

Taxon: <i>Arachis pintoi</i> Krapov. & W. C. Greg.	Family: Fabaceae
Common Name(s): forage peanut perennial peanut pinto peanut upright calico plant	Synonym(s):

Assessor: Chuck Chimera	Status: Approved	End Date: 5 Feb 2024
WRA Score: 4.0	Designation: L	Rating: Low Risk

Keywords: Stoloniferous Plant, Naturalized, Palatable, Spreads Vegetatively, Self-Fertile

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	y
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	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n = question 205	y
302	Garden/amenity/disturbance weed		
303	Agricultural/forestry/horticultural weed	y = 2*multiplier (see Appendix 2), n = 0	n
304	Environmental weed		
305	Congeneric weed		
401	Produces spines, thorns or burrs	y = 1, n = 0	n
402	Allelopathic		
403	Parasitic	y = 1, n = 0	n
404	Unpalatable to grazing animals	y = 1, n = -1	n
405	Toxic to animals	y = 1, n = 0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y = 1, n = 0	n
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	y = 1, n = 0	y

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	y
411	Climbing or smothering growth habit	y = 1, n = 0	n
412	Forms dense thickets		
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	y = 1, n = 0	n
602	Produces viable seed	y = 1, n = -1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic	y = 1, n = -1	y
605	Requires specialist pollinators	y = -1, n = 0	n
606	Reproduction by vegetative fragmentation	y = 1, n = -1	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	1
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	n
705	Propagules water dispersed	y = 1, n = -1	y
706	Propagules bird dispersed	y = 1, n = -1	n
707	Propagules dispersed by other animals (externally)	y = 1, n = -1	n
708	Propagules survive passage through the gut	y = 1, n = -1	n
801	Prolific seed production (>1000/m ²)	y = 1, n = -1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides	y = -1, n = 1	y
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
	Argel, P. J., & Pizarro, E. A. (1992). Germplasm case study: <i>Arachis pintoi</i> . Pastures for the Tropical Lowlands: CIAT's Contribution. Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia, 57-73	[No evidence] "A. pintoi is indigenous to Brazil, with distribution "apparently" restricted to the valleys of the Jequitinhonha, Sao Francisco, and Tocantins rivers. The TPP's more advanced accession of A. pintoi, CIAT 17434 (cv. Amarillo in Australia), was collected by G. C. Pinto in 1954 in the valley of the Jequitinhonha River, near the Atlantic coast between the river mouth and the city of Belmonte (15°32' S, 39°6' W; 50 m.a.s.l.), growing in low-fertility reddish sand to loamy sand with high aluminum saturation."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2024). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2024). 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, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch . [Accessed 29 Jan 2024]	"Native Southern America BRAZIL: Brazil [Bahia, Goiás, Minas Gerais]"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch . [Accessed]	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Argel, P. J., & Pizarro, E. A. (1992). Germplasm case study: <i>Arachis pintoi</i> . Pastures for the Tropical Lowlands: CIAT's Contribution. Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia, 57-73	"Pinto peanut (<i>Arachis pintoi</i> Krapov. & W.C. Greg.) is a perennial tropical legume useful for pasture, ground cover and as an ornament. Pinto peanut is a valuable forage, easy to establish, persistent, and combines well in mixtures under a wide range of climate and soil conditions, including heavy grazing (Khamseekhiew et al., 2001)."
	Plants for a Future. (2024). <i>Arachis pintoi</i> . https://pfaf.org . [Accessed 1 Feb 2024]	"USDA hardiness 8-12"
	Tropicos.org. (2024). Tropicos v3.4.2. Missouri Botanical Garden. http://www.tropicos.org/ . [Accessed 1 Feb 2024]	Collected over an elevation range of 1000 m, but all collections over 1000 m occur between latitudes of 03°34'S to 13°58'N

