K. R. Shepherd, Dr R. Cunningham, Dr C. Matheson, Dr T Booth, Dr P. Cotterill, Ms. C Dean and Dr G. Moran. (Other lecturers will also be involved.)

NUMBER OF PARTICIPANTS AND CONDUCT OF THE COURSE

There will be a limit of approximately 20 participants¹ and there will be a series of tutorials and workshops rather than formal lectures. Each days' program will usually occupy 6-7 hours, exclusive of lunch and tea breaks. There will be one free day during the weekend and probably at least one field day. The exercises will use actual field data as far as is possible and participants are welcome to bring data for analysis from their own programs.

TIMING OF THE COURSE

Commencement will be 9 am on Wednesday 9th November and participants may need to arrive in Canberra on Tuesday 8th. The course will conclude by 3 pm on Friday 18th.

Please note there will be a meeting of the Australian Tree Breeding Working Group at Gympie, Queensland from October 31st - November 4th and the course will be followed by a major conference involving several associated IUFRO groups in Bangkok commencing November 28th.

¹ If there is sufficient demand it may be possible to repeat the course early in 1989

COST AND ACCOMMODATION

The cost of the course will be A\$1400, including course notes, use of computers, provision of computer discs, local transport, field trip(s), lunches and a formal dinner but exclusive of accommodation.

Single room motel accommodation has been arranged for use as required at an additional daily cost of approximately A\$50, Bed and Breakfast

資料 19

AUSTRALIAN NATIONAL UNIVERSITY

FORESTRY PLANNING AND MANAGEMENT
COURSE

Conducted by

DEPARTMENT OF FORESTRY

26 September to 2 December 1988

ANUTECH PTY LTD

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PART 1 : COURSE INFORMATION

1. THE COURSE FOR 1988

The Department of Forestry at the Australian National University, is again conducting a specialized training program in Forestry Sector Analysis, Planning and Project Management. This course was run in 1986 and 1987 and was attended by participants from Asia, Pacific and Africa. As with previous courses, the 1988 course incorporates improvements suggested by participants in their evaluation and takes account of the latest developments in forestry sector planning and management.

Specialized staff of the Department of Forestry have developed this course so it brings together theoretical and practical issues directed to the needs of middle to senior forestry managers and planners from developing countries. The course is not country specific but covers a range of fields likely to be met by professionals in the necessarily complex world of forestry. It is designed to assist managers plan effectively for the twenty-first century. The professional quality of the courses lends itself to support from bilateral and multilateral agencies offering financial assistance in the development of professional staff skills.

2. INTRODUCTION TO THE COURSE

Duration : 10 weeks - Monday 26 September - Friday 2 December 1988.

The course is directed to the needs of middle to senior level forestry planners and managers. It is *not* intended to be a course in silviculture, forest biology or the management and administration of a forest reserve. It will assume a sound background in the technical aspects of forestry and will aim to build on this knowledge to develop the skills needed to identify, plan, implement and manage viable and useful forestry projects. This focus will be set within the broad framework of national or regional socio-economic development planning, taking social, ecological and political factors into account.

Considerable emphasis will be placed on the financial and economic analysis of forestry projects, highlighting social, environmental and intersectoral analysis. A major part of the course will also be devoted to the development of coherent forest sector strategies consistent with national economic, social and political goals. At the same time, the linkages between the forest sector, domestic industry and international trade will be examined, including methods of analyzing the demand for forest products.

Community involvement in design, implementation and monitoring of projects will be covered, with emphasis on mixed forestry projects such as agroforestry, watershed management and small-scale forest farming.

Participants will become proficient with financial calculators and microcomputers, which will be used in a range of case studies to give practical experience of these techniques.

Each participant will have the opportunity to explore a particular aspect of forestry sector planning, project design or management by applying newly acquired tools and techniques to his/her own data. These special individual studies will form the basis for seminar presentations at the end of the course.

2.1 Course Outline

Part 1 - Forestry and Development

Introduction to Economic Development

- world trade and development - an historical perspective
- definitions, objectives, approaches
- growth and equity
- rural development in the national economy

Forestry In the World Economy -

- nature of forest resources
- marketing and trade in forest products
- trends in the use of forest products
- non-industrial uses of forest products
- causes of tropical deforestation

Forestry In the National Economy

- national economic policy and the forestry sector
- sectoral planning in a mixed economy
- Inter-sectoral links of special significance to forestry - agriculture, industry, transport, education, National Parks

Forestry in Rural Development

- strategies of rural development including industrial development policies and forest products
- integration of national, regional and local level planning in forestry
- approaches to forestry development
- management for multiple and sustainable use of forest resources at local and national levels

Forestry in Tropical Ecosystems

- ecological and social impacts of forest utilization
- tropical plantations and sustaining productivity

Part II - The Project Cycle in the Forestry Sector

Introduction to the Project Cycle

Information Requirements for Forestry Projects

- introduction to management information systems
- survey methods including rapid rural appraisal
- new approaches to forest inventory
- remote sensing and mapping
- other sources of information

Project Identification and Formulation

- logical framework
- local and regional participation in project identification
- project design options - objectives, scale, technology

Project Appraisal

Technical Feasibility

- Financial appraisal
 - discounted cash flow analysis (A Sharp EL733 financial calculator will be given to each participant)

Demand Analysis for Project Output

- Economic Analysis
 - identification of costs and benefits (direct and indirect)
 - cost benefit analysis including shadow pricing and dealing with risk and uncertainty
 - social and environmental impact assessment

Implementation and Management

- project scheduling including an introduction to network analysis and critical path methods
- risk and uncertainty in project implementation - planning for flexibility
- project management including personnel management
- management of associated research programs

Monitoring and Evaluation

- role of monitoring and evaluation in forestry projects
- monitoring and evaluation methods
- administrative structures for monitoring and evaluation
- the "politics" of evaluation

Part III - Computing

Participants will be introduced to the application of computers in the analysis and planning of forestry projects using:

- spreadsheet programs
- database programs
- project scheduling programs

No prior knowledge of computing is necessary and teaching will be in small groups divided on the basis of experience. IBM PC machines will be used for teaching.

Participants should bring with them any data or problem they would like to use for computer applications. It can be printed data, on IBM or Apple format disks (as a text file or ASCII file).

It is important that computer data be printed out as well as on disk/tape.

Other microcomputer programs will be available for participants with specialist needs (e.g. survey analysis, statistics).

Part IV - Field Trips

Field study visits will form an integral part of the Course and will be designed to illustrate aspects of the planning, implementation and evaluation of Australian forestry projects. There will be two main field study trips during the course:

- 1) New South Wales South Coast - Eden Bombala: large scale clear-felling of natural forests for wood chip exports, with natural regeneration.
- 2) Tumut/Albury/Wagga Wagga: exotic industrial plantations and high technology processing.

In addition there will be a visit to the Snowy Mountains and shorter study and sightseeing trips around the Canberra region, including a visit to a private farm engaged in agro-forestry and to Stromlo Pine Forest.

Part V - Seminars

Each participant will be expected to present two seminars during the course:

- 1) a brief description of the forestry sector in his/her country and an outline of the type of forestry program with which he/she is associated;
- 2) an opportunity for each participant to summarize and integrate concepts and techniques developed during the Course through applying these to a specific area of study chosen by individuals in consultation with course staff.

2.2 Teaching Methods

The course will begin with an orientation program to assist participants settle into Australia.

Teaching methods will comprise a mixture of lectures, seminars/discussions, practical work, case studies and field studies. Computing tuition will be in small groups and tutorials will be available in other subject areas as required. Participants will be encouraged to interact informally among themselves, with staff and with other forestry students.

3. DETAILS OF COURSE FEES

TOTAL FEE: A\$16,000 (approximately US\$11,000) comprises:

Course Fee: A\$9,500

This fee covers:

- a comprehensive orientation program
- all tuition costs
- field studies
- all course materials including stationery, textbooks, reading materials, lecture notes, and computer materials
- access to several microcomputers dedicated to the course
- all course-related transport within Australia
- a Sharp EL733 financial calculator
- formal opening and closing functions and certificate presentation
- liaison with Australian diplomatic posts overseas on visa matters.

Accommodation and Allowance Fee: A\$6,500

This fee covers:

- single accommodation at University House, on the University Campus
- use of a kitchen for cooking meals
- a daily meal and incidental allowance of average A\$40 (approximately US\$28)
- accommodation on field study trips
- an establishment allowance of A\$200
- one day's accommodation in transit in Sydney when leaving Australia
- Australian arrival and departure taxes
- health and ambulance insurance
- 25kg unaccompanied baggage allowance on leaving Australia.

Details of the Procedure for remitting fees will be advised after acceptance of participants.

The fees do not cover airfares to and from Canberra Airport. These must be arranged by the sponsoring organization.

Spouses or family of participants cannot be accommodated.

3.1 Application

Organizations and persons interested in the Course are asked to *register* an expression of interest together with telephone number, telex number, contact person and address *as soon as possible to ensure they are best informed of further course details and any possible restrictions on places.* An application form is attached. Applications close in Canberra on 31 July 1988.

3.2 Qualifications

Participants should:

- hold a degree in forestry or allied discipline
- be working in a planning/management capacity in the forestry sector
- preferably be in the age group 25 to 40 years. Applicants outside this range will be considered in special circumstances
- be sufficiently fluent in English to participate in a University course at a post-graduate level. Pre-course English tuition will NOT be available
- have a reasonable facility in mathematics. This is not essential but will be an advantage

3.3 Obtaining Funding

It may be possible to get funding for places on this course from the Australian Aid Program through the normal channels in your own country.

Australia allocates development assistance training funds to each country on a year-by-year basis. The decisions on how this money will be utilized are made by each country in consultation with the Australian Government. Nominations for Australian funding must therefore come through the official training aid administration agency in your country (e.g. Department of Technical and Economic Co-operation in Thailand, Scholarships Committee of NEDA in Philippines).

The official aid agency will then assess priorities of nominations, including those for other training in Australia and make requests to Australia for funding.

It is therefore important that you begin discussions immediately with the appropriate organization in your country if your organization wishes to request Australian funding.

If you do not know how to proceed, contact the Development Assistance section of the Australian Embassy or High Commission in your country, who will tell you how to apply.

4. FURTHER INFORMATION

For any additional information on the course contact:

Ms Lyndsay Kidd

or

Neil Byron

Program Co-ordinator

Course Director

ANUTECH Pty Ltd

Department of Forestry

GPO BOX 4

GPO BOX 4

Australian National University

Australian National University

CANBERRA, ACT 2601

CANBERRA, ACT 2601

AUSTRALIA

AUSTRALIA

Telephone (062) 492455

(062) 492539

Telex AA62760 Natuni

AA61670

Fax (062) 571433

(062) 498377

PART II : INFORMATION TO PARTICIPANTS

5. TRAVEL AND ACCOMMODATION

5.1 Travel Arrangements and Visas

All participants should contact their Australian High Commission or Embassy as early as possible in order to *lodge a student visa application* and carry out any necessary associated procedures as directed, e.g. medical checkups, etc.

Participants funded from sources outside Australia (FAO/UNDP, Asian Development Bank, etc) should arrange their own air travel to and from Canberra in association with sponsors. Please arrange to arrive in Canberra on Saturday 24 or Sunday 25 September and advise Ms Lyndsay Kidd, ANUTECH, of your flight numbers and scheduled arrival time in Canberra so you can be met at Canberra airport. You should plan to depart Sydney on 3 or 4 December and *we strongly recommend that you make these bookings as soon as possible* as flights are often full at that time of year. *Before leaving your country please ensure your air tickets include confirmed flights home.* Participants funded by the Australian Government will have air travel from their national capital city to Canberra and return arranged and prepaid through the Development Assistance Section of the Australian Embassy or High Commission. They will tell you where to collect your air tickets.

The Course will officially open on Monday 26 September and close on the evening of Thursday 1 December, allowing a day for departure preparations. Extension of stay in Australia beyond Sunday 4 December will be at your own expense and must be approved by your Government *before* departure for Australia.

5.2 Medical/Insurance Cover

While in Australia you will be eligible for health care benefits under the Australian Government Medicare Scheme. This entitles you to a refund of 85 per cent of the scheduled fee charged by private doctors or free treatment by government doctors. There is no charge for public hospital treatment in Australia. Medicare does *not* cover treatment for pre-existing medical conditions, dental or optical expenses.

Your course fee includes a subscription to the ACT Ambulance Service which provides free ambulance transport in emergencies.

5.6 Allowances

For the duration of the course you will receive an allowance of average A\$40.00 per day. This amount will cover breakfast, lunch, dinner and incidental expenses. A bank account will be opened for you and your allowance will be credited to this account fortnightly in advance. In addition, you will receive an establishment allowance of A\$200 which will be paid into your bank account before you arrive.

Although costs are higher in Australia than in Asia and the Pacific, the living allowance will be enough for meals and necessary incidentals and leaving some money for other expenditure. You need not bring much money with you.

You will be provided with any stationery, textbooks and other reading material needed during the Course.

5.7 Accommodation and Meals

You will be accommodated in a single bedroom in University House, ten minutes' walk from the course venue. All rooms are equipped with desk, handbasin, refrigerator, telephone, toaster and tea-making facilities. You will have access to a communal kitchen, bathroom and laundry facilities and large common rooms.

The group will also be given exclusive use of a common room and a small kitchen which is equipped with cooking and eating utensils. Most groups decide to cook meals on a communal basis and share duties on a roster system. This usually works well and experience has shown that the food is cheaper, and often better than that available at restaurants. The best place to purchase fruit, vegetables, meat, fish, etc, is the Belconnen market which is accessible by bus. The University has its own small grocery shop and in addition there are supermarkets in Civic, to which you can walk or catch a bus.

Alternatively, you may purchase meals in the University House Cellar or Bistro, in canteens around the University campus, or at retail outlets around Canberra. Costs for food vary depending on the type and amount of food chosen and whether it is taken away or eaten at the restaurant. An adequate lunch may be purchased for \$A2-\$A5. A more substantial evening meal is likely to cost \$A8-\$A12. On Wednesday evenings a special University House dinner is served in the hall and the course will pay for you to attend this each week.

6. COURSE EQUIPMENT AND INFORMATION

6.1 Computing and Data Management

Participants will be introduced to the application of computers in the analysis and planning of forestry projects using:

- spreadsheets programs
- database programs
- project scheduling programs

No prior knowledge of computing is necessary as teaching will be in small groups divided on the basis of experience. You will be able to proceed at your own pace and people who are interested will be given the opportunity to do more advanced work. IBM PC machines will be used for teaching.

You should bring with you any data or problem you would like to use for computer applications. It can be printed data, on IBM or Apple format disks (as a text file or ASCII file).

It is important that computer data be printed as well as on disk.

Other microcomputer programs are available for use by participants with specialist needs (e.g. survey analysis, statistics).

6.2 Seminars

Each participant will be expected to present two seminars during the course:

- 1) early in the Course - a brief description of the forestry sector in your country including the type of forestry program you are associated with;
- 2) during the last two weeks of the Course - the application of Course concepts/techniques to a specific area of study chosen by individual participants in consultation with course staff.

Please bring with you any materials you might want to use for these seminars. These could include visual aids such as maps, photographs, and slides plus copies and/or summaries of National Development Plans, Statements of Forestry Development Plans, Forest Service Annual Reports and details of one or two specific forestry projects.

These will also be useful as resource materials for discussions throughout the course and on departure you might consider contributing them to our course library for reference by future course participants.

6.3 Field Trips

Field study visits form an integral part of the Course and are designed to illustrate aspects of the planning, implementation and evaluation of Australian forestry projects. There will be two main field study trips during the course:

- 1) New South Wales Coast - Eden/Bombala: large scale clearfelling of natural forests for woodchip exports, with natural regeneration;
- 2) Tumut/Albury/Wagga Wagga: exotic industrial plantations and high technology processing.

In addition there will be a visit to the Snowy Mountains and shorter study and sightseeing trips around the Canberra region, including a visit to a small scale agro-forestry project.

While on field trips your transport costs will be met by the course and accommodation will be provided in motels or hotels.

6.4 Calculators

All course participants will be given a Sharp EL733 financial calculator for use during the course and to take back home. It is therefore unnecessary to bring a calculator with you.

