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Plants Resistant To Dieback

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Phytophthora cinnamomi, the fungus which causes dieback, affects a large range of plant species throughout the world.

Most research has been confined to commercial plant species, so the known range of ornamental plants resistant to the disease is very restricted.

When a disease becomes as well known as dieback, and when its visible symptoms are similar to those of a wide range of other problems, it is natural that the death of a tree or shrub in the garden should often be attributed to it. In some cases, this casual diagnosis may be correct, but in others it may be completely inaccurate.

Dieback is prevalent in the Darling Range and low lying areas abutting the scarp or surrounding swamps. Introduced soils have been widely used in metropolitan gardens to improve the fertility and moisture-holding capacity of the infertile sand for many years, and may have spread the disease over a fairly wide area. Nurseries have also unsuspectingly sold contaminated stock.

Artificial watering creates optimum conditions for the spread of *Phytophthora cinnamomi* in home gardens, yet infection is usually confined to an isolated tree or shrub. One of the reasons for this is the vertical drainage pattern of metropolitan sands. The ability of plants under good cultural conditions to produce a strong, vigorous root system which can balance the rate

of infection could also be a contributing factor. In deep sands and good drainage, spread of the disease tends to be confined to the movement of contaminated material and soil into healthy areas and by contact between diseased and healthy roots.

Low-lying situations and the heavier soils of the Darling Range are more prone to the spread of the fungus, and in these localities, selection of dieback resistant species is more important.

The following list of native plants resistant to *Phytophthora cinnamomi* has been compiled from a literature search and by assessing replanted dieback sites. These plants have been available in the past from native plant nurseries but since production is based on public demand some species may no longer be grown.

The range and variety of species known to be resistant is restricted because of the limited amount of research on this subject. In areas severely affected by dieback, the choice of plants should be restricted to those appearing on this list. In areas not severely affected, plants which have been noticed growing in similar situations in established gardens could be grown. In the deep sands of the metropolitan area, the extensive range of plants which are normally grown can still be used. If a plant is killed by *Phytophthora cinnamomi*, a resistant species from the list can then be selected.

TREES

COMMON NAME	BOTANICAL NAME	STATE OF ORIGIN	APPROX. HEIGHT METRES	DESCRIPTION
cootamundra wattle	<i>Acacia baileyana</i>	NSW	5	Small tree with bipinnate blue green foliage and dense racemes of yellow globular flower heads.
silver wattle	<i>Acacia dealbata</i>	NSW, VIC, TAS	20	Smooth-trunked tree with silvery patches on trunk and branches and silvery blue foliage. Lemon, globular flower heads in terminal racemes.
early black wattle	<i>Acacia decurrens</i>	NSW	15	Fast growing tree with dark green, fern-like foliage and axillary racemes of deep golden yellow globular flower heads.
white sallow wattle	<i>Acacia floribunda</i>	QLD, NSW, VIC	5	Small spreading tree with strongly scented cylindrical pale-yellow flower heads. Foliage oblong and narrow.
sallow wattle	<i>Acacia longifolia</i>	NSW, VIC, TAS, SA	6	Small spreading tree with bright yellow cylindrical flower heads. Foliage oblong and narrow.
golden wattle	<i>Acacia pycnantha</i>	NSW, VIC, SA		Small tree or tall shrub with prolific yellow flowers in Aug/Oct.
native willow	<i>Acacia salicina</i>	QLD, NSW, VIC, SA, WA	5	Small tree or tall shrub with pendular branches and racemes of pale yellow globular flower heads. Foliage oblong and narrow.
western wattle /coojong	<i>Acacia saligna</i>	WA	5	Small tree or tall shrub with sometimes pendular branches and axillary racemes of golden yellow globular flower heads. Foliage oblong and medium to narrow.
WA peppermint	<i>Agonis flexuosa</i>	WA	10	Long lived tree with drooping willow-like, soft green foliage.
juniper myrtle	<i>Agonis juniperina</i>	WA	5	Moisture loving tree or tall shrub with small rigid deep green foliage and terminal, globular heads of white flowers.
cape wattle	<i>Albizia lophantha</i>	WA	5	Fast growing, short lived small tree with fluffy yellow green flowers.
smooth-barked apple	<i>Angophora lanceolatus</i>	QLD, NSW	15	Attractive, shady tree with seasonal tan coloured bark, wind-firm limbs and dense, mid-green foliage. Flowers July/Aug.
crimson bottlebrush	<i>Callistemon citrinus</i>	QLD, NSW, VIC	5	Small tree or tall shrub with arched or pendulous branches and large scarlet flowers. A number of cultivars have been propagated from the variants of this species and can be tried.