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch . [Accessed 2 Feb 2024]	"Native Southern America BRAZIL: Brazil [Bahia, Goiás, Minas Gerais]"
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 2 Feb 2024]	"Naturalised Distribution This species has recently become naturalised in a few sites in the Moreton district in south-eastern Queensland. It has also been recorded on at least one occasion in northern Queensland."
	Faccenda, K. (2022). Pinto Peanut (<i>Arachis pintoi</i>). Observed: May 27, 2022 · 6:49 PM HST. Honolulu, Hawaii, United States. https://www.inaturalist.org/observations/120572160 . [Accessed 2 Feb 2024]	"naturalized on side of road" [Round Top Dr. Lat: 21.322443 Lon: -157.815472]
	Faccenda, K. (2022). Pinto Peanut (<i>Arachis pintoi</i>) needs ID. Observed: May 29, 2022 · 1:16 PM HST. Kauai, Hawaii, United States. https://www.inaturalist.org/observations/120585704 . [Accessed 2 Feb 2024]	"spreading on roadside, near house, naturalizing" [Lat: 22.07862 Lon: -159.375678. Olohena Road, Kauai, Hawaii, United States]

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch . [Accessed 2 Feb 2024]	"Cultivated Asia-Tropical INDIAN SUBCONTINENT: Sri Lanka MALESIA: Indonesia, Malaysia Australasia AUSTRALIA: Australia Northern America REGION: United States Southern America CENTRAL AMERICA: Central America BRAZIL: Brazil [Acre] WESTERN SOUTH AMERICA: Colombia SOUTHERN SOUTH AMERICA: Argentina"
	Heuzé V., Tran G., Delagarde R., Bastianelli D., Lebas F. (2017). Pinto peanut (<i>Arachis pintoi</i>). Feedipedia, a programme by INRAE, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/702 . [Accessed 2 Feb 2024]	"Pinto peanut originated from Brazil and is now widespread in the wet tropics and subtropics. It has been introduced to many areas including Argentina, Australia, Colombia and the USA, and more recently to countries in South-East Asia, Central America and the Pacific (Cook, 1992)."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 2 Feb 2024]	"Pinto peanut (<i>Arachis pintoi</i>) has been cultivated as a forage legume, and occasionally also as a cover crop or garden ornamental, in Australia. It has recently become naturalised at a few sites in south-eastern Queensland (i.e. spreading from garden beds across a nature strip in Nambour and growing along mown road verges and footpaths at Samford Village)."
	Faccenda, K. (2022). Pinto Peanut (<i>Arachis pintoi</i>) needs ID. Observed: May 29, 2022 · 1:16 PM HST. Kauai, Hawaii, United States. https://www.inaturalist.org/observations/120585704 . [Accessed 2 Feb 2024]	[Kauai] "spreading on roadside, near house, naturalizing"
	Faccenda, K. (2022). Pinto Peanut (<i>Arachis pintoi</i>). Observed: May 27, 2022 · 6:49 PM HST. Honolulu, Hawaii, United States. https://www.inaturalist.org/observations/120572160 . [Accessed 2 Feb 2024]	[Oahu] "naturalized on side of road"

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 5 Feb 2024]	"A potential weed of roadsides, footpaths, lawns, disturbed sites, waste areas, plantation crops and riparian vegetation."
	Heuzé V., Tran G., Delagarde R., Bastianelli D., Lebas F. (2017). Pinto peanut (<i>Arachis pintoi</i>). Feedipedia, a programme by INRAE, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/702 . [Accessed 5 Feb 2024]	"Pinto peanut may become a weed in warmer areas (Cook et al., 2005)." [Impacts not specified, but may suppress other vegetation]
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	[Persistent, potential landscape weed] "Once established, <i>A. pintoi</i> is very difficult to eradicate. It is generally spread by cultivation, and favoured by regular grazing or mowing. Tolerant of many common herbicides. Can be controlled by ceasing defoliation in the presence of taller aggressive species or spraying with metsulfuron methyl. Stands recover quickly by virtue of large, fairly persistent soil seed banks"

