Taxon: Solanum asperolanatum Ruiz & Pav. **Family:** Solanaceae

Common Name(s): devil's fig **Synonym(s):** Solanum hispidum Pers.

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 26 Mar 2019

WRA Score: 7.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Tropical Shrub, Naturalized, Prickly, Self-Compatible, Bird-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	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	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
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		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans		
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		
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		

Qsn #	Question	Answer Option	Answer
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		
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
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		
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)		
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		
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**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	No evidence

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. (2019). 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. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 25 Mar 2019]	"Native Southern America NORTHERN SOUTH AMERICA: Venezuela (w.) WESTERN SOUTH AMERICA: Bolivia, Colombia, Ecuador, Peru"

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 25 Mar 2019]	

Qsn #	Question	Answer
203	**Broad climate suitability (environmental versatility)**	**y**
	Source(s)	**Notes**
	rarepalmseeds.com. 2019. Solanum asperolanatum Devil's Fig. https://www.rarepalmseeds.com/solanum-asperolanatum. [Accessed 26 Mar 2019]	"Solanum asperolanatum prefers a warm or cool temperate climate without extremes of heat or cold in cultivation. However, it is adaptable and will grow anywhere where the summers are not blistering hot and the winters are not freezing cold."
	Plant Lust. 2019. Solanum asperolanatum. https://plantlust.com/plants/5425/solanum-asperolanatum/. [Accessed 25 Mar 2019]	"zones: 10a-12"
	Tropicos.org. 2018. Missouri Botanical Garden. http://www.tropicos.org/. [Accessed 25 Mar 2019]	Collected from 640 m to 3500 m elevation at latitudes of 18°06'30"S to 00°01'00"S

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Sankara Rao, K., Arun Singh R., Deepak Kumar, Raja K Swamy and Navendu Page (2016). Digital Flora of Eastern Ghats. http://easternghats.ces.iisc.ernet.in/plants.php?name=Solanum hispidum. [Accessed 25 Mar 2019]	"Comments : Often on hills above 1000 m, sometimes as a gregarious weed of wastelands." ... "World Distribution : Naturalized in other Tropics"
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 25 Mar 2019]	"Native Southern America NORTHERN SOUTH AMERICA: Venezuela (w.) WESTERN SOUTH AMERICA: Bolivia, Colombia, Ecuador, Peru"

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Solanum asperolanatum Ruiz & Pav. Solanaceae Total N° of Refs: 6 Habit: Shrub Preferred Climate/s: Subtropical, Tropical Major Pathway/s: Herbal References: Brazil-W-255, Brazil-W-362, Brazil-W-407, Australia-WD-1934, Australia-W-1977, India-W-1977"

301	Naturalized beyond native range	y
	Source(s)	**Notes**
	Australian Biological Resources Study. (1982). Flora of Australia Volume 29, Solanaceae. CSIRO Publishing, Melbourne	"Sparingly naturalised in disturbed sites in Brisbane area, south-eastern Qld."
	Schäfer, H. (2002). Chorology and Diversity of the Azorean Flora. PhD Dissertation. University of Regensburg, Regensburg, Germany	"Tab. 9d: Naturalised plants of the Azorean flora recorded since 1950 (invasive species in bold letters)." [Includes Solanum hispidum]
	Sekar, K. C., Aseesh, P., Srivastava, S., & Giri, L. (2015). Invasive Alien Plants of Himachal Pradesh, India. Indian Forester, 141, 520-527	"Table 1 : Invasive plant species of Himachal Pradesh" [Includes Solanum hispidum]

