

Supplementary material

Phylogenetic placement and the timing of diversification in Australia's endemic *Vachellia* (Caesalpinioideae, Mimosoid Clade, Fabaceae) species

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Table S1. Voucher information (Queensland Herbarium) and GenBank accession numbers for the Australian *Vachellia* species included in this study

Taxon	Voucher	GenBank accession number			
		<i>matK</i>	<i>trnL-trnF</i>	<i>trnH-psbA</i>	<i>rbcL</i>
<i>Vachellia bidwillii</i>	AQ906838	MK923591	MK923636	MK923608	MK923621
	AQ555372	MK923595	MK923635	MK923609	MK923622
<i>Vachellia clarksoniana</i>	AQ907745	MK923593	MK923634	MK923607	MK923620
<i>Vachellia ditricha</i>	AQ788189	MK923592	MK923633	MK923605	MK923619
	AQ612478	MK923591	MK923632	MK923606	MK923618
<i>Vachellia douglasica</i>	AQ825443	MK923590	MK923631	MK923604	–
<i>Vachellia pachyphloia</i>	AQ481803	–	MK923630	MK923603	MK923617
<i>Vachellia valida</i>	AQ817074	MK923583	MK923625	MK923598	MK923611
	AQ537185	MK923582	MK923624	MK923596	–
	AQ511469	MK923581	MK923623	MK923597	MK923610
<i>Vachellia suberosa</i>	AQ734737	MK923588	MK923629	MK734737	MK923615
<i>Vachellia sutherlandii</i>	AQ788374	MK923587	MK923628	–	–
	AQ648437	MK923586	–	MK923601	MK923613
	AQ855697	MK923584	MK923626	MK923599	MK923614
	AQ870418	MK923585	MK923627	MK923600	MK923612
<i>Vachellia pallidifolia</i>	AQ532377	–	–	–	MK923616

Table S2. GenBank accession numbers of the non-Australian *Vachellia* species used in this study

