

Acknowledgments

Research into the systematics of *Melaleuca* in Canberra, Australia, was initiated by Bryan Barlow to whom credit is given for leading the early studies and demonstrating what a rewarding genus it is for scientific investigations. In the early 1980s, one of us (LAC) began working on the taxonomy of a group of species then considered to belong in *Melaleuca* but now recognised as *Asteromyrtus*, a genus allied to *Agonis*. Subsequently, LAC extended his research into the *M. scabra* group of species, into other parts of the genus and into other concepts within the *Melaleuca* complex. A great many people have assisted these studies through their provision of specimens, companionship and assistance in the field and/or herbarium, hospitality, information on the existence of unusual populations, and so on. These people are too numerous to name individually but we thank them here for their generosity and willingness to go out of their way to help. Special thanks, however, are due to colleagues then and/or currently on the staff of the Australian National Herbarium, notably Bryan Barlow, Kirsten Cowley, Brendan Lepschi, Julie Matarczyk and Frances Quinn.

When this book was conceived, it was evident that no information on essential oils was available for over 90 species, despite the authors, wherever possible, having made a point of collecting foliage samples for distillation and analysis over the years. Funding was provided by the Rural Industries Research and Development Corporation (RIRDC) to enable a dedicated collecting trip to be made in south-western Western Australia in 2010, during which many of the outstanding species were collected for oil analysis. This trip was undertaken by one of us (JCD) and David Lea whose help on this trip and in undertaking several additional collections is gratefully acknowledged. Requests have also been made of people and organisations in a position, potentially, to assist us to obtain samples. In most cases, these requests resulted in the collection of samples, thus enabling analyses to be prepared of most of the missing taxa. These people and/or organisations are numerous and, in some cases, the samples that we received were collected as a result of our request having been passed to other parties. To attempt to name each person individually would result in an incomplete list but we acknowledge with sincere thanks the goodwill and assistance of those who provided samples.

The majority of the photographs in the 'Species accounts' (Chapter 7) were made available to us by the late Ivan Holliday. Thanks are due to the many other people who have contributed photographs; they are named in the photograph credits below. We thank Anto Rimbawanto, Le Dinh Kha and Stephen Midgley for providing information on the utilisation of melaleucas in Indonesia, Vietnam and China, respectively. Peter White provided information on the use of *M. viminea* sticks in the lobster-fishing and vegetable-growing industries in Western Australia. Carl Davies and Nunzio Knerr, both with CSIRO, deserve special thanks. Carl digitised transparencies and prepared the digital files for publication, while Nunzio prepared the distribution maps and generated the species-richness and endemism maps. We thank Christian Doran for his editorial work on the photographs and figures presented in the draft introductory chapters. The passage on the use of melaleucas in bonsai was based on notes written for us by Roger Hnatiuk; it is unfortunate that space limitations prevented further elaboration of this interesting topic. Murray Fagg, Australian National Botanic Gardens, generously permitted us to use his illustrations of floral details of typical *Melaleuca* species (Figures 3 and 4).

We extend special thanks to John Turnbull, Bill Foley, Ian Southwell and Kirsten Cowley for their helpful comments on a draft of this manuscript.

This volume is dedicated to the memories of Ivan Grenfell Holliday (1926–2010) sportsman, plant photographer and author, and Robert John Goldsack (1941–2009) chemist and botanist. Ivan Holliday was keenly interested in *Melaleuca* and produced a volume (with two editions) on the genus. He accompanied Lyn Craven and Brendan Lepschi on a key collecting mission to south-western Western Australia in 1994. Bob Goldsack, who died tragically in 2009, was both a botanist and chemist who greatly contributed for over 20 years to the work on the essential oils of the melaleucas. His tireless work on the chemistry of this genus, as well as his fresh outlook on ‘life, the universe and everything’ is greatly missed by all who came into contact with him.

Photograph credits

Chapters 1–6: In addition to the authors’ contributions, the following persons or organisations provided some or all of the images in the following figures: Figure (Fig.) 1, Christine Doran; Fig. 2, Australian Tree Seed Centre (ATSC); Figs 3 & 4, Murray Fagg; Figs 5, 6, 7 & 8, Liliana Baskorowati; Fig. 11A, Ivan Holliday; Fig. 11B, Wayne O’Sullivan; Fig. 11C, Nathan McQuoid; Fig. 12, ATSC & Forest Science Institute of Vietnam (FSIV); Fig. 13, ATSC & David Lea; Fig. 15A, Frank Zich; Fig. 15B, Murray Fagg; Fig. 16A, Roger Hnatiuk; Fig. 16B, David Sweet; Fig. 17A, Murray Fagg; Fig. 18B, C, D, E, F, Murray Fagg; Fig. 19, FSIV; Fig. 20, Mary Webb; Fig. 23, ATSC; Fig. 26A, Anto Rimbawanto; Fig. 27, Peter Entwistle; Fig. 28, Gary Baker & Liliana Baskorowati.