Qsn #	Question	Answer
	Sekar, K. C. (2012). Invasive alien plants of Indian Himalayan region—diversity and implication. American Journal of Plant Sciences, 3: 177-184	"Table 1. Invasive species of Indian Himalayan Region" [Includes Solanum hispidum]
	Narasimhan, D., Arisdason, W., Irwin, S. J., & Gnanasekaran, G. (2009). Invasive Alien Plant Species of Tamil Nadu. In Proc. Natl. Seminar Invasive Alien Species. ENVIS Centre, Department of Environment, Government of Tamil Nadu, Chennai. pp. 29–38	"Table 2 Tropical American Naturalized/Invasive species" [Includes Solanum hispidum]
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. (2019). Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/. [Accessed 25 Mar 2019]	No evidence for Solanum asperolanatum in the Hawaiian Islands to date. Fourteen species of Solanum reported as naturalized

302	Garden/amenity/disturbance weed	
	Source(s)	**Notes**
	Trade Winds Fruit. (2019). Giant Devil's Fig - Solanum hispidum. http://www.tradewindsfruit.com/content/giant-devils-fig.htm. [Accessed 26 Mar 2019]	"Native to South America. Has escaped cultivation in parts of Africa and Asia. While this shrub is not invasive in temperate climates, care should be taken in some areas, such as Australia as it has the potential there to become a noxious weed."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Cited as a weed, but impacts are unspecified

303	Agricultural/forestry/horticultural weed	n
	Source(s)	**Notes**
	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**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Cited as a weed, but impacts are unspecified

305	Congeneric weed	y
	Source(s)	**Notes**
	USDA NRCS. 2019. Federal Noxious Weed List. http://plants.usda.gov/java/noxious. [Accessed 25 Mar 2019]	Federal noxious weeds include: Solanum tampicense, Solanum torvum & Solanum viarum
	USDA NRCS. 2019. Hawaii State-listed Noxious Weeds. https://plants.usda.gov/java/noxious?rptType=State&statefips=15. [Accessed 25 Mar 2019]	Hawaii State-listed Noxious Weeds include: Solanum carolinense L., Solanum elaeagnifolium Cav., Solanum robustum Wendl. & Solanum torvum Sw.
	Weber, E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	Solanum laxum. Solanum linnaeanum, Solanum mauritianum, Solanum nigrum, Solanum tampicense, Solanum viarum listed as weeds of natural areas

401	Produces spines, thorns or burrs	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches, these only early rusty pubescent with long stipitate and sessile or subsessile stellate trichomes, soon glabrate, the same indument densely developed on the lateral and terminal dichotomous corymbs (to 1.5 dm. wide, about 1 dm. long) including the white flowers; prickles sometimes many, on lower ligneous stems not or little enlarged, straight or nearly, 2-3 mm. long, broad at base; petioles 2-2.5 cm. long; leaves broadly ovate-elliptic, more or less oblique at the rounded-cordate base, acuminate, subentire to unevenly repand or 7-11-lobulate, sparsely (except undeveloped youngest) green both sides with only scattered or few sessile or shortly stiped stellulate trichomes, these in age asperous, especially on the upper surface"

402	Allelopathic	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown

403	Parasitic	n
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches" [Solanaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown. Prickles, and possibly leaf chemicals, might deter browsing

405	Toxic to animals	
	Source(s)	**Notes**
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence, but several other Solanum species are reported to be toxic

406	Host for recognized pests and pathogens	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown

Qsn #	Question	Answer
407	**Causes allergies or is otherwise toxic to humans**	
	Source(s)	**Notes**
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence, but several other Solanum species are reported to be toxic