Taxon	GenBank accession number			
	<i>matK</i>	<i>trnL-trnF</i>	<i>trnH-psbA</i>	<i>rbcL</i>
<i>Vachellia amythetophylla</i>	JQ230136.1	JQ230294.1	JQ230187.1	JX572180.1
<i>Vachellia anegadensis</i>	JQ265931.1	JQ230254.1	–	–
<i>Vachellia arenaria</i>	JX517408.1	GQ872257.1	GQ872302.1	JX572181.1
<i>Vachellia bellula</i>	KP823583.1	KP823576.1	KP823573.1	–
<i>Vachellia borleae</i>	JF270601.1	GQ872258.1	GQ872303.1	JX572185.1
<i>Vachellia campechiana</i>	HM020710.1	HM020800.1	–	–
<i>Vachellia caven</i>	AF274131.1	AF522967.1	AF524987.1	Z70145.1
<i>Vachellia choriophylla</i>	–	EU440017.1	–	KX385997.1
<i>Vachellia cochliacantha</i>	AY574094.1	AF522968.1	AF524988.1	–
<i>Vachellia collinsii</i>	KX959482.1	DQ371869.1	HG963565.1	JQ592077.1
<i>Vachellia constricta</i>	HM020712.1	AF522969.1	AF524989.1	–
<i>Vachellia cornigera</i>	EU812045.1	DQ398004.1	EU811981.1	JQ592080.1
<i>Vachellia davyi</i>	JF270604.1	GQ872263.1	GQ872308.1	JF265247.1
<i>Vachellia drepanolobium</i>	HM020714.1	HM020804.1	KR735978.1	KR737493.1
<i>Vachellia dyeri</i>	JX517665.1	JQ230221.1	JQ230188.1	JX572189.1
<i>Vachellia erioloba</i>	JX517384.1	GQ872265.1	GQ872310.1	JX572192.1
<i>Vachellia etbaica</i>	JQ230140.1	KR737959.1	KR735954.1	KR736836.1
<i>Vachellia exuvialis</i>	JF270606.1	GQ872267.1	GQ872312.1	EU213436.1
<i>Vachellia farnesiana</i>	JX495663.1	HM020805.1	FJ808541.1	FJ716669.1
<i>Vachellia gerrardii</i>	JF270607.1	GQ872269.1	KR735927.1	JF265250.1
<i>Vachellia grandicornuta</i>	JX517869.1	EU440026.1	GQ872316.1	JF265251.1
<i>Vachellia gummifera</i>	–	JQ230311.1	HE602486.1	–
<i>Vachellia haematoxylon</i>	JQ230141.1	EU440024.1	JQ230192.1	JX572198.1
<i>Vachellia hebeclada</i>	GQ872229.1	GQ872273.1	GQ872318	JX572201.1
<i>Vachellia hockii</i>	JQ230144.1	EU440014.1	JQ230194.1	–
<i>Vachellia karroo</i>	AF274137.1	GQ872274.1	AF524992.1	JF265252.1
<i>Vachellia kirkii</i>	JX517387.1	GQ872275.1	GQ872319.1	JX572204.1
<i>Vachellia kosiensis</i>	JX518109.1	GQ872276.1	GQ872320.1	JX572205.1
<i>Vachellia leucophloea</i>	KX518639.1	–	JX195530.1	JX195515.1
<i>Vachellia luederitzii</i>	AF523186.1	GQ872278.1	GQ872322.1	JX572208.1
<i>Vachellia macracantha</i>	AY574100.1	AY574118.1	KJ426982.1	KJ082629.1
<i>Vachellia melanoceras</i>	GQ982124.1	–	GQ982400.1	GQ981912.1
<i>Vachellia myrmecophila</i>	KP823586.1	KP823579.1	–	–
<i>Vachellia natalitia</i>	JX850066.1	JQ230233.1	JQ278603.1	JX572214.1
<i>Vachellia nebrownii</i>	JX517304.1	GQ872281.1	GQ872325.1	JX572215.1
<i>Vachellia nilotica</i>	AF274139.1	AF522973.1	FJ808566.1	FJ716687.1
<i>Vachellia ormocarpoides</i>	JX517884.1	GQ872284.1	GQ872327.1	JX572218.1
<i>Vachellia pennatula</i>	AY574096.1	AY574111.1	HG963841.1	JQ592084.1
<i>Vachellia permixta</i>	–	GQ872285.1	GQ872328.1	–
<i>Vachellia reficiens</i>	JX518096.1	GQ872287.1	GQ872330.1	JX572220.1
<i>Vachellia rehmanniana</i>	JX517925.1	–	–	JX572221.1
<i>Vachellia robbertsei</i>	GQ872244.1	GQ872288.1	GQ872331.1	–
<i>Vachellia robusta</i>	JQ230146.1	GQ872289.1	GQ872332.1	JX572222.1
<i>Vachellia schaffneri</i>	AF274132.1	HM020818.1	–	–
<i>Vachellia schottii</i>	AF274136.1	AF522971.1	AF524991.1	–
<i>Vachellia sekhukhuniensis</i>	JX518234.1	GQ872291.1	GQ872334.1	JX572226.1
<i>Vachellia seyal</i>	AF274138.1	HM020820.1	KR735272.1	KR736481.1
<i>Vachellia sieberiana</i>	JF270616.1	KX268140.1	GQ872338.1	JF265259.1
<i>Vachellia sphaerocephala</i>	HM020729.1	HM020821.1	–	–
<i>Vachellia stuhlmannii</i>	JX517951.1	GQ872296.1	GQ872339.1	JX572230.1
<i>Vachellia swazica</i>	JF270617.1	GQ872297.1	GQ872340.1	JF265260.1
<i>Vachellia torrei</i>	JX518215.1	JQ230282.1	–	JX572232.1
<i>Vachellia tortilis</i>	JQ230152.1	AF522974.1	EU213787.1	KX015750.1
<i>Vachellia tortuosa</i>	KJ012817.1	HM020823.1	KJ426983.1	KJ082630.1
<i>Vachellia vernicosa</i>	–	EU440025.1	EU811984.1	–
<i>Vachellia xanthophloea</i>	JX517302.1	GQ872300.1	GQ872343.1	JF265263.1

Table S3. Sequences statistics and model parameters for each plastid region

Parameter	<i>trnL-trnF</i>	<i>trnH-psbA</i>	<i>matK</i>	<i>rbcL</i>
Number of sites	1027	528	877	562
Variable sites (incl. outgroups)	134	130	67	32
Parsimony informative sites (incl. outgroups)	55	57	26	14
Variable sites (excl. outgroups)	104	107	42	13
Parsimony informative sites (excl. outgroups)	44	51	17	9
Number of sites excluded	129	131	0	0
Optimal substitution model	GTG+G+I	GTG+G+I	GTG+G+I	HKY+I

Fig. S1. Bayesian majority-rule consensus phylogeny of the relationships among *Vachellia* species, based on four plastid regions. Posterior probabilities are noted above each node. Outgroups are removed for diagrammatic clarity. The names of *Vachellia* species that are invasive in Australia are indicated with a star. Most species in the African–Asia clades are native only to Africa, apart from *V. gerrardii*, *V. etbaica*, *V. tortilis*, *V. seyel*, *V. hockii* and *V. nilotica* (all native to both Africa and Asia) and *V. leucophloea* (native to Asia). These species are indicated in bold. The four distinct African–Asian clades identified in Fig. 2 are labelled.