Species accounts (Chapter 7): The following people and/or organisations provided images for the listed species: David Albrecht: *interioris*; Australian National Botanic

Gardens: *biconvexa* (photo: D. Greig); Liliana Baskorowati: *dissitiflora*; Don Bellairs (Ivan Holliday Image Library): *hollidayi*; Kym Brennan: *citrolens*, *dealbata*, *ferruginea*, *sericea*, *stipitata*; Centre for Australian National Biodiversity Research: *apostiba* (photo: J. Connors); L. Carman (Ivan Holliday Image Library): *tinkeri*; Colin Cornford (Ivan Holliday Image Library): *arcana*, *cornucopiae*, *foliolosa*; Ian Cowie: *triumphalis*; Gil Craig: *johnsonii*, *papillosa*, *pauperiflora*, *pomphostoma*, *ulicoides*; Lyn Craven: *atroviridis*, *megalongensis*, *nematophylla*, *punicea*, *uncinata*, *vinnula*, *zeteticorum*; Mike Crisp: *agathosmoides*, *amydra*, *camptoclada*, *glauca*, *grieveana*, *halophila*, *idana*, *pritzelii*, *sabrina*, *sciotostyla*, *serpentina*; Christine Doran: *armillaris*; Bill Dowling: *nanophylla*; Murray Fagg, Australian National Botanic Gardens: *acacioides*, *alsophila*, *argentea*, *blaerifolia*, *brachyandra*, *cajuputi*, *citrina*, *comboynensis*, *decora*, *densispicata*, *ericifolia*, *faucicola*, *flammea*, *flavovirens*, *formosa*, *globifera*, *groveana*, *leptospermoides*, *linariifolia*, *megacephala*, *micromera*, *minutifolia*, *montana*, *nervosa*, *nodosa*, *pachyphylla*, *paludicola*, *parvistaminea*, *phratra*, *podiocarpa*, *quinquenervia*, *recurva*, *salicina*, *shiresii*, *squamophloia*, *stenostachya*, *stypelioides*, *subulata*, *tamariscina*, *thyoides*, *viminalis*, *violacea*, *virens*, *williamsii*; Andrew Ford: *borealis*, *monantha*, *sylvana*, *uxorum*; Mary Hoggart, Esperance Wildflower Society: *dempta*, *exuvia*, *fissurata*, *linguiformis*, *phoidophylla*, *plumea*, *sparsiflora*, *subalaris*; David Lea: *bisulcata*, *cliffortioides*, *genialis*, *haplantha*, *holosericea*, *protrusa*, *similis*, *urceolaris*; Glenn Leiper: *howeana*; Daniel & Irène Létocart: *dawsonii*, *gnidioides*, *pancheri*, *sphaerodendra*; Nathan McQuoid: *sophisma*; Neil Marriott: *wimmerensis*; Rhonda Melzer: *hemisticta*; Peter Olde: *deanei*; Wayne O’Sullivan: *osullivanii*, *scalena*, *teuthidoides*; Steven & Alison Pearson: *chisholmii*, *lazaridis*, *pearsonii*, *trichostachya*; Joel Plumb: *fluviatilis*; Anne Rick: *lecanantha*, *sculponeata*; Jean-Louis Ruiz: *brongniartii*, *buseana*; Garry & Nada Sankowsky: *polandii*, *pyramidalis*; John Simmons (Ivan Holliday Image Library): *pustulata*; Corin Urquhart: *linearifolia*; Peter White: *eurystoma*; Frank Zich: *stereophloia*, *zonalis*. Ivan Holliday provided all the remaining photographs in this chapter.

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Appendix 1 Oil types by species

Oil types found in the various *Melaleuca* species are based on a broad classification of the composition of the oils found. The basis for each oil type is described in the box below. Summaries of the oil composition of the species are provided in the 'Species accounts' (Chapter 7) and full details are accessible at <<http://aci.gov.au/publication/MN156>>.