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	**Notes**
	rarepalmseeds.com. 2019. Solanum asperolanatum Devil's Fig. https://www.rarepalmseeds.com/solanum-asperolanatum. [Accessed 26 Mar 2019]	"Solanum asperolanatum prefers a warm or cool temperate climate without extremes of heat or cold in cultivation. However, it is adaptable and will grow anywhere where the summers are not blistering hot and the winters are not freezing cold." [No evidence. Unlikely given habitat]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	**Notes**
	Trade Winds Fruit. (2019). Giant Devil's Fig - Solanum hispidum. http://www.tradewindsfruit.com/content/giant-devils-fig.htm. [Accessed 26 Mar 2019]	"Grow in full sun. Water moderately Once established it is fairly hardy."
	Annie's Annuals. (2019). Solanum hispidum "Devil's Fig". https://www.anniesannuals.com/plants/view/?id=5046. [Accessed 26 Mar 2019]	"Sun/Part Shade"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	**Notes**
	Annie's Annuals. (2019). Solanum hispidum "Devil's Fig". https://www.anniesannuals.com/plants/view/?id=5046. [Accessed 26 Mar 2019]	"Prefers rich, well-drained soil."
	Trade Winds Fruit. (2019). Giant Devil's Fig - Solanum hispidum. http://www.tradewindsfruit.com/content/giant-devils-fig.htm. [Accessed 26 Mar 2019]	"Seeds should be planted in well-drained soil and can be slow to germinate, generally taking several weeks."
	Plant Lust. 2019. Solanum asperolanatum. https://plantlust.com/plants/5425/solanum-asperolanatum/. [Accessed 26 Mar 2019]	"Soil Needs: average, well-drained"

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches"

412	Forms dense thickets	

Qsn #	Question	Answer
	Source(s)	**Notes**
	Henderson, L. (1992). Invasive alien woody plants of the eastern Cape. Bothalia, 22(1), 119-143	[Present, but not reported to form dense thickets in this study] "Other species which were recorded at 10% or more crossings in a veld type category were: Acacia cyclops and Eucalyptus spp. in mountain fynbos; Airiplex cf. nummularia in karoo; Acacia dealbata, A. meamsii, Prunus persica and Salix caprea in moist subtropical grassland; A. cyclops, A. meamsii, Cestrum laevigatum, Sesbania punicea and Solanum hispidum in coastal 'forest'; and Arundo donax and Nicotiana glauca in subtropical thicket and savanna."
	Matuda, E. (1950). A Contribution to Our Knowledge of Wild Flora of Mt. Ovando. The American Midland Naturalist, 43(1), 195-223	[Unknown. Possibly a component of thicket vegetation, rather than the dominant cover] "Solanum hispidum Pers.-At 500-1000 m. alt., in open thickets"

501	Aquatic	n
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	[Terrestrial] "A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches"

502	Grass	n
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 25 Mar 2019]	Family: Solanaceae Subfamily: Solanoideae Tribe: Solaneae

503	Nitrogen fixing woody plant	n
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 25 Mar 2019]	Family: Solanaceae Subfamily: Solanoideae Tribe: Solaneae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches"

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 26 Mar 2019]	"Native Southern America NORTHERN SOUTH AMERICA: Venezuela (w.) WESTERN SOUTH AMERICA: Bolivia, Colombia, Ecuador, Peru"

602	Produces viable seed	y
	Source(s)	**Notes**
	Trade Winds Fruit. (2019). Giant Devil's Fig - Solanum hispidum. http://www.tradewindsfruit.com/content/giant-devils-fig.htm. [Accessed 26 Mar 2019]	"Propagation - By seeds. Seeds should be planted in well-drained soil and can be slow to germinate, generally taking several weeks."
	White, C. T. (1939). Solanum hispidum Pers.: Its Distribution and Synonymy. Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew), 1939(10), 666-668	"The plant is now a 10 ft. tree and flowers and seeds profusely in the Cape Town Municipal Garden."

603	Hybridizes naturally	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown. Interspecific hybridization documented in genus

604	Self-compatible or apomictic	y
	Source(s)	**Notes**
	Whalen, M., & Anderson, G. (1981). Distribution of Gametophytic Self-Incompatibility and Infrageneric Classification in Solanum. Taxon, 30(4), 761-767	"Table 1. Taxonomic distribution of compatibility systems in Solanum" [S. hispidum Pers. - SC = self-compatible]

605	Requires specialist pollinators	n
	Source(s)	**Notes**
	Stratton, D. A. (1989). Longevity of individual flowers in a Costa Rican cloud forest: ecