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## NATIVE RANGELAND TREES AND SHRUBS THAT CAN BE GROWN FROM SEED

Richard G. Silcock

Qld Beef Industry Institute, DPI, PO Box 102, Toowoomba, QLD 4350

For various reasons, many people wish to rejuvenate areas of depauperate vegetation to a balanced mix of domestic stock, wildlife, timber and aesthetic beauty. Their biggest difficulty is often a lack of seed of the species they want or an inability to get the seed that has been collected to germinate. Publications on germinating native plant seeds (Langkamp 1987; Doran and Turnbull 1997) contain valuable information but many species important to rangeland biodiversity are not covered.

How easy is it to capture the regenerative potential of a plant dripping with seed or alternatively to prevent it from thickening up? People on the alert for regenerating weedy species often don't know how much to expect nor what the seedlings will look like. Preliminary characterisation of seedlings of many important woody or weedy plants in southern inland Qld and northern NSW has now been done.

This paper reports on the ease of seed collection, of getting fresh seed to germinate and the appearance and vigour of young seedlings of many common rangeland plants that landholders may wish to manage more reliably. It helps to know before you start if you are likely to have trouble and use your energy on species where success is more likely. The uses for this basic information are many and this is a further contribution to sustainable management and development of our rural communities.

## Seed collection, ease of fresh seed germination and seedling notes on selected native plants

Plant	Seed collection	Seed germination	Seedling features
Trees			
Belah	Easy. Pick fruits	Very unpredictable for	Oval cotyledons; then
Casuarina cristata	slightly green & dry	each seed lot	erect, leafless stem
Black teatree	Fairly easy. Minute	Significant from fresh	Tiny, slow-growing but
Melaleuca lanceolata	seeds fall from nuts	seeds & after 6 months	hardy; short internodes
Bloodwoods & allies	Easy. Pick nuts just	Easy. No dormancy.	Hairy leaves. Long,
Corymbia spp.	before valves open	Seeds large	hairy internodes
Boonaree	Easy if set. Sporadic	Difficult, even if naked	Cotyledons stay buried.
Alectryon oleifolius	seeding years	seeds used	Small, alternate leaves
Bulloak	Easy. Pick fruits	Fairly difficult if fresh;	Oval cotyledons; then
Allocasuarina	slightly green & dry in	uncertain longevity	erect, leafless stem.
luehmannii	bags in the sun		Hard to tell from belah
Gums and box trees	Easy. Pick nuts just	Easy. No dormancy.	Hairless. Cotyledons
Eucalyptus spp.	before valves open	Seeds often tiny	small; Short internodes
Kurrajong	Fairly easy. Seeds	Slow but moderate	Sturdy with very large,
Brachychiton	large	percentages emerge	alternate leaves; stipules
populneus			obvious
Leopardwood	Easy. Must be newly	Germinates rapidly if	Deeply notched, large
Flindersia maculosa	shed; sporadic years	fresh	cotyledons
Peach bush	Difficult. Fungal galls	Easy with fresh seed	Small, oval cotyledons.
Ehretia	commonly replace	once flesh removed	Stem and leaves quite
membranifolia	fruits		hairy
Prickly pine	Problematic, Pick	Good but slow; easily	Very weak. Mealy hairs
Bursaria incana	slightly green	damped off	on stem; no early spines
Red ash	Fairly easy. Needs a	Fair once coverings	Sturdy. White
Alphitonia excelsa	good cleaning	cleaned off	underside on leaves
Vinetree	Problematic. Have to	Slow. Low to good	Cotyledons stay buried.
Ventilago viminalis	beat insect grubs	percentages	Small leaves & stipules