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Rose, H. & Rose, C. (2018). Pasture "weeds" of coastal NSW. NSW Department of Primary Industries	[Although included in a book of pasture weeds, this plant is intentionally grown as a fodder plant, and for soil improvement, and is not reported to have negative impacts] "Slow to establish, but is very persistent in low frost areas and produces large amounts of seed. Can be found in paddocks where sown over 20 years ago." ... "Persistent under heavy grazing once established, but maximum production is achieved with rotational grazing and where grasses are not allowed to dominate."
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 5 Feb 2024]	[Potential weed. No impacts described] "A potential weed of roadsides, footpaths, lawns, disturbed sites, waste areas, plantation crops and riparian vegetation."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	
	Source(s)	Notes
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 5 Feb 2024]	[Potentially. No environmental impacts documented] "As this species is not a declared plant, its control is not required and there are no restrictions on its sale or cultivation. However, it is a potential environmental weed and should be controlled in sensitive bushland and conservation areas."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	CABI. (2024). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi . [Accessed 5 Feb 2024]	No evidence

Qsn #	Question	Answer
305	Congeneric weed	
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Possibly. Impacts unspecified] <i>Arachis archeri</i> - Weed of: Pastures; <i>Arachis</i> spp. - Weed of: Cereals
	CABI. (2024). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi . [Accessed 2 Feb 2024]	No evidence

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	[No evidence] "Perennial plant. Taproot, without enlargements. Stems erect at first, later prostrate, rooting at the nodes, cylindrical, angled when dry, with rigid caducous bristles. Stems distichous. Leaves tetrafoliolate. Stipules with the portion fused to the petiole 10-15 mm long x 3 mm wide, with rigid bristles on the back; the free portion 10-12 mm long x 2.5 mm wide at the base, with prominent longitudinal veins, both surfaces glabrous, margin with silky hairs. Petiole up to 6 cm long, canaliculate, with rigid bristles on the back, glabrous canal with fine silky hairs along the margins. Rachis 10-15 mm long, canaliculate, with a few bristles on the back. Pulvinus pubescent. Leaflets obovate, apical pair up to 50 mm long x 32 mm wide, basal pair up to 45 mm long x 28 mm wide; glabrous upper surface with scarcely marked margin; lower surface with scattered bristles, more abundant on the external semi-lamina (exposed in the folded leaf) of the basal leaflets; margin lightly marked, with silky hairs and some short bristles."

402	Allelopathic	
	Source(s)	Notes

Qsn #	Question	Answer
	Thang, P. T. et al. (2023). Assessment of allelopathic activity of <i>Arachis pintoi</i> Krapov. & WC Greg as a potential source of natural herbicide for paddy rice. <i>Applied Sciences</i> , 13(14), 8268	[Potentially. Aqueous extracts of <i>A. pintoi</i> exhibit allelopathic effects] "Abstract: Pinto peanut (<i>Arachis pintoi</i> Krapov. & W.C. Greg.) is an herbaceous perennial plant which belongs to the Leguminosae family. This plant is well known for its use as a cover crop, but little information is available on the allelopathic potential of this legume. Therefore, this study aimed to explore the allelopathic effects of <i>A. pintoi</i> under various screening conditions and to analyze its potential allelochemicals using gas chromatography-mass spectrometry (GC-MS). In laboratory bioassays, aqueous extracts of <i>A. pintoi</i> powder exerted the average inhibition of the growth of <i>Echinochloa crus-galli</i> (55.1%), <i>Oryza sativa</i> (77.1%), and <i>Vigna radiata</i> (60.1%), respectively, of which the root lengths of the tested plants were the most suppressed. In greenhouse experiments, <i>E. crus-galli</i> was inhibited by 63.4% at 200 g/m ² of <i>A. pintoi</i> dried powder application. In field trials, <i>A. pintoi</i> also significantly reduced the growth of <i>E. crus-galli</i> and natural weeds. By incorporating a dose of 200 g/m ² , the average inhibition of <i>E. crus-galli</i> was 43.9%, the dry weight of natural paddy weeds was 43.1%, and rice yield was simultaneously increased by 35%. The growth inhibitions of weeds and tested plants were proportional to the doses of <i>A. pintoi</i> applied and varied with the tested plant species. Among three different solvent extracts (methanol, hexane, and ethyl acetate), the hexane extract exerted the highest suppression against the growth of <i>E. crus-galli</i> and <i>L. sativa</i> by IC ₅₀ against root and shoot growth = 4.08 and 8.4 mg/mL and 1.7 and 1.54 mg/mL, respectively, followed by ethyl acetate extract, while the least effective was methanol extract. From those extracts, a total of 35 substances were detected by GC-MS analyses, including 14 newly identified constituents, such as phenolic acids, stearic acid, palmitic acid, fatty acids, pyranones, and benzofurans, which may be responsible for the herbicidal effects of <i>A. pintoi</i> . This study suggests that <i>A. pintoi</i> may be used as a source of bioherbicide to minimize the dependency on harmful synthetic herbicides and enhance rice yield."

403	Parasitic	n
	Source(s)	Notes
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	"Perennial plant. Taproot, without enlargements. Stems erect at first, later prostrate, rooting at the nodes, cylindrical, angled when dry, with rigid caducous bristles." [No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). <i>Tropical Forages: An interactive selection tool</i> . 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Feeding value Nutritive value 13-25% crude protein, 60-70% dry matter digestibility. Relatively low levels of condensed tannins. Palatability/acceptability Well eaten by all classes of animals, including chickens, ducks, pigs, rabbits and fish. Selected by cattle if animals exposed to the legume previously."
	Araya, E., Elizondo, J., Jiménez, C., & Quan, A. (1997). Fighting weeds in mono-cultures of forage peanut (<i>Arachis pintoi</i>). <i>Agronomia Mesoamericana</i> 8(2): 33-43	"The efficacy of four herbicide treatments (glyphosate (as Roundup), bentazone (as Basagran) + fluazifop-butyl (as Fusilade), 2,4-DB + fluazifop-butyl, and paraquat + diuron (Gramuron)) was compared with manual weed control and grazing in <i>Arachis pintoi</i> fields in Costa Rica. Effects on the coverage and tolerance of <i>A. pintoi</i> were assessed at 0, 30, 60, and 90 days following treatment. Glyphosate and manual weed control resulted in <i>A. pintoi</i> becoming dominant, while grazing substantially reduced the coverage of <i>A. pintoi</i> . Grazing also resulted in the largest amount of weed dry matter and the highest percentage of weeds in fields."

405	Toxic to animals	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Palatability/acceptability - Well eaten by all classes of animals, including chickens, ducks, pigs, rabbits and fish. Selected by cattle if animals exposed to the legume previously. Toxicity - No record of adverse effects."

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Pests and diseases - Diseases cause no long-term or serious damage, but rats and mice are attracted to the nuts and can be a problem. Cv. Amarillo is resistant to the major groundnut diseases, rust (<i>Puccinia arachidis</i>), early leaf-spot (<i>Cercospora arachidicola</i> = <i>Mycosphaerella arachidis</i>) and late leaf-spot (<i>Phaeoisariopsis personata</i> = <i>Cercosporidium personatum</i> = <i>Mycosphaerella berkeleyi</i>). Fungal diseases recorded include various leafspots (<i>Cercospora</i> sp., <i>Phomopsis</i> sp., <i>Periconia</i> sp., <i>Cylindrocladium</i> sp. and <i>Colletotrichum gloeosporioides</i>), the latter also being associated with black stem lesions in Colombia, scab (<i>Sphaceloma arachidis</i>) and foliar blight (<i>Rhizoctonia solani</i>), although none has caused serious damage. The following fungal diseases have been isolated from 'Mandobi', but none has caused serious damage: peanut rust (<i>Puccinia arachidis</i>), anthracnose (<i>Glomerella cingulata</i> ; anamorph: <i>Colletotrichum gloeosporioides</i>), <i>Mycosphaerella</i> leaf spot (<i>Mycosphaerella berkeleyi</i>), stem rot and <i>Athelia</i> leaf blight (<i>Athelia rolfsii</i>) and <i>Rhizoctonia</i> leaf blight (<i>Thanatephorus cucumeris</i>). It is advisable not to use pinto peanut as a ground cover in custard apple or atemoya (<i>Annona</i> sp.) orchards because <i>Cylindrocladium</i> , which causes minor damage to the legume, can cause serious damage to the tree leaves. 'Amarillo' has moderate to high resistance to the various root-knot nematodes (<i>Meloidogyne</i> spp.) but is susceptible to the root lesion nematode (<i>Pratylenchus brachyurus</i>). Other nematodes have been identified in <i>A. pintoi</i> stands in the Amazon region viz. <i>Aphelenchoides</i> sp., <i>Criconemella</i> sp., <i>Ditylenchus</i> sp., <i>Pratylenchus brachyurus</i> , <i>Paratrichodorus minor</i> and <i>Xiphinema</i> sp. Leaves of some plants have an apparently non-pathogenic variegation or chimera that appears similar to the symptoms of mosaic virus. Peanut mottle potyvirus can cause chlorotic ringspots in leaves. Infestations of spider mites (<i>Tetranychus</i> sp.), which can occur, particularly under warm dry conditions, do not cause major damage in the field but can be a problem in the glasshouse."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Toxicity - No record of adverse effects."

