

Taxon: <i>Pachypodium baronii</i> Costantin & Bois	Family: Apocynaceae
Common Name(s): Baron's clubfoot red pachypodium	Synonym(s): <i>Pachypodium baronii</i> var. <i>baronii</i> <i>Pachypodium baronii</i> var. <i>erythreum</i>

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 19 Jan 2017
WRA Score: 0.0	Designation: L	Rating: Low Risk

Keywords: Succulent, Shrub, Spiny, Toxic, Wind-Dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	?
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs	y=1, n=0	y
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
405	Toxic to animals	y=1, n=0	y
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	y
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle		

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	n
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat		
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	y
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed		
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	No evidence of domestication

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	"Native: Africa Western Indian Ocean: Madagascar"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifle.com . [Accessed 19 Jan 2017]	"Hardiness: It is sensitive to cold and should be kept totally dry in winter .Temperature from spring to autumn: nocturnal 12°C and diurnal up to 40°C. Wintering: nocturnal 12°C and diurnal 20°C or more, but it demonstrates some cold resilience if dormant and the soil is bone dry in winter. Protect from frost. It tends to lose its leave and go dormant in winter (USDA Hardiness zones: 10 – 11). "
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"LOW open deciduous western forest on Mesozoic calcareous rocks and granitic or gneissic rocks (metamorphic basement). Alt. 300-1200 m." [Elevation range 900 m]

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"DISTRIBUTION. Endemic to Madagascar."
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	"Native: Africa Western Indian Ocean: Madagascar"

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	"Cultivated: . also cult."
	Dave's Garden. 2017. <i>Pachypodium - Pachypodium baronii</i> . http://davesgarden.com/guides/pf/go/62678/ . [Accessed 19 Jan 2017]	"Regional This plant has been said to grow in the following regions: Sarasota, Florida Austin, Texas"

301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. 2017. <i>Flora of the Hawaiian Islands</i> . Smithsonian Institution, Washington, D.C. http://botany.si.edu/ . [Accessed 19 Jan 2017]	No evidence to date

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

305	Congeneric weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No species listed as weed. One species, <i>P. saundersii</i> , with an unconfirmed report of naturalization

401	Produces spines, thorns or burrs	y
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"Shrub 1-3.50 m high; trunk subglobose, mostly narrowed at the base, 20-40 x 20-50 cm, rather abruptly narrowed into one or sometimes several cylindrical branches 30-50 x 4-8 cm tapering to 3-4 cm; bark pale grey or grey-green, smooth or with remains of leaf scars. Branchlets 1.5-7 x 0.8-1.5 cm; covered with paired often curved spines, 2-9(-13) mm long, 1-4(-6) mm in diameter at the base, basal part conical and laterally compressed, 0.33-0.66 of the spine length, often red and pubescent when young, turning medium to dark brown and glabrous. Leaves confined to the apices of the branchlets, petiolate; petiole pale reddish-green, 3-25 mm long, pubescent; blade coriaceous, medium green, with midrib pale green and shiny above, pale glaucous beneath with pale green midrib and dark green reticulate venation when fresh, papery when dried, ovate to obovate or narrowly so, 1.4-3 x as long as wide, 3-18 x 1.4-9 cm, acuminate to apiculate at the apex, cuneate to rounded at the base, margin revolute, glabrous to sparsely pubescent above, especially on midrib and secondary veins and with impressed venation, pubescent beneath with midrib and secondary veins prominent; secondary veins in 15-30 pairs, straight, upcurved at the apex, forming an angle of 45-90° with the costa; tertiary venation reticulate."

402	Allelopathic	
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[Unknown. Grows with other vegetation] "ECOLOGY. On steep gneiss rocks. Alt. 350-1000 m. Mostly in full sun, sometimes in open dry forest in light shade. Accompanied by <i>Pachypodium sofiense</i> , <i>Uncarina</i> sp., <i>Aloe bulbifera</i> , <i>Euphorbia milii</i> , <i>Kalanchoe gastonis-bonieri</i> , <i>Urera</i> sp. and <i>Ischnolepis</i> sp."

403	Parasitic	n
	Source(s)	Notes

Qsn #	Question	Answer
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"Shrub 1-3.50 m high; trunk subglobose, mostly narrowed at the base, 20-40 x 20-50 cm, rather abruptly narrowed into one or sometimes several cylindrical branches 30-50 x 4-8 cm tapering to 3-4 cm; bark pale grey or grey-green, smooth or with remains of leaf scars." [Apocynaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown, but spines, and potential toxicity, might deter browsing

405	Toxic to animals	y
	Source(s)	Notes
	Dave's Garden. 2017. <i>Pachypodium - Pachypodium baronii</i> . http://davesgarden.com/guides/pf/go/62678/ . [Accessed 19 Jan 2017]	"Danger: All parts of plant are poisonous if ingested Plant has spines or sharp edges; use extreme caution when handling"
	Bester, S. P. 2007. <i>Pachypodium</i> Lindl. PlantZAfrica. SANBI. https://www.plantzafrica.com/plantnop/pachypodium.htm . [Accessed 19 Jan 2017]	" <i>Pachypodium</i> falls in a group of the Apocynaceae notorious for poisonous properties and for yielding potent poisons that have been used most effectively in arrow poison since ancient times. The active principles in these poisons are usually glucosides with a digitalis-like action that stimulates the heart, and their effect is well known to hunters who often control and administer them with great skill. "

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	y
	Source(s)	Notes
	Dave's Garden. 2017. <i>Pachypodium - Pachypodium baronii</i> . http://davesgarden.com/guides/pf/go/62678/ . [Accessed 19 Jan 2017]	"Danger: All parts of plant are poisonous if ingested Plant has spines or sharp edges; use extreme caution when handling"
	Bester, S. P. 2007. <i>Pachypodium</i> Lindl. PlantZAfrica. SANBI. https://www.plantzafrica.com/plantnop/pachypodium.htm . [Accessed 19 Jan 2017]	" <i>Pachypodium</i> falls in a group of the Apocynaceae notorious for poisonous properties and for yielding potent poisons that have been used most effectively in arrow poison since ancient times. The active principles in these poisons are usually glucosides with a digitalis-like action that stimulates the heart, and their effect is well known to hunters who often control and administer them with great skill. "

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"HABIT. Shrub with robust, globose to bottle-shaped trunk, much branched, up to 3.50 m high." [No evidence. Unlikely given succulent trunk

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifile.com . [Accessed 19 Jan 2017]	"Exposure: It like full sun to light shade."
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[Light shade] "On steep gneiss rocks. Alt. 350-1000 m. Mostly in full sun, sometimes in open dry forest in light shade."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"P. baronii grows on Mesozoic calcareous rocks and outcrops of the metamorphic basement gneiss and granite in clefts or crevices." ... "Substrate loose peat with gneiss sand, pH 4."
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifile.com . [Accessed 19 Jan 2017]	"Soil: Needs a gritty, porous cactus potting mix with peat gneiss sand, pH 4-5."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"Shrub 1-3.50 m high; trunk subglobose, mostly narrowed at the base, 20-40 x 20-50 cm"

412	Forms dense thickets	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[No evidence] "ECOLOGY. On steep gneiss rocks. Alt. 350-1000 m. Mostly in full sun, sometimes in open dry forest in light shade. Accompanied by <i>Pachypodium sofiense</i> , <i>Uncarina</i> sp., <i>Aloe bulbillifera</i> , <i>Euphorbia milii</i> , <i>Kalanchoe gastonis-bonieri</i> , <i>Urera</i> sp. and <i>Ischnolepis</i> sp."

501	Aquatic	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[Terrestrial] "ECOLOGY. LOW open deciduous western forest on Mesozoic calcareous rocks and granitic or gneissic rocks (metamorphic basement). Alt. 300-1200 m."

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	Family: Apocynaceae Subfamily: Apocynoideae Tribe: Malouetieae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 19 Jan 2017]	Family: Apocynaceae Subfamily: Apocynoideae Tribe: Malouetieae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"HABIT. Shrub with robust, globose to bottle-shaped trunk, much branched, up to 3.50 m high."

601	Evidence of substantial reproductive failure in native habitat	
	Source(s)	Notes
	Bester, S. P. 2007. <i>Pachypodium</i> Lindl. PlantZAfrica. SANBI. https://www.plantzafrica.com/plantnop/pachypodium.htm . [Accessed 19 Jan 2017]	" <i>Pachypodium ambongense</i> , <i>P. baronii</i> and <i>P. decaryi</i> are listed on CITES Appendix I and all other <i>Pachypodium</i> species on Appendix II." [Appendix I lists species that are the most endangered among CITES-listed animals and plants (see Article II, paragraph 1 of the Convention). They are threatened with extinction and CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial (see Article III), for instance for scientific research. In these exceptional cases, trade may take place provided it is authorized by the granting of both an import permit and an export permit (or re export certificate). Article VII of the Convention provides for a number of exemptions to this general prohibition.]

602	Produces viable seed	y
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifle.com . [Accessed 19 Jan 2017]	"Propagation: Seeds or (rarely) cuttings. Fresh seeds results in a remarkable yield of new plants, perhaps 90% and seedlings grow fairly easily. Soak seeds in warm water for 24 hours before sowing in a 5 mm deep, sterile, moist sandy medium (4 parts fine and 4 parts coarse river sand 1 part sieved, well-rotten compost; 1 part perlite; 1 part vermiculite. Keep the mix moist and at a temperature of 27–35°C to ensure rapid germination. Seed start sprouting in just 3-4 days (but continue to germinate erratically for about 6 month)"

Qsn #	Question	Answer
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"REPRODUCTION: By seeds. It can flower when it is 4 years old."

603	Hybridizes naturally	
	Source(s)	Notes
	Eggl, U. 2002. Illustrated handbook of succulent plants: Dicotyledons. Springer-Verlag, Berlin - Heidelberg - New York	[Unknown] "Occasional wild hybrids have been reported, and garden hybrids have been created, but none so fare between Madagascan and African species."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Lipow, S. R., & Wyatt, R. (1999). Floral morphology and late-acting self-incompatibility in <i>Apocynum cannabinum</i> (Apocynaceae). <i>Plant Systematics and Evolution</i> , 219(1-2): 99-109	[Unknown for <i>P. baronii</i>] "... five species of <i>Pachypodium</i> (Anderson 1983) are self compatible."

605	Requires specialist pollinators	y
	Source(s)	Notes
	Rau, E. 2016. President, Sustainable Bioresources, LLC. Personal Communication. 29 December	" <i>P. baronii</i> (becoming rare; blooms here but does not pollinate)"
	Eggl, U. 2002. Illustrated handbook of succulent plants: Dicotyledons. Springer-Verlag, Berlin - Heidelberg - New York	"Pollination is as for <i>Adenium</i> ..." "... <i>Adenium</i> .. Pollination requires a long, slender proboscis to enter the lower chamber between one of the five slits in the androecial cone. Incoming pollen lands on the stigmatic area; as the proboscis is withdrawn it is gummed by contact with the knob of the style and picks up fresh pollen from the anthers above. In cultivation a cat's whisker or horse's tail hair can be used to cross-pollinate two plants."

Qsn #	Question	Answer
606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifle.com . [Accessed 19 Jan 2017]	"Propagation: Seeds or (rarely) cuttings. Fresh seeds results in a remarkable yield of new plants, perhaps 90% and seedlings grow fairly easily. Soak seeds in warm water for 24 hours before sowing in a 5 mm deep, sterile, moist sandy medium (4 parts fine and 4 parts coarse river sand 1 part sieved, well-rotten compost; 1 part perlite; 1 part vermiculite. Keep the mix moist and at a temperature of 27–35°C to ensure rapid germination. Seed start sprouting in just 3-4 days (but continue to germinate erratically for about 6 month) they are also propagated by removal of branches from old plant (if they need to be pruned). They should be allowed to dry for 5 to 8 days before potting up, however the cuttings often fail to root. Seedlings grow fairly slowly compared to other <i>Pachypodium</i> species."
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"REPRODUCTION: By seeds. It can flower when it is 4 years old."
607	Minimum generative time (years)	>3
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"REPRODUCTION: By seeds. It can flower when it is 4 years old."
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant." [No evidence]
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifle.com . [Accessed 19 Jan 2017]	"Cultivation and Propagation: <i>Pachypodium baronii</i> is one of the most attractive species in the entire genus that can be grown both indoors, as well as outdoors in warm climates. It's a rare and slow growing species and an impressive caudex can be developed over the years. In the winters it is deciduous. Pretty cold sensitive-supposedly prone to rot if wet in winter cold. It may be grown as a specimen among rocks and low-growing plants in a hot rockery. It may also be grown in a heavy container on the sunny patio."
703	Propagules likely to disperse as a produce contaminant	n

Qsn #	Question	Answer
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant." [Unlikely. No evidence]

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[Yes, but may be ineffective over long distances] "The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant."

705	Propagules water dispersed	n
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	[Unlikely. Tufted seeds may be buoyant, but occurs in dry habitat] "P. <i>baronii</i> grows on Mesozoic calcareous rocks and outcrops of the metamorphic basement gneiss and granite in clefts or crevices." ... "The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant. In addition, it is possible that insects, birds and also small rodents may disperse the seeds."

706	Propagules bird dispersed	
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant. In addition, it is possible that insects, birds and also small rodents may disperse the seeds." [Possibly No. Primarily adapted for wind dispersal]

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes

Qsn #	Question	Answer
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant. In addition, it is possible that insects, birds and also small rodents may disperse the seeds." [Possibly. Hairs may adhere to fur or feathers, or rodents may cache and disperse seeds]

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. <i>Plant Protection Quarterly</i> , 25(2): 56-74	"Answer 'no' where the taxon is unlikely to be eaten by animals or if seeds are not viable following passage through the gut."
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"The seeds of <i>Pachypodium</i> spp. are provided with awns suggesting that dispersal is by wind. However, according to Keraudren (1963) wind dispersal may not be very effective because the awns of the seeds separate easily or even as soon as the fruit follicles open, and the seeds will fall on the ground near the mother plant. In addition, it is possible that insects, birds and also small rodents may disperse the seeds." [Probably No. Seed dispersal, if any, by animals likely to occur externally]

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Rapanarivo, S.H.J.V. (1999). <i>Pachypodium</i> (Apocynaceae): Taxonomy, Ecology & Cultivation. CRC Press, Boca Raton, FL	"REPRODUCTION: By seeds." [Unknown, but probably no. No description of prolific seeding]

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2017) Seed Information Database (SID). Version 7.1. Available from: http://data.kew.org/sid/ . [Accessed 19 Jan 2017]	[Unknown] "Storage Behaviour: No data available for species. Of 1 known taxa of genus <i>Pachypodium</i> , 100.00% Orthodox(p/?)"

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
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Qsn #	Question	Answer
	Source(s)	Notes
	LLIFLE - Encyclopedia of living forms. 2017. <i>Pachypodium baronii</i> . http://www.llifle.com . [Accessed]	[Presumably Yes] "This <i>Pachypodium</i> will not require any pruning to look like a very interesting and unusual bonsai, but after several years it can outgrow its indoor location, requiring a 'pruning'. It has amazing regenerative properties."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Grows in tropical climates
- Spiny
- Toxic
- Seeds likely dispersed by wind and people
- Able to regenerate after cutting

Low Risk Traits

- No reports of invasiveness or naturalization, but limited evidence of widespread introduction outside native range
- Landscaping and ornamental value
- Specialized pollinator requirements (likely limits seed set outside native range)
- Not reported to spread vegetatively