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willow bottlebrush	<i>Callistemon salignus</i>		5	A small tree or tall shrub usually with cream flowers. However a number of cultivars from pink to red are available.
Moreton Bay chestnut	<i>Castanospermum australe</i>	QLD, NSW	10	Small dense tree with dark glossy leaves and orange-yellow pea-shaped flowers. Frost tender and requires moisture throughout the summer.
river sheoak	<i>Casuarina cunninghamiana</i>	NT, QLD, NSW	20	Tall erect picturesque fast growing tree suitable for windbreaks or decorative purposes.
swamp sheoak	<i>Casuarina obesa</i>	WA	10	Salt resistant tree which tolerates swamp conditions. Dull grey green foliage.
powderbark	<i>Eucalyptus accedens</i>	WA	15	Attractive tree with blue-grey foliage and a talc-like pale salmon powdered stem after bark is shed, fading to white.
brown mallet	<i>Eucalyptus astringens</i>	WA	12	Shady tree which tends to produce multi-stems. Mid-green foliage and is noted for brown, smooth bark with tannin content. Produces honey and usable timber.
bangalay	<i>Eucalyptus botryoides</i>	NSW, VIC	30	Erect shade tree with dense foliage. Flowers Jan/March.
marri	<i>Eucalyptus calophylla</i>	WA	30	Large, shady tree with fibrous bark and large leaves. Masses of white flowers Jan/Feb. Large round fruit, the variety <i>rosea</i> has pink flowers.
river gum	<i>Eucalyptus camaldulensis</i>	QLD, NSW, VIC, SA, WA, NT	15	Vigorous growth in early stages, with moderately dense mid-green foliage and smooth white bark. Flowers Sept/Oct. Good honey producer.
argyle apple	<i>Eucalyptus cinerea</i>	NSW, VIC	10	A dense compact low-branching tree with permanent silvery-blue foliage. The bark is rough brown and fibrous. The juvenile orbicular foliage is persistent but changes to a typical eucalypt shape.
lemon-scented gum	<i>E. citriodora</i>	QLD	30	Tall, erect, smooth barked tree with a sparse crown. Prone to drop branches and should not be planted in frequented areas or car parks.
sugar gum	<i>E. cladocalyx</i>	SA	20	Tall, shady, smooth barked tree. Moderately quick growing, leaves can be toxic to stock (especially horses) in spring. Good honey producer.
dwarf sugar gum	<i>E. cladocalyx var. nana</i>	SA	8	Small growing form of the above tree with similar characteristics.

COMMON NAME	BOTANICAL NAME	STATE OF ORIGIN	APPROX. HEIGHT METRES	DESCRIPTION
Bald Island marlock	<i>E. conferruminata</i> formerly <i>E. lehmannii</i>	WA	10	Small tree with smooth bark and dense leafy crown. Unusually clustered lemon-coloured flowers.
yate	<i>E. cornuta</i>	WA	15	An attractive tree with distinctive smooth grey bark on the upper branches and rough beneath. Bright yellow flowers and form make this an attractive tree.
red flowering gum	<i>E. ficifolia</i>	WA	10	Rough brown bark and dense green foliage. Famous for its masses of brilliant red, orange or pink flowers in Dec/Jan.
fuchsia mallee	<i>E. forrestiana</i>	WA	4	Decorative mallee with thick, glossy green leaves and yellow pendulous flowers and red capsules. Dec/Mar.
blue mallet	<i>E. gardneri</i>	WA	10	Rapid growing, small tree with typical mallet stems and blue-grey foliage. Flowers May/June.
Tasmanian blue gum	<i>E. globulus</i>	TAS	35	Quick growing, tall, erect smooth barked timber tree with long strap-like mature leaves and orbicular blue juvenile foliage. Sheds bark in ribbons.
tuart	<i>E. gomphocephala</i>	WA	20	Tall tree with grey brown fibrous bark. Flowers Mar/April. Good honey producer.
ridge-fruited mallee	<i>E. incrassata</i>	WA	5	Stiff foliated mallee with smooth grey to grey brown bark. Creamy white showy flowers.
bookleaf mallee	<i>E. kruseana</i>	WA	6	Unique appearance, leaves small, round, sessile and bluish. Flowers yellow in spike-like arrangement.
Darling Range ghost gum/buttergum	<i>E. laeliae</i>	WA	15	An attractive heavy crowned tree with startling white powdery bark.
Port Lincoln gum	<i>E. lansdowneana</i> sub. <i>sp. albo purpurea</i>	SA	6	Sometimes a straggly tree or mallee grown mainly for its purple pink to mauve flowers.
yellow gum	<i>E. leucoxyton</i>	NSW, VIC, SA	10-20	A most variable species in growth habit and flower, ranging from white to red. An extensively planted species due to its hardiness, soil range and decorativeness.
spotted gum	<i>E. maculata</i>	QLD, NSW, VIC	25	Well formed tree with dense crown and smooth bark with purplish blotches. An ideal specimen tree.
bullich	<i>E. megacarpa</i>	WA	25	An attractive tree with smooth white to yellowish-white bark. Prefers a moist site.