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Fire - Rarely subjected to fire by virtue of preferred habitat. However, high levels of soil seed and the capacity to re-establish new crowns at depth if surface crown is destroyed, ensure recovery after fire."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Wong, C. C., Chin, F. Y., & Mirzaman, S. (2000). Growth performance of <i>Arachis pintoi</i> under shade of a dense oil palm plantation. In Working with farmers: the key to adoption of forage technologies. Proceedings of an International Workshop held in Cagayan de Oro City, Mindanao, Philippines from 12-15 October 1999 (pp. 207-210). Australian Centre for International Agricultural Research (ACIAR)	"In a study in Johor, Malaysia, rows of <i>Arachis pintoi</i> were alternated with rows of different grass species under 15-year-old oil palms. The experimental results confirmed the overall poor performance of shade-tolerant grasses under dense plantation shade. <i>A. pintoi</i> established slowly in dense shade but gradually increased as a proportion of the forage on offer."
	Heuzé V., Tran G., Delagarde R., Bastianelli D., Lebas F. (2017). Pinto peanut (<i>Arachis pintoi</i>). Feedipedia, a programme by INRAE, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/702 . [Accessed 2 Feb 2024]	"Pinto peanut does particularly well under shaded conditions (Cook et al., 2005)."
	Rose, H. & Rose, C. (2018). Pasture "weeds" of coastal NSW. NSW Department of Primary Industries	"Shade tolerant, but tops are burnt off by frost."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Generally found on red, sandy loam river-bottom soils of low to moderate fertility and high aluminium saturation, particularly in low areas, which are wet to flooded during the wet season. In cultivation, <i>A. pintoi</i> has not been restricted by soil texture. Successful on soils with pH (H O) ranging from about 4.5 to 7.2, although growth is reduced below pH 5.4. Prefers moderate to high fertility but can survive in infertile soils. Low requirement for copper, molybdenum and lime, and moderate requirement for phosphorus and zinc. Tolerant of high levels of manganese and aluminium. Low to moderate tolerance of salinity."
	Baruch, Z., & Fisher, M. J. (1996). Effect of planting method and soil texture on the growth and development of <i>Arachis pintoi</i> . Tropical Grasslands, 30, 395-401	"The growth and development of <i>A. pintoi</i> cv. Mani Forrajero (CIAT 17434) established from seed (S-plants) and cuttings (C-plants) were studied on a sandy and a clay soil in cylinders in a greenhouse. Yield of above- and below-ground plant parts, leaf area and root length were measured in 10 harvests spread over 99 days. S-plants had higher total, leaf and root yields and lower shoot:root ratios than C-plants. Root growth of S-plants was deeper and faster than that of C-plants, which had shallower and more diffuse roots. Soil texture had only small effects. "

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 5 Feb 2024]	"This species reproduces by seed and also vegetatively via its creeping stems (i.e. stolons and rhizomes). Plants spread laterally over time and may eventually form large colonies."