#	Species	Oil type
1	<i>M. acacioides</i>	J
2a	<i>M. acuminata</i> subsp. <i>acuminata</i>	A, L
2b	<i>M. acuminata</i> subsp. <i>websteri</i>	C, L

Oil compositions used in the table

Where percentage figures are mentioned, they are to be taken as only approximate values.

A	50–70% 1,8-cineole, <10% each of α -pinene, limonene, α -terpineol
B	20–50% terpinen-4-ol
C	major amounts of terpinolene
D	lemon-scented oils
E	aromatic oils (in the chemical sense)
F	major amounts of E-nerolidol
G	large amounts of α -pinene
H	significant amounts of β -diketones
J	other sesquiterpenic oils
K	significant amounts of linalool
L	other monoterpenoid oils
M	virtually no oil present
X/Y	oil compositions midway between X and Y type oils
(Z)	isolated occurrences of Z type oils but by no means the major oil type
–	no data
#	species number (notional)

#	Species	Oil type
3	<i>M. acutifolia</i>	A
4	<i>M. adnostyla</i>	A
5	<i>M. adnata</i>	L
6	<i>M. agathosmoides</i>	L
7	<i>M. alsophila</i>	G, D, B, A
8	<i>M. alternifolia</i>	A, B, C
9	<i>M. amydra</i>	A
10	<i>M. apodocephala</i>	J/L
11	<i>M. apostiba</i>	A
12	<i>M. araucarioides</i>	G
13	<i>M. arcana</i>	A, B
14	<i>M. argentea</i>	L, F
15a	<i>M. armillaris</i> subsp. <i>akineta</i>	A
15b	<i>M. armillaris</i> subsp. <i>armillaris</i>	A
16	<i>M. aspalathoides</i>	L
17	<i>M. atroviridis</i>	A
18	<i>M. barlowii</i>	L
19	<i>M. basicephala</i>	A
20	<i>M. beardii</i>	G
21	<i>M. biconvexa</i>	J
22	<i>M. bisulcata</i>	K
23	<i>M. blaeriifolia</i>	A
24	<i>M. boeophylla</i>	L

#	Species	Oil type
25	<i>M. borealis</i>	A
26	<i>M. brachyandra</i>	M
27	<i>M. bracteata</i>	E, (J)
28	<i>M. bracteosa</i>	J
29	<i>M. brevifolia</i>	L
30	<i>M. brevisepala</i>	J
31	<i>M. bromelioides</i>	A
32	<i>M. brongniartii</i>	G/L
33	<i>M. brophyi</i>	A
34	<i>M. buseana</i>	C/L
35	<i>M. caeca</i>	A
36a	<i>M. cajuputi</i> subsp. <i>cajuputi</i>	A, F
36b	<i>M. cajuputi</i> subsp. <i>cumingiana</i>	L
36c	<i>M. cajuputi</i> subsp. <i>platyphylla</i>	G, H
37	<i>M. calcicola</i>	B
38	<i>M. calothamnoides</i>	A

Oil compositions used in the table

Where percentage figures are mentioned, they are to be taken as only approximate values.

A	50–70% 1,8-cineole, <10% each of α -pinene, limonene, α -terpineol
B	20–50% terpinen-4-ol
C	major amounts of terpinolene
D	lemon-scented oils
E	aromatic oils (in the chemical sense)
F	major amounts of E-nerolidol
G	large amounts of α -pinene
H	significant amounts of β -diketones
J	other sesquiterpenic oils
K	significant amounts of linalool
L	other monoterpenoid oils
M	virtually no oil present
X/Y	oil compositions midway between X and Y type oils
(Z)	isolated occurrences of Z type oils but by no means the major oil type
–	no data
#	species number (notional)