7. OTHER POINTS TO CONSIDER

7.1 Mail

Please arrange to have mail sent to you as follows:

C/- University House

GPO Box 1535

CANBERRA ACT, 2601 AUSTRALIA

Do not send mail to the Department of Forestry or ANUTECH

Air mail rates from Australia to Asia and the Pacific are:

Aerograms \$0.53

Airmail letters (up to 20g) \$0.70

Small packets (250g-500g) \$6.30

7.2 Telephone

Your room in University House will have a telephone on which it will be possible for you to dial direct to your home country. *This is very expensive*, however, and *you will be responsible for paying the costs*. The cheapest way to call overseas direct from Canberra is on a public phone box with international subscriber dialing facilities. You will be given details of this system when you arrive.

7.3 Weather

October-December are spring/summer months, when Canberra's weather gradually becomes warmer. While you are in Canberra, temperatures will fall to around 8°C at night and will reach a maximum of 16°C to 27°C during the day. Rain is usually infrequent but the weather is unpredictable.

7.4 Clothing

Only informal clothing will be needed during most of the course. Jeans are acceptable and ties are not worn. Some warm clothing will be useful e.g. a jacket or jumper will be needed during the early part of the course, in the evenings and on field trips. You should bring suitable footwear for field visits to forestry projects and the visit to the Snowy Mountains. In the latter part of the course, light clothing will mainly be worn. There will be one or two occasions when semi-formal dress will be appropriate or national dress could be worn if you wish.

As clothing is generally expensive in Australia, you should bring with you all the clothing you will need.

ANUTECH Pty Ltd
GPO Box 4
Australian National University
CANBERRA ACT 2601
AUSTRALIA

APPLICATION FOR ADMISSION TO THE NON-DEGREE
COURSE IN FORESTRY PLANNING AND MANAGEMENT

SECTION A

Mr Mrs Miss Ms Other

PLEASE PRINT:

SURNAME OR FAMILY NAME

OTHER NAMES IN FULL

ADDRESS: _____

Telephone No: _____

Telex No: _____

Fax No: _____

DATE OF BIRTH:

Day Month Year

SEX:

M

F

CITIZENSHIP: _____

OCCUPATION: _____

POSITION: _____

SINCE: _____

BUSINESS ADDRESS: _____

TELEPHONE NO: _____

NAME OF EMPLOYER: _____

SECTION B

PLEASE SPECIFY FUNDING AGENCY: _____

SECTION C

Please give details of academic courses completed or in progress

Degrees	Complete/in progress	Institution	Year
Diplomas			
Non degree			

Describe your current work in detail:

LANGUAGE ABILITY:	Speak	Read	Write
First Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second Language.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Languages.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Written work (e.g; reprints, unpublished theses, essays or papers):

Give names and addresses of three people who can speak with first hand knowledge of your qualifications and work experience:

DECLARATION : To be signed personally by the applicant.

I certify that I have read and understood the questions on this form. The answers given are true and complete in every particular.

I understand that the giving of false or incomplete informations may lead to refusal of the application or cancellation of enrolment.

Signature Date

H.G. Kershaw Pty Ltd
PO Box 84, Terry Hills NSW 2084
Telephone (02) 4502444. Telex 75606 KERSHA
Supply: Seed from a large range of Australian
and exotic trees, shrubs, palms and indoor
plants

Kimberley Seeds Pty Ltd -
Division of Australian Revegetation Corporation
51 King Edward Road, Osborne Park WA 6017
Telephone (09) 4454377. Telex 94371 KMSEED.
Fax No. 4453444

Supply: Producers and exporters of exotic and
native tree, shrub and pasture seed. Specialists in
arid and salt land species

Kingston Rural Management Pty Ltd
PO Box 411, Maryborough Qld 4650
Telephone (071) 224144

Supply: Seed of *Leucaena leucocephala* (K8)

Kylisa Native Seed Suppliers
PO Box 175, Weston Creek ACT 2611
Telephone (062) 887408. Telex 62614 (CA85)

Supply: Collectors of tree seed from temperate
Australia. Seed origins and collection strategy
provided as standard practice

Mandehana Seed Service
RMB 939, Woodlup WA 6324
Telephone (098) 541066 International 6198-541066.
Telex 91988