412	Forms dense thickets	
	Source(s)	Notes
	Heuzé V., Tran G., Delagarde R., Bastianelli D., Lebas F. (2017). Pinto peanut (<i>Arachis pintoi</i>). Feedipedia, a programme by INRAE, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/702 . [Accessed 5 Feb 2024]	"Pinto peanut is a stoloniferous perennial creeping legume that can reach 20-50 cm in height and form dense swards."
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Stoloniferous, perennial herb developing a strong taproot on the older crowns and forming a dense mat of stolons."
	WRA Specialist. (2024). Personal Communication	Low growing, and not thicket-forming, but dense cover may inhibit other vegetation.

501	Aquatic	n
	Source(s)	Notes
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	[Terrestrial] "Perennial plant."

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch . [Accessed 2 Feb 2024]	"Genus: <i>Arachis</i> Section: <i>Caulorrhizae</i> Family: <i>Fabaceae</i> (alt. <i>Leguminosae</i>) Subfamily: <i>Faboideae</i> Tribe: <i>Dalbergieae</i> "

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	"Perennial plant. Taproot, without enlargements." [Not woody]

Qsn #	Question	Answer
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	"Perennial plant. Taproot, without enlargements. Stems erect at first, later prostrate, rooting at the nodes, cylindrical, angled when dry, with rigid caducous bristles."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	[No evidence] "Native: South America: Brazil (Bahia, Goiás, Minas Gerais) Cultivated: Throughout the wet tropics and subtropics, and upland tropics to c. 1,400 m asl"
602	Produces viable seed	y
	Source(s)	Notes
	Heuzé V., Tran G., Delagarde R., Bastianelli D., Lebas F. (2017). Pinto peanut (<i>Arachis pintoi</i>). Feedipedia, a programme by INRAE, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/702 . [Accessed 1 Feb 2024]	"Pinto peanut seeds require a well-prepared seedbed and should be sown 2-6 cm deep. Seedlings develop quickly and can completely cover the ground within 6 months. Pinto peanut can also be propagated through cuttings."
	Fisher, M. J., & Cruz, P. (1994). Some ecophysiological aspects of <i>Arachis pintoi</i> . Biology and agronomy of forage <i>Arachis</i> . Cali, Centro Internacional de Agricultura Tropical, 53-70	"The plant establishes more rapidly from seed than from stolons, although it is frequently planted vegetatively because seed is hard to harvest from the soil."
603	Hybridizes naturally	
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Has crossed with <i>A. repens</i> (section <i>Caulorrhizae</i>) to produce fertile hybrids, although an assumed spontaneous hybrid between plots of <i>A. pintoi</i> cv. Amarillo and <i>A. repens</i> CPI 28273 in Australia has flowered but not set seed (see "Promising accessions"). <i>A. pintoi</i> × <i>A. paraguariensis</i> ssp. <i>paraguariensis</i> (section <i>Erectoides</i>) hybrids have also proved sterile."
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	[Artificial hybrids possible] "Crosses with <i>A. repens</i> produced highly fertile hybrids (86.8%). In contrast, when crossing <i>A. Pintoi</i> with <i>A. major</i> and <i>A. paraguariensis</i> ssp. <i>paraguariensis</i> of the section <i>Erectoides</i> , and with <i>A. lignosa</i> and <i>A. Rigonii</i> of the section <i>Procumbentes</i> , the hybrids were highly sterile."
604	Self-compatible or apomictic	y
	Source(s)	Notes
	Oliveira, J. C. D., et al. (2019). Inferring mating system parameters in forage peanut, <i>Arachis pintoi</i> , for Brazilian Amazon conditions. <i>Acta Amazonica</i> , 49, 277-282	" <i>Arachis pintoi</i> presented a mixed mating system with a predominance of selfing, and families presented inbreeding and different levels of relatedness."
605	Requires specialist pollinators	n