#	Species	Oil type
39	<i>M. calycina</i>	L, E
40	<i>M. calyptroides</i>	A
41	<i>M. campanae</i>	L
42	<i>M. camptoclada</i>	A
43	<i>M. capitata</i>	G
44	<i>M. cardiophylla</i>	L
45	<i>M. carrii</i>	A, L
46	<i>M. cheelii</i>	G
47	<i>M. chisholmii</i>	A
48	<i>M. ciliosa</i>	K
49	<i>M. citrina</i>	A
50	<i>M. citrolens</i>	A, L, D, E
51	<i>M. clarksonii</i>	J
52	<i>M. clavifolia</i>	L
53	<i>M. cliffortioides</i>	J
54	<i>M. coccinea</i>	J
55	<i>M. comboynensis</i>	A
56	<i>M. concinna</i>	G/J
57	<i>M. concreta</i>	A/B
58	<i>M. condylosa</i>	L
59	<i>M. conothamnoides</i>	L
60	<i>M. cordata</i>	L
61	<i>M. cornucopiae</i>	L
62	<i>M. croxfordiae</i>	A
63	<i>M. ctenoides</i>	A
64	<i>M. cucullata</i>	J
65	<i>M. cuticularis</i>	A
66	<i>M. dawsonii</i>	C/J
67	<i>M. dealbata</i>	J
68	<i>M. deanei</i>	G
69	<i>M. decora</i>	G, L
70	<i>M. decussata</i>	A
71	<i>M. delta</i>	A
72	<i>M. dempta</i>	L
73	<i>M. densa</i>	A
74	<i>M. densispicata</i>	A

#	Species	Oil type
75	<i>M. depauperata</i>	A
76	<i>M. depressa</i>	K
77	<i>M. dichroma</i>	A
78	<i>M. diosmatifolia</i>	A
79	<i>M. diosmifolia</i>	A
80	<i>M. dissitiflora</i>	A, B
81	<i>M. eleuterostachya</i>	L
82	<i>M. elliptica</i>	A
83	<i>M. ericifolia</i>	A, K
84	<i>M. eulobata</i>	A
85	<i>M. eurystoma</i>	L
86	<i>M. eximia</i>	J
87	<i>M. exuvia</i>	A, L, B/K
88	<i>M. fabri</i>	L
89	<i>M. faucicola</i>	A
90	<i>M. ferruginea</i>	L
91	<i>M. filifolia</i>	A
92	<i>M. fissurata</i>	A
93	<i>M. flammea</i>	A
94	<i>M. flavovirens</i>	A
95	<i>M. fluviatilis</i>	L
96	<i>M. foliolosa</i>	B, L
97	<i>M. formosa</i>	A
98a	<i>M. fulgens</i> subsp. <i>corrugata</i>	A
98b	<i>M. fulgens</i> subsp. <i>fulgens</i>	A
98c	<i>M. fulgens</i> subsp. <i>steadmanii</i>	A
99	<i>M. genialis</i>	J/A
100	<i>M. gibbosa</i>	A
101	<i>M. glaberrima</i>	A
102	<i>M. glauca</i>	A, G
103	<i>M. glena</i>	J
104	<i>M. globifera</i>	A
105	<i>M. glomerata</i>	L/J
106	<i>M. gnidioides</i>	L/J
107	<i>M. grieviana</i>	A
108	<i>M. groveana</i>	G

#	Species	Oil type
109	<i>M. halmaturorum</i>	E
110	<i>M. halophila</i>	A, B
111	<i>M. hamata</i>	A/K, B
112	<i>M. hamulosa</i>	J
113	<i>M. haplantha</i>	A/G/J
114	<i>M. hemisticta</i>	A
115	<i>M. hnatiukii</i>	A
116	<i>M. hollidayi</i>	G
117	<i>M. holosericea</i>	A/J
118	<i>M. howeana</i>	J
119a	<i>M. huegelii</i> subsp. <i>huegelii</i>	J/L
119b	<i>M. huegelii</i> subsp. <i>pristicensis</i>	J/L
120	<i>M. huttensis</i>	K
121	<i>M. hypericifolia</i>	A
122	<i>M. idana</i>	A
123a	<i>M. incana</i> subsp. <i>incana</i>	J,A
123b	<i>M. incana</i> subsp. <i>tenella</i>	J
124	<i>M. interioris</i>	L/J
125	<i>M. irbyana</i>	L/J
126	<i>M. johnsonii</i>	A
127	<i>M. keigheryi</i>	A
128	<i>M. kunzeoides</i>	J
129	<i>M. laetifica</i>	A/J
130	<i>M. lanceolata</i>	A/G/J
131	<i>M. lara</i>	A/G
132	<i>M. lasiandra</i>	G
133	<i>M. lateralis</i>	A
134	<i>M. lateriflora</i>	A
135	<i>M. lateritia</i>	J
136	<i>M. laxiflora</i>	A
137	<i>M. lazaridis</i>	A
138	<i>M. lecanantha</i>	A
139	<i>M. leiocarpa</i>	G
140	<i>M. leiopyxis</i>	K, A, J
141	<i>M. leptospermoides</i>	A
142	<i>M. leucadendra</i>	E, A