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yellow box	<i>E. melliodora</i>	QLD, NSW	20	Graceful, pendulous willow-type foliage and fibrous bark. Excellent for shade or ornamental purposes.
tallow wood	<i>E. microcorys</i>	QLD, NSW	25	Tall pyramidal crown tree with rough light tan to brown bark.
willow peppermint	<i>E. nicholii</i>	QLD, NSW	20	Graceful pendulous willow-type foliage and brown sub-fibrous bark. Excellent for shade or ornamental purposes.
flat-topped yate	<i>E. occidentalis</i>	WA	12	Rapid growing tree with flat topped shady crown and rough bark. Flowers Mar/May.
W.A. blackbutt/yarri	<i>E. patens</i>	WA	30	Erect tree with fibrous black bark and bluish green foliage.
red mahogany	<i>E. resinifera</i>	QLD, NSW	25	Heavy crowned ornamental shade and shelter tree.
swamp mahogany	<i>E. robusta</i>	QLD, NSW	25	Shady tree with dense, dark green foliage, prefers moisture gaining sites.
flooded gum	<i>E. rudis</i>	WA	15	Short trunk, spreading tree with rough grey persistent bark on trunk and lower branches. Prefers moisture gaining sites.
Sydney blue gum	<i>E. saligna</i>	QLD, NSW	35	Fast growing straight trunk, erect tree with smooth bark.
red ironbark	<i>E. sideroxylon</i>	QLD, NSW, VIC	18	A fine shade and shelter tree with deeply furrowed reddish brown bark. Variety rosea has pink flowers.
swamp mallet	<i>E. spathulata</i>	WA	8	Rapid growing, attractive tree with dense crown and dull green foliage.
wandoo	<i>E. wandoo</i>	WA	20	Reasonably dense spreading crown. Smooth light coloured bark. Foliage bluish grey.
native frangipani	<i>Hymenosporum flavum</i>	QLD	10	Decorative upright shade tree with mid-green foliage and fragrant yellow flowers.
	<i>Melaleuca bracteata</i>	QLD, NT, NSW, SA	7	Small tree with white bottlebrush-like flowers.
Rottneest tea-tree	<i>Melaleuca lanceolata</i>	WA	6	Small, dark green foliated, bushy tree with cylindrical spikes of white flowers during summer.
cadjeput	<i>Melaleuca leucadendra</i>	WA	15	Attractive evergreen paperbark with broad leaves and attractive cream bottlebrush flowers. Reasonably fast grower.
narrow-leaf paperbark	<i>Melaleuca linariifolia</i>	QLD, NSW	10	Moisture loving dense tree with linear foliage and white flowers in cylindrical spikes.

COMMON NAME	BOTANICAL NAME	STATE OF ORIGIN	APPROX. HEIGHT METRES	DESCRIPTION
prickly leaf paperbark	<i>Melaleuca styphelioides</i>	NSW, QLD	8	Moisture loving dense tree with masses of small cream flower spikes in late spring.
weeping pittosporum/ native apricot	<i>Pittosporum phylliraeoides</i>	WA	5	Graceful, pendulous foliage of dense, mid-green leaves. Unusual orange coloured fruits.