Qsn #	Question	Answer
	Source(s)	Notes
	Plants for a Future. (2024). <i>Arachis pintoi</i> . https://pfaf.org . [Accessed 5 Feb 2024]	"The flowers are pollinated by Insects."
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	[Generic description of <i>Arachis</i>] "Self pollination is the norm, although the flowers are visited sporadically by insects of limited radius of action, and there is evidence of parthenogenesis."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	Cook, B.G. et al. (2020). <i>Tropical Forages: An interactive selection tool</i> . 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Spreads by stolons, up to 2 m/year in the wet tropics and about 1 m/yr in the subtropics. Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals."
	Krapovickas, A., Gregory, W. C., Williams, D. E., & Simpson, C. E. (2007). Taxonomy of the genus <i>Arachis</i> (Leguminosae). <i>Bonplandia</i> , 16, 7-205	"Stems erect at first, later prostrate, rooting at the nodes, cylindrical, angled when dry, with rigid caducous bristles."

607	Minimum generative time (years)	1
	Source(s)	Notes
	CTAHR Sustainable and Organic Agriculture Program. (2024). <i>Perennial Peanut Arachis pintoi</i> . https://cms.ctahr.hawaii.edu/soap/Perennial-Peanut . [Accessed 5 Feb 2024]	"Life Cycle - Seedlings develop quickly with good growing conditions when planted at a rate of several plants per square meter. Complete ground cover can be reached by about 6 months via a network of stolons. Flowering begins 3-4 weeks after emergence and continues through the growing season. Flowering intensifies after rain or irrigation. Seeds remain viable in the ground for more than one season (Cook)."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). <i>Tropical Forages: An interactive selection tool</i> . 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Cook, B.G. et al. (2020). <i>Tropical Forages: An interactive selection tool</i> . 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Cultivated: Throughout the wet tropics and subtropics, and upland tropics to c. 1,400 m asl"

Qsn #	Question	Answer
703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
705	Propagules water dispersed	y
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
706	Propagules bird dispersed	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	" Since seed is set underground, natural dissemination can only be by water erosion. Seeds are soft and digestible and not spread through animals"
801	Prolific seed production (>1000/m2)	n

Qsn #	Question	Answer
	Source(s)	Notes
	Lucid Key Search. (2024). <i>Arachis pintoi</i> . https://keys.lucidcentral.org/demo/js_player/sew2/text/arachis_pintoi.htm . [Accessed 5 Feb 2024]	"After flowering, the flower stalks elongate and grow down into the soil, penetrating the soil up to a depth of 7 cm. The small fruit pods (10-14 mm long and 6-8 mm wide) then develop underground. These fruit have patterned surfaces (i.e. they are reticulate) and usually contain a single seed, though they may occasionally have two seeds. The relatively large seeds (8-11 mm long and 4-6 mm wide) are light brown in colour."
	Grof, B. (1987). Forage attributes of the perennial groundnut <i>Arachis pintoi</i> in a tropical savanna environment in Colombia. Proceedings of the XV International Grassland Congress, August 24-31, 1985, Kyoto, Japan, 168-170	"In the continuing search for superior germplasm of tropical legumes adapted to Oxisol savanna conditions, a study of the perennial wild groundnut <i>Arachis pintoi</i> was initiated in which its performance in grazed association with 4 <i>Brachiaria</i> spp. was evaluated in terms of DM yield and animal liveweight gain. <i>A. pintoi</i> was successful under conditions of heavy grazing (2.4 animal units/ha) employed on a year-round basis. Total grass and legume DM yields ranged from 20.5 to 25.4 t/ha year. <i>A. pintoi</i> in the mixture yielded 5.2 to 9.6 t/ha year when harvested at 4-week intervals. <i>B. dictyoneura</i> produced the highest and <i>B. ruziziensis</i> the lowest DM yield. Mean annual legume content of the legume/grass mixtures ranged from 20.0% to 44.8%. Soil seed reserves of <i>A. pintoi</i> in grazed <i>B. humidicola</i> and <i>B. dictyoneura</i> swards averaged 670 and 618 seeds/m ² , resp. Av. daily liveweight gain on <i>A. pintoi</i> / <i>Brachiaria</i> pastures for the 594-day grazing period was 515 g/head. The potential of <i>A. pintoi</i> appears to be good, since there are a limited number of tropical legume species that are both adapted to Oxisols and compatible with the productive stoloniferous <i>B. humidicola</i> and <i>B. dictyoneura</i> ."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	[Possibly. Described as having a persistent seed bank, but seeds lose viability if improperly dried] "Moderate levels of dormancy in fresh seed can be reduced by pre-drying at 40 °C for 10-14 days prior to planting. Once dried, seed should be stored in a cool dry environment - large reductions in viability of inadequately dried and inappropriately stored seed have been experienced within 10 months of harvest" ... "Stands recover quickly by virtue of large, fairly persistent soil seed banks."