#	Species	Oil type
143	<i>M. leuropoma</i>	G
144	<i>M. linariifolia</i>	A, B, C
145	<i>M. linearifolia</i>	A
146a	<i>M. linearis</i> var. <i>linearis</i>	A
146b	<i>M. linearis</i> var. <i>pinifolia</i>	A
147	<i>M. linguiformis</i>	A
148	<i>M. linophylla</i>	A
149	<i>M. longistaminea</i>	J
150	<i>M. lutea</i>	J
151a	<i>M. macronychia</i> subsp. <i>macronychia</i>	A
151b	<i>M. macronychia</i> subsp. <i>trygonoides</i>	A
152	<i>M. manglesii</i>	A
153	<i>M. marginata</i>	J
154	<i>M. megacephala</i>	L
155	<i>M. megalongensis</i>	A
156	<i>M. micromera</i>	A

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–	no data
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#	Species	Oil type
157	<i>M. microphylla</i>	A
158	<i>M. minutifolia</i>	J
159	<i>M. monantha</i>	G
160	<i>M. montana</i>	J
161	<i>M. montis-zamia</i>	A, A/G
162	<i>M. nanophylla</i>	H
163	<i>M. nematophylla</i>	G
164	<i>M. nervosa</i>	A/K/J
165	<i>M. nesophila</i>	A
166	<i>M. nodosa</i>	A/B
167	<i>M. ochroma</i>	B
168	<i>M. oldfieldii</i>	A
169	<i>M. orbicularis</i>	K
170	<i>M. ordinifolia</i>	A
171	<i>M. orophila</i>	L
172	<i>M. osullivanii</i>	J
173	<i>M. oxyphylla</i>	A
174	<i>M. pachyphylla</i>	L
175	<i>M. pallescens</i>	G
176	<i>M. pallida</i>	L
177	<i>M. paludicola</i>	A
178	<i>M. pancheri</i>	G/J
179	<i>M. papillosa</i>	G/J
180	<i>M. parviceps</i>	K
181	<i>M. parvistaminea</i>	A
182	<i>M. pauciflora</i>	L
183a	<i>M. pauperiflora</i> subsp. <i>fastigata</i>	L
183b	<i>M. pauperiflora</i> subsp. <i>mutica</i>	L
183c	<i>M. pauperiflora</i> subsp. <i>pauperiflora</i>	A
184	<i>M. pearsonii</i>	A
185	<i>M. penicula</i>	J
186a	<i>M. pentagona</i> var. <i>latifolia</i>	L
186b	<i>M. pentagona</i> var. <i>pentagona</i>	L
186c	<i>M. pentagona</i> var. <i>raggedensis</i>	L
187	<i>M. phoenicea</i>	A
188	<i>M. phoidophylla</i>	A/G

#	Species	Oil type
189	<i>M. phratra</i>	M
190	<i>M. pityoides</i>	A
191	<i>M. platycalyx</i>	A
192	<i>M. plumea</i>	A, A/G
193	<i>M. podiocarpa</i>	J
194	<i>M. polandii</i>	M
195	<i>M. polycephala</i>	A/G
196	<i>M. pomphostoma</i>	A/J
197	<i>M. preissiana</i>	J
198	<i>M. pritzelii</i>	G
199	<i>M. procera</i>	L
200	<i>M. protrusa</i>	A
201	<i>M. psammophila</i>	L
202	<i>M. pulchella</i>	A
203	<i>M. pungens</i>	M
204	<i>M. punicea</i>	J/L
205	<i>M. pustulata</i>	A
206	<i>M. pyramidalis</i>	J
207	<i>M. quadrifaria</i>	J
208	<i>M. quercina</i>	M
209	<i>M. quinquenervia</i>	F, A/J/K
210	<i>M. radula</i>	A
211	<i>M. recurva</i>	A
212	<i>M. raphiophylla</i>	A
213	<i>M. rigidifolia</i>	A
214	<i>M. ringens</i>	A
215	<i>M. rugulosa</i>	A
216	<i>M. ryeae</i>	A
217	<i>M. sabrina</i>	L
218	<i>M. salicina</i>	A
219	<i>M. saligna</i>	J/L
220	<i>M. sapientes</i>	A
221	<i>M. scabra</i>	J
222	<i>M. scalena</i>	A
223	<i>M. sciotostyla</i>	-
224	<i>M. sclerophylla</i>	J/L