SHRUBS

COMMON NAME	BOTANICAL NAME	STATE OF ORIGIN	APPROX. HEIGHT & SPREAD	DESCRIPTION
wallowa	<i>Acacia calamifolia</i>	SA, VIC, NSW	3 x 3	Globular golden yellow flower heads borne on slender erect branches weeping at the tips. Flowers July/Sept.
prickly moses	<i>Acacia pulchella</i>	WA	1 x 1	Thorny spreading dwarf shrub with fernlike foliage and golden yellow flowers. July/Nov.
	<i>Agonis parviceps</i>	WA	2 x 2	Compact shrub with small white axillary and terminal flowers. June/Dec.
tall kangaroo paw	<i>Anigozanthos flavidus</i>	WA	1 x 1	Vigorous perennial with long flower stems which are available in a range of colours from yellow - red.
	<i>Astartea heteranthera</i>	WA	1 x 1	Slender shrub with white flowers.
twiggy baeckea	<i>Baeckea virgata</i>	VIC, NSW, QLD, NT		A variable growth species available as ground covers, small or taller shrubs and a range of cultivars. Flowers white in small clusters at the end of the branches.
river bottlebrush	<i>Callistemon paludosus</i>	NSW, VIC	3 x 3	A sometimes pendulous medium shrub carrying soft pink brushes of flowers.
lemon-scented myrtle	<i>Darwinia citriodora</i>	WA	1.5 x 1.5	Compact shrub with small round bluish foliage, flowers orange - red.
hop-bush	<i>Dodonaea viscosa</i>	ALL STATES	3 x 3	Dense hardy shrub. Variety <i>purpurea</i> has a purple foliage.
	<i>Grevillea banksii</i>	QLD	3 x 3	Well branched shrub with dark green pinnate foliage and large erect red flowers. Sept/June.
"Clearview David"	<i>Grevillea</i>	CULTIVAR	2 x 2	Red flowers carried on a dense bush. July/Oct.
	<i>Grevillea hookeriana</i>	WA	3 x 3	Divided leaves give this plant a fernlike appearance. Bright red toothbrush flowers appear from July to April.
	<i>Grevillea longifolia</i>	NSW	3 x 4	Handsome spreading shrub with dark green linear leaves and red toothbrush flowers July/Dec.
	<i>Grevillea rosmarinifolia</i>	VIC, NSW	1.5 x 1.5	Linear foliaged dense shrub carrying red flowers throughout most of the year.
sea urchin hakea	<i>Hakea petiolaris</i>	WA	4 x 2	Erect shrub with dull red flowers and protruding white styles.
	<i>Hakea suaveolens</i>	WA	3 x 3	Vigorous shrub with axillary globular clusters of white flowers.

COMMON NAME	BOTANICAL NAME	STATE OF ORIGIN	APPROX. HEIGHT & SPREAD	DESCRIPTION
"Fairy Star Kunzea"	<i>Kunzea ambigua</i>	NSW, VIC	3 x 2	A showy white to pink flowered upright shrub.
coastal tea-tree	<i>Leptospermum laevigatum</i>		5 x 3	Tall hardy bushy shrub with white flowers.
	<i>Leptospermum squarrosum</i>		2 x 1	Erect shrub carrying profuse pink flowers in May/July.
	<i>Melaleuca armillaris</i>	QLD, NSW	5 x 5	Fast growing tall shrub or small tree with soft green foliage and white bottlebrush-like flowers.
	<i>Melaleuca decussata</i>	SA, VIC	2 x 2	Small mauve bottlebrush flowers fading to white carried on a rounded bush.
	<i>Melaleuca diosmifolia</i>	WA		Dense upright hardy shrub with inconspicuous light green flower spikes.
	<i>Melaleuca ericifolia</i>	NSW, VIC, TAS, QLD	4 x 3	Large bushy shrub with cylindrical white flower spikes in summer.
	<i>Melaleuca hypericifolia</i>	NSW	5 x 3	Attractive fast growing shrub with inconspicuous rusty red flowers.
	<i>Melaleuca macronychia</i>	WA	1.5 x 1	Erect shrub of open habit with red bottlebrush type flowers in summer.
	<i>Melaleuca nesophila</i>	WA	4 x 2	Hardy bushy shrub with terminal mauve flowers during summer.
claw flower	<i>Melaleuca pulchella</i>	WA	1 x 1.5	Attractive shrub with pendulous branches carrying mauve flowers in spring and early summer.
"Revolution Gold"	<i>Melaleuca</i>	CULTIVAR	2 x 2	An attractive yellow foliaged shrub with white bottlebrush flowers.
	<i>Melaleuca spathulata</i>	WA	1.5 x 1	Erect compact shrub producing terminal clusters of mauve flowers during late spring and summer.
	<i>Melaleuca violacea</i>	WA	0.5 x 1.5	A low prostrate shrub producing small mauve flowers in spring.
	<i>Melaleuca wilsonii</i>	VIC, SA	1 x 2	A low spreading shrub of variable form bearing clusters of bright mauve flowers in spring.