803	Well controlled by herbicides	y
	Source(s)	Notes
	CTAHR Sustainable and Organic Agriculture Program. (2024). Perennial Peanut <i>Arachis pintoi</i> . https://cms.ctahr.hawaii.edu/soap/Perennial-Peanut . [Accessed 5 Feb 2024]	[Effectively controlled by certain herbicides] "Herbicide Sensitivity - The herbicides Dual® , Balan Granular® , Treflan Granules® , Snapshot Granular® , Fusilade II® , and Vantage® are reported not harmful to pinto peanut at recommended label rates. Ronstarä can yellow the leaves and kill the plant (Hensley). "
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	[Effectively controlled by certain herbicides] "Herbicide effects - Tolerant of acifluorfen, bentazone, 2,4-D, 2,4-DB, fluazifop-butyl, and sethoxydim. Susceptible to metsulfuron-methyl and glufosinate."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes

Qsn #	Question	Answer
	CTAHR Sustainable and Organic Agriculture Program. (2024). Perennial Peanut <i>Arachis pintoi</i> . https://cms.ctahr.hawaii.edu/soap/Perennial-Peanut . [Accessed 5 Feb 2024]	"Mow at 2-3 inches the first year to reduce weeds and stimulate lateral growth. Subsequent mowings should be at 6-8 inch height (Glover). "
	Cook, B.G. et al. (2020). Tropical Forages: An interactive selection tool. 2nd and Revised Edn. International Center for Tropical Agriculture (CIAT), Cali, Colombia and International Livestock Research Institute (ILRI), Nairobi, Kenya. www.tropicalforages.info	"Rarely subjected to fire by virtue of preferred habitat. However, high levels of soil seed and the capacity to re-establish new crowns at depth if surface crown is destroyed, ensure recovery after fire." ... "Tolerant of heavy grazing."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2024). Personal Communication	Unknown

Summary of Risk Traits:

Summary of Risk Traits

Arachis pintoi (Pinto peanut), is a species of perennial legume native to Brazil. It is a low-growing, creeping plant often used as a ground cover in agricultural and landscaping settings due to its ability to suppress weeds, improve soil fertility, and provide nitrogen fixation. Although reported to be naturalized in the Hawaiian Islands and Australia and regarded as a potential weed where planted, it is generally considered to be a desirable feature of landscapes and agriculture.

High Risk / Undesirable Traits

Broad climate suitability and elevation range

Thrives and spreads in regions with tropical climates

Reported to be naturalized in the Hawaiian Islands (Kauai, and Oahu), Australia and possibly elsewhere.

A potential weed of roadsides, footpaths, lawns, disturbed sites, waste areas, plantation crops and riparian vegetation.

Shade tolerant.

Tolerates many soil types.

May form dense swards that could exclude other vegetation.

Reproduces by seeds and vegetatively by creeping stolons.

Self-fertile

May reach maturity in one growing season

Seeds and vegetative fragments may be dispersed by water, and through intentional cultivation.

Tolerates and resprouts after grazing, mowing and fire.

Low Risk Traits

Unarmed (no spines, thorns, or burrs)

Highly palatable

Non-toxic

Seed set is underground, reducing risk of accidental dispersal

Seeds are soft and digestible and not spread through animals

Certain herbicides may provide effective control

Second Screening Results for Herbs or Low Stature Shrubby Life Forms

(A) Reported as a weed of cultivated lands? Not confirmed

(B) Unpalatable to grazers or known to form dense stands? No. Palatable, mat-forming rhizomatous herb.

Outcome = Accept (Low Risk)