#	Species	Oil type
225	<i>M. sculponeata</i>	G/J
226	<i>M. seriata</i>	J
227	<i>M. sericea</i>	G
228	<i>M. serpentina</i>	A
229	<i>M. sheathiana</i>	G
230	<i>M. shiressii</i>	A
231	<i>M. sieberi</i>	G
232	<i>M. similis</i>	A
233	<i>M. societatis</i>	J
234	<i>M. sophisma</i>	J
235	<i>M. sparsiflora</i>	A
236	<i>M. spathulata</i>	A/G
237	<i>M. spectabilis</i>	A
238a	<i>M. sphaerodendra</i> var. <i>microphylla</i>	J
238b	<i>M. sphaerodendra</i> var. <i>sphaerodendra</i>	-
239	<i>M. spicigera</i>	A, K
240	<i>M. squamea</i>	J
241	<i>M. squamophloia</i>	E
242	<i>M. squarrosa</i>	L
243	<i>M. stenostachya</i>	A
244	<i>M. stereophloia</i>	A
245	<i>M. stipitata</i>	D
246	<i>M. stramentosa</i>	J
247	<i>M. striata</i>	A
248	<i>M. strobophylla</i>	G
249	<i>M. styphelioides</i>	J
250	<i>M. subalaris</i>	A/B
251	<i>M. suberosa</i>	A
252	<i>M. subfalcata</i>	A
253	<i>M. subtrigona</i>	L
254	<i>M. subulata</i>	A
255	<i>M. sylvana</i>	G
256	<i>M. systema</i>	K
257	<i>M. tamariscina</i>	G
258	<i>M. teretifolia</i>	A, D

#	Species	Oil type
259	<i>M. teuthidoides</i>	A
260	<i>M. thapsina</i>	J/A
261	<i>M. thymifolia</i>	A
262	<i>M. thymoides</i>	M
263	<i>M. thyoides</i>	L, J
264	<i>M. tinkeri</i>	L, J
265	<i>M. torquata</i>	A
266	<i>M. tortifolia</i>	J, M
267	<i>M. trichophylla</i>	A, C
268	<i>M. trichostachya</i>	A, C
269	<i>M. triumphalis</i>	H
270a	<i>M. tuberculata</i> var. <i>arenaria</i>	J/L
270b	<i>M. tuberculata</i> var. <i>macrophylla</i>	L
270c	<i>M. tuberculata</i> var. <i>tuberculata</i>	J, K
271	<i>M. ulicoides</i>	J
272	<i>M. uncinata</i>	A, B

Oil compositions used in the table

Where percentage figures are mentioned, they are to be taken as only approximate values.

A	50–70% 1,8-cineole, <10% each of α -pinene, limonene, α -terpineol
B	20–50% terpinen-4-ol
C	major amounts of terpinolene
D	lemon-scented oils
E	aromatic oils (in the chemical sense)
F	major amounts of E-nerolidol
G	large amounts of α -pinene
H	significant amounts of β -diketones
J	other sesquiterpenic oils
K	significant amounts of linalool
L	other monoterpenoid oils
M	virtually no oil present
X/Y	oil compositions midway between X and Y type oils
(Z)	isolated occurrences of Z type oils but by no means the major oil type
–	no data
#	species number (notional)

#	Species	Oil type
273	<i>M. undulata</i>	A, L
274	<i>M. urceolaris</i>	A/G/K
275	<i>M. uxorum</i>	J
276	<i>M. venusta</i>	J
277	<i>M. villosisepala</i>	L
278a	<i>M. viminalis</i> subsp. <i>rhododendron</i>	–
278b	<i>M. viminalis</i> subsp. <i>viminalis</i>	A, L
279a	<i>M. viminea</i> subsp. <i>appressa</i>	–
279b	<i>M. viminea</i> subsp. <i>demissa</i>	–
279c	<i>M. viminea</i> subsp. <i>viminea</i>	A/J, J
280	<i>M. vinnula</i>	A, J
281	<i>M. violacea</i>	A
282	<i>M. virens</i>	A
283	<i>M. viridiflora</i>	A, L, E
284a	<i>M. williamsii</i> subsp. <i>fletcheri</i>	A
284b	<i>M. williamsii</i> subsp. <i>synoriensis</i>	A
284c	<i>M. williamsii</i> subsp. <i>williamsii</i>	A
285	<i>M. wilsonii</i>	A
286	<i>M. wimmerensis</i>	A
287	<i>M. wonganensis</i>	A
288	<i>M. xerophila</i>	A
289	<i>M. zeteticorum</i>	A
290	<i>M. zonalis</i>	L

Appendix 2 Species with potential for planting for a variety of uses in different climatic zones

The following species of *Melaleuca* show potential for planting and/or trialling on farms, in saline and other land rehabilitation projects etc. and/or are of value (or potential value) as an essential oils source.