Callitris glaucophylla         readily         percentages         Hardy seedling           Whitewood         Easy. Only set in early summer         Germinates slowly. Seeds 95%, fruits 50%         Simple leaves; hardy           Wild orange         Problematic. Have to beat insect grubs and extract from flesh         Slow, low percentages; use fresh seed from rotting fruit in freshly hand-harvested         Slow growing. Large, leafy cotyledons. Small leaves + spines           Wilga         Easy. Best from soil under tree or emu dung         Strongly dormant if freshly hand-harvested         Shiny, deep green leaves dark dots on underside           Shrubs           Currant bush         Requires dedication. Must have moist flesh         Fairly easy when fresh leaves in pairs ± spines           Dogwood         Very easy. Collect in Jacksonia scoparia         December         Good germination if scarified         Vigorous, hardy; broad leaves initially           Lignum         Requires dedication. Sporadic fruiting         Wery low germination; loses viability quickly         Leafy seedling; long steathing collar around stem at each leaf; hardy           Nipan         Requires dedication. Sporadic fruiting         Requires dedication. Sporadic fruiting         Remove flesh.         Slow to emerge; hardy once established; spines           Plumwood         Requires dedication. Seved soil from under trees is a better source         Remove flesh.         Cotyledons pointed, thin; bluntly trilobed apex to fir	White cypress pine	Easy. Loses viability	Slow, but moderate	Simple linear leaves.
Whitewood   Mild you way   Seed system   Seed system   Seed system   Seed system   Simple leaves; hardy   Slow, fruits 50%   Simple leaves; hardy   Slow, fruits 50%   Slow growing. Large, leafy cotyledons. Small eaves + spines   Shrubs	• •	•		•
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Wild orange   Capparis mitchellii   beat insect grubs and extract from flesh   Easy. Best from soil under tree or emu dung   Strongly dormant if freshly hand-harvested   Eaves + spines   Shiny, deep green leaves dark dots on underside   Shiny, deep green leaves dark dots on underside   Shiny, leafy cotyledons; leaves in pairs ± spines   Sodo germination if   Scarified   leaves in pairs ± spines   Shiny, leafy cotyledons; leaves in pairs ± spines   Vigorous, hardy; broad leaves in tially   Very low germination; loses viability quickly   Show once established; spines   Show to emerge; hardy once established; spines   Show to emerge; hardy once established; spines   Stow to		• •		
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Warrior bush Apophyllum anomalum  Difficult. Fleshy and Apophyllum rarely seen anomalum  Coverings Fluffy  Good from fresh seed leaves longer & narrower; spines softer  Wild rosemary  Very easy. Fluffy  Quite good when  Tiny, hairy seedlings but		Easy. Falls rapidly		
Apophyllum anomalumrarely seenfree of fleshy coveringsleaves longer & narrower; spines softerWild rosemaryVery easy. FluffyQuite good whenTiny, hairy seedlings but	The state of the s			
anomalumcoveringsnarrower; spines softerWild rosemaryVery easy. FluffyQuite good whenTiny, hairy seedlings but				_
Wild rosemary Very easy. Fluffy Quite good when Tiny, hairy seedlings but		rarely seen	•	
Cassinia laguis sands fresh some dormancy hardy once 2 om tall	Wild rosemary	Very easy. Fluffy		
	Cassinia laevis	seeds	fresh; some dormancy	hardy once 2 cm tall
Yellowberry bush Requires dedication. Fair germination of Large cotyledons; slow	Yellowberry bush	Requires dedication.	•	
Maytenus Fruits must be ripe and clean, fresh seeds; growth; hardy	Maytenus	Fruits must be ripe and		growth; hardy
cunninghamii yellow slow	cunninghamii	yellow	slow	

Work continues on other species but so far some have proven impossible to germinate readily after seed ageing and scarification. Those involved include Ellangowan poisonbush ( *Myoporum deserti* ), Western boobialla ( *M. montanum* ), Emu apple ( *Owenia acidula* ), Myrtle ( *Canthium olcifolium* ), Budda ( *Eremophila mitchellii* ), Emubush ( *E. longifolia* ), Quinine tree ( *Petalostigma pubescens* ) and Bitterbark ( *Alstonia constricta* ). Some with succulent fruits may require special treatment such as passage through a bird's gut. Others have little need for seed as they spread freely by root suckers. Plants from the same family often have similar germination patterns but there is no guarantee of this when trying to overcome an apparently strong dormancy for a particular species.

## REFERENCES

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