Supply: Wide range of Australian natives
including acacias, banksias, eucalypts and
melaleucas for both arid and high rainfall areas

North Australian Seeds
PO Box 3156, Darwin NT 5790

Supply: Seed of plant species native to the
Northern Territory and northern Western
Australia (north of 18°S)

D Orrell - Seed Exporters
Villa 11, Madeira Gardens
10 Colliway Street, Mt Yokine WA 6060
Telephone (09) 3442290 International 619-3412290.
Telex 92881 PE 258 Orrell

Supply: Seed of a large range of indigenous and
exotic species including many rare species
suitable for arid, temperate and tropical regions

Rovston Peirce Seeds Pty Ltd
PO Box 77, Dural NSW 2158
Telephone (02) 6541186 International 612 6512658
Telex 75572 ROSEED

Supply: Seed of Australian trees and shrubs
mainly from New South Wales

Silvan Improvement Pty Ltd
PO Box 42, Watson ACT 2602
Telephone (062) 411075 or 474328

Supply: Seed from a wide range of trees and
shrubs native to Australia. Provenance details
and germination test results can be supplied

Southern Seed Sales
Rosevears Dr., Rosevears Tas. 7251
Telephone (003) 301284. Telex 58660 LN021

Supply: Seed of Tasmanian native trees and
shrubs, provenance collections made and expert
advice on cold tolerant eucalypts provided.

Tasmanian Forest Seeds
Summerleas Farm, Kingston Tas 7150
Telephone (002) 296387. Telex 58134 (T-Walsh)

Supply: Seed from a wide range of shrubs and
trees native to Tasmania. Provenance collections
can be arranged

Vaughans Wildflower Seeds
PO Box 66, Greenwood WA 6024
Telephone (09) 4099392

Supply: Bulk seed from a wide range of
Australian flora. Provenance details can be
supplied.

Western Wildlife Supply
Terraia Place, PO Box 90, Gilgandra NSW 2827
Telephone (068) 472473 International 6168-472473

Supply: Exclusively eucalypts. Source identified
bulk quantities of a wide range of species can
arrange specialised research collections

J.H. Williams and Sons Pty Ltd
PO Box 102, Murwillumbah NSW 2484
Telephone (066) 724866. Telex 66142.
FAX (066) 724212

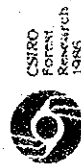
Supply: Seed of tropical and sub tropical trees
and shrubs, including leucaena varieties

Australian Suppliers of Tree Seed

provided with the compliments of
CSIRO, Division of Forest Research
PO Box 4008, Queen Victoria Terrace
Canberra ACT 2600 Australia

A note to potential purchasers -

Most commercial seed collectors can specify the origin of the seed they supply. There is however no tree seed certification scheme operating in Australia and it is recommended that the purchaser ascertain details of the seed origins before entering into any purchase agreement. The minimum details which might be expected are the precise locality of collection including latitude and longitude co-ordinates, altitude of the collecting site, year of harvesting and number of trees sampled. Purchasers should not assume that the seed of eucalypts or other Australian genera will necessarily be supplied from trees growing in Australia. Seed from exotic plantations is now common in the seed trade. The listing of a supplier in this leaflet does not imply endorsement by CSIRO. Catalogues and price lists are available from most suppliers.



Federal Government

Tree Seed Centre
CSIRO, Division of Forest Research
PO Box 4008, Queen Victoria Terrace,
Canberra ACT 2600
Telephone (062) 818211, Telex 62751

Supply: Small quantities of authenticated seed from eucalypts, acacias, casuarinas and other Australian native trees, principally for research

State Governments

Forestry Commission of New South Wales
PO Box 111, Coffs Harbour Jetty NSW 2451
Telephone (066) 528900, Telex 65922

Supply: Seed of a wide variety of Australian and exotic tree species. Specialising in provenance collections of commercially important eucalypts

Queensland Forestry Department
Box 944 GPO, Brisbane Qld 4001
Telephone (07) 2248338, Telex 43988

Supply: Seed of a wide range of tree species, both exotic and native, including improved grades of *Pinus elliptica*, *Pinus taeda*, and *Pinus caribaea* var. *hordlandensis*