(A) Subtemperate climates

<i>Melaleuca</i> species	Shelterbelts, biodiversity corridors, screens, land rehabilitation etc.	Saline soils	Road verges and parks	Lower rainfall areas	Timber (in the round or sawn timber)/ brushwood fencing ^a	Essential oils/ extractives ^b
<i>acuminata</i>	X	X	X	X	Br	
<i>acutifolia</i>	X	X				
<i>alternifolia</i>	X		X			EO(1)
<i>armillaris</i>	X	X	X			
<i>atroviridis</i>	X	X		X	Br	EO(3)
<i>bracteata</i>	X	X	X	X	Ti	Ex(3)
<i>brevifolia</i>	X	X		X		
<i>citrina</i>	X		X			
<i>concreta</i>	X			X	Br	EO(3)
<i>croxfordiae</i>	X		X			
<i>cuticularis</i>	X	X	X			
<i>decora</i>	X		X			
<i>decussata</i>	X	X				
<i>dissitiflora</i>	X		X	X		EO(1)
<i>elliptica</i>	X			X		

^a Ti = timber; Br = brushwood fencing

^b Essential oils (EO)/extractives (Ex): (1) = plant source for an established industry; (2) = plant source with a high level of potential based on key characteristics; (3) = plant source requiring substantial research and development (growth/oil yield, oil quality/markets) to confirm potential

Note: In a few cases, a species typically, or only, occurs in higher rainfall areas, and typically is planted mainly in such areas. However, the species may also occur in lower rainfall areas and/or be cultivated sparingly in these, in which case its potential for trial and/or broader use in lower rainfall areas is indicated by 'also'.

(A) Subtemperate climates (continued)

<i>Melaleuca</i> species	Shelterbelts, biodiversity corridors, screens, land rehabilitation etc.	Saline soils	Road verges and parks	Lower rainfall areas	Timber (in the round or sawn timber)/ brushwood fencing ^a	Essential oils/ extractives ^b
<i>eleuterostachya</i>	X		X	X		
<i>ericifolia</i>	X	X	X			EO(1)
<i>exuvia</i>	X	X	X	X		EO(3)
<i>glomerata</i>	X	X	X	X		
<i>halmaturorum</i>	X	X	X	X		
<i>halophila</i>		X				EO(3)
<i>hamata</i>	X	X	X	X	Br	EO(3)
<i>hamulosa</i>	X	X		X	Br	
<i>huegelii</i>	X		X	X		
<i>hypericifolia</i>	X					
<i>lanceolata</i>	X	X		also X in NSW, Qld	Ti	
<i>lateriflora</i>	X	X	X	also X		EO(3)
<i>leiocarpa</i>	X			X		
<i>linariifolia</i>	X	X	X			EO(1)
<i>linearis</i>	X					
<i>linguiiformis</i>	X	X				
<i>microphylla</i>	X					
<i>nesophila</i>	X	X	X	also X		
<i>pallescens</i>	X		X			
<i>pallida</i>	X		X			
<i>paludicola</i>	X		X			
<i>parvistaminea</i>	X		X			
<i>pauperiflora</i>	X	X		X		
<i>pentagona</i>	X	X	X			
<i>phoenicea</i>	X		X			
<i>preissiana</i>	X	X	X			

^a Ti = timber; Br = brushwood fencing

^b Essential oils (EO)/extractives (Ex): (1) = plant source for an established industry; (2) = plant source with a high level of potential based on key characteristics; (3) = plant source requiring substantial research and development (growth/oil yield, oil quality/markets) to confirm potential

Note: In a few cases, a species typically, or only, occurs in higher rainfall areas, and typically is planted mainly in such areas. However, the species may also occur in lower rainfall areas and/or be cultivated sparingly in these, in which case its potential for trial and/or broader use in lower rainfall areas is indicated by 'also'.