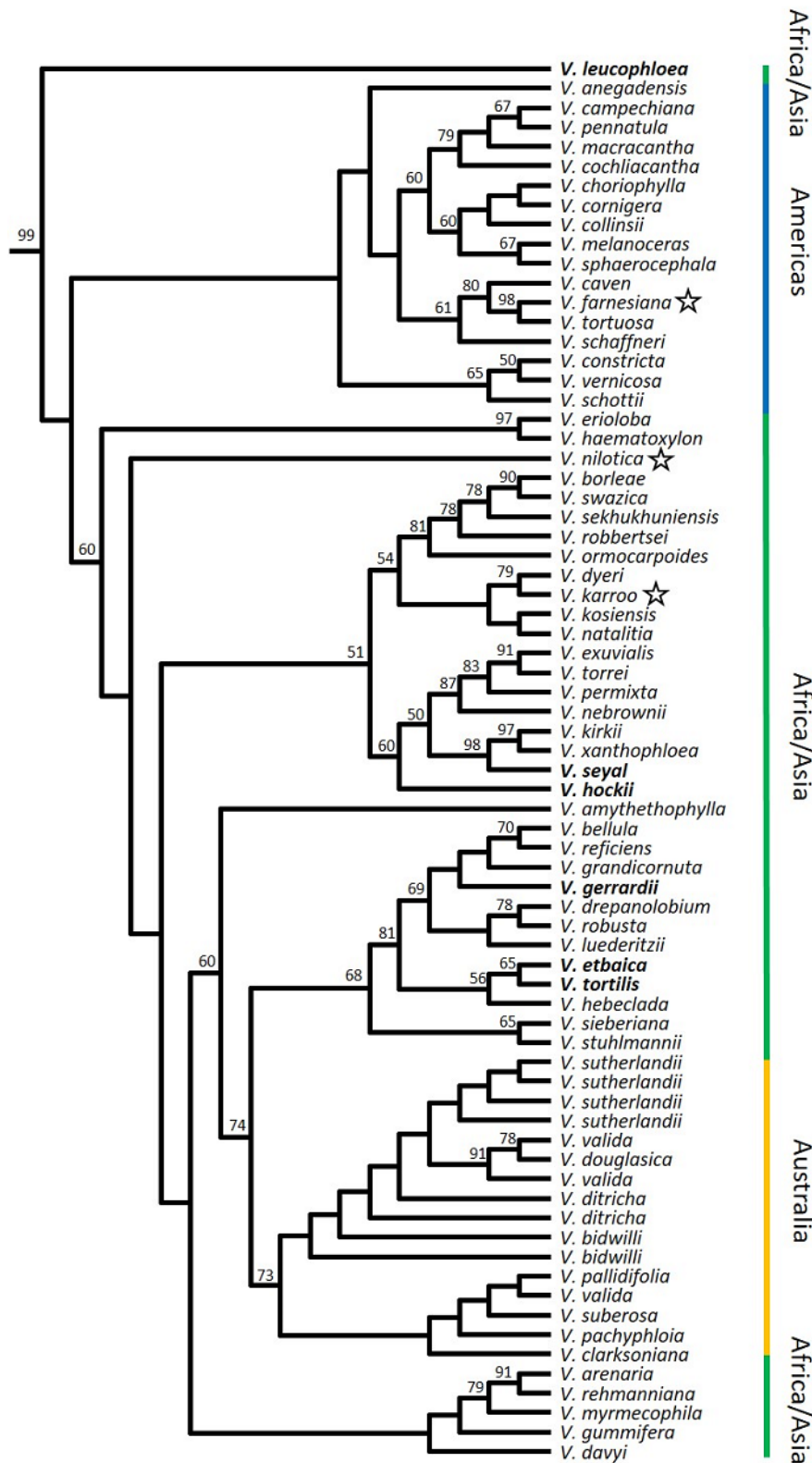


Fig. S2. Strict-consensus phylogeny of the most-parsimonious trees, based on four plastid regions. Bootstrap-support values of >50% are noted above each node. Outgroups are removed for diagrammatic clarity. The names of *Vachellia* species that are invasive in Australia are indicated with a star. Most species in the African–Asia clades are only native to Africa, apart from *V. gerrardii*, *V. etbaica*, *V. tortilis*, *V. seyal*, *V. hockii* and *V. nilotica* (all native to both Africa and Asia) and *V. leucophloea* (native to Asia). These species are indicated in bold.