Woods and Forests Department South Australia
Box 1604 GPO, Adelaide SA 5001
Telephone (08) 2167211, Telex 82231

Supply: *Pinus radiata* - one grade of seed collected from multiple-thinned plantations over c. 40 years old

Tasmanian Forestry Commission
GPO Box 207B, Hobart Tas 7001
Telephone (002) 306189, Telex Tasfor 57204

Supply: Seed of Tasmanian eucalypts acacias and *Pinus radiata*

Department of Conservation, Forests and Lands
GPO Box 4018, Melbourne Vic 3001
Attn: Silviculture Branch, State Forests and Lands Service
Telephone (03) 6179222, Telex 32636

Supply: Mail orders for seed of trees native to Victoria

Department of Conservation and Land Management
PO Box 104, Como WA 6152
Attn: Forests Division
Telephone (09) 3676333, Telex 94616

Supply: Seed of tree species native to Western Australia

Conservation Commission of the Northern Territory
Arid Zone, PO Box 38496, Winnie NT 5780
Telephone (089) 220211, Telex 85336
Arid Zone, PO Box 1046, Alice Springs NT 5750
Telephone (089) 508211, Telex 81191

Supply: Small quantities of seed from a wide range of species native to the Northern Territory

Private Seed Suppliers

APM-Forests

PO Box 37, Morwell Vic 3640
Telephone (051) 343433

Supply: *Pinus radiata* seed from selectively thinned stands, seed orchards and superior controlled crosses from advanced breeding program. *Eucalyptus regnans* seed from seedling orchards

Australian Seed Co

PO Box 67 Hazelbrook NSW 2779
Telephone (047) 586132 International 6147 586132,
Telex 73749

Supply: Bulk seed of native trees and shrubs and a limited range of exotic species

Australian Tropical Plant Supplies

PO Box 5, Mount Molloy Qld 4880

Supply: Seed of indigenous tropical Queensland trees, chiefly eucalypts, acacias and casuarinas but will quote for special collections of other species

Billabong Seed Supplies

Forest Street, Woodend Vic 3442
Telephone (054) 272588

Supply: Bulk or individual tree provenance seed collections of eucalypts, casuarinas and acacias from southeastern Australia. Eucalyptus camaldulensis from Lake Albacutya a speciality

Dendros Seed Supplies

P.O. Box 320, Tolga, Qld 4882
Telephone: (070) 954559
Telex: AA48486 URECO (Atn Dendros)

Supply: Individual tree or bulk collections from specific provenances of eucalypt and acacia species from sub-tropical and tropical regions of Australia.

Ellison Horticultural Pty Ltd
PO Box 385, Nowra NSW 2541
Telephone (044) 214255, International 6144-214255,
Telex 71849

Supply: Bulk seed collections of Australian shrubs, trees and palms including popular species of eucalypts and acacias. Exotic varieties also stocked

M.J. Farrar Pty Ltd - International Seed Merchants
PO Box 1046, East Nowra NSW 2541
Telephone (044) 217692, Telex 71133

Supply: Seed from an Australian-wide range of native trees and shrubs and some exotic species. Collections made from the south coast of NSW

Flamingo Enterprises Pty Ltd

PO Box 1037, East Nowra NSW 2541
Telephone (044) 216670, Telex 71849

Supply: Provenance seed collections of over 2000 species of native and exotic flora

Forest Seeds Australia

Sales: Tarrantool, RSD Drysdale Vic 3222
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Technical Advice: PO Box 73, Mt Macerdon Vic 3441
Telephone (054) 261583

Supply: Eastern Australian seeds for afforestation and horticulture, specialising in eucalypts and acacias. Bulk quantities supplied including some exotic forage species

H Grant

2 Sandra Place, Dubbo NSW 2830

Supply: Seed of trees and shrubs and (especially those native to western New South Wales)

The Harper Seed Company

PO Box 315, Cannington WA 6107
Telephone (09) 4594257, Telex 95759

Supply: Seed of Australian trees, shrubs, ground covers and climbers in bulk or packet

R Homer

1 Crunty Street, Alice Springs NT 5750
Telephone (089) 528583

Supply: Seed of central Australian trees and shrubs

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PO Box 288, Cleveland QLD 4163
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