(A) Subtemperate climates (continued)

<i>Melaleuca</i> species	Shelterbelts, biodiversity corridors, screens, land rehabilitation etc.	Saline soils	Road verges and parks	Lower rainfall areas	Timber (in the round or sawn timber)/ brushwood fencing ^a	Essential oils/ extractives ^b
<i>quadrifaria</i>	X			X		
<i>rhaphiophylla</i>	X		X			
<i>salicina</i>	X		X			
<i>sieberi</i>	X		X			
<i>squarrosa</i>	X	X	X			
<i>stereophloia</i>	X	X				
<i>strobophylla</i>	X	X	X	X		
<i>styhelioides</i>	X	X	X		Ti	
<i>teretifolia</i>	X		X			EO(2)
<i>thyoides</i>	X	X		X		
<i>uncinata</i>	X		X	X	Br	EO(3)
<i>viminalis</i>	X		X	X		
<i>viminea</i>	X		X	X	Ti	
<i>xerophila</i>	X	X		X		
<i>zeteticorum</i>	X	X		X		

(B) Tropical and subtropical climates

Species	Shelterbelts, biodiversity corridors, screens, land rehabilitation etc.	Saline soils	Road verges and parks	Lower rainfall areas	Timber ^a (in the round or sawn timber)	Essential oils/ extractives ^b
<i>acacioides</i>	X	X			Ti	EO(3)
<i>alsophila</i>	X	X			Ti	EO(3)
<i>alternifolia</i>	X		X			EO(1)
<i>arcana</i>	X		X		Ti	EO(3)
<i>argentea</i>	X		X		Ti	EO(3)
<i>bracteata</i>	X	X	X	X	Ti	Ex(3)
<i>cajuputi</i>	X		X		Ti	EO(1)

^a Ti = timber; Br = brushwood fencing

^b Essential oils (EO)/extractives (Ex): (1) = plant source for an established industry; (2) = plant source with a high level of potential based on key characteristics; (3) = plant source requiring substantial research and development (growth/oil yield, oil quality/markets) to confirm potential

Note: In a few cases, a species typically, or only, occurs in higher rainfall areas, and typically is planted mainly in such areas. However, the species may also occur in lower rainfall areas and/or be cultivated sparingly in these, in which case its potential for trial and/or broader use in lower rainfall areas is indicated by 'also'.

(B) Tropical and subtropical climates (continued)

Species	Shelterbelts, biodiversity corridors, screens, land rehabilitation etc.	Saline soils	Road verges and parks	Lower rainfall areas	Timber ^a (in the round or sawn timber)	Essential oils/extractives ^b
<i>dealbata</i>	X	X	X		Ti	
<i>decora</i>	X		X			
<i>densispicata</i>	X	X		X		
<i>irbyana</i>	X					
<i>lanceolata</i>	X	X		X	Ti	
<i>leucadendra</i>	X	X	X		Ti	
<i>linariifolia</i>	X	X	X			EO(1)
<i>nervosa</i>	X	X	X			
<i>pallescens</i>	X		X	also X		
<i>quinquenervia</i>	X	X	X		Ti	EO(1)
<i>sericea</i>	X		X			
<i>sieberi</i>	X		X			
<i>squamophloia</i>	X					
<i>stenostachya</i>	X				Ti	
<i>stipitata</i>						EO(3)
<i>stypelioides</i>	X	X	X		Ti	
<i>tamariscina</i>	X		X			
<i>trichostachya</i>	X		X			
<i>viminalis</i>	X		X	X		
<i>viminea</i>	X		X			
<i>viridiflora</i>	X		X		Ti	EO(2)

^a Ti = timber

^b Essential oils (EO)/extractives (Ex): (1) = plant source for an established industry; (2) = plant source with a high level of potential based on key characteristics; (3) = plant source requiring substantial research and development (growth/oil yield, oil quality/markets) to confirm potential

Note: In a few cases, a species typically, or only, occurs in higher rainfall areas, and typically is planted mainly in such areas. However, the species may also occur in lower rainfall areas and/or be cultivated sparingly in these, in which case its potential for trial and/or broader use in lower rainfall areas is indicated by 'also'.

In addition to the 'Notes' accompanying the 'Species accounts' (Chapter 7) in this publication, the following references were consulted in preparing Appendix 2: Doran and Turnbull (1997); Elliot and Jones (1982, 1993); Marcar and Crawford (2004); Wrigley and Fagg (1993); Holliday (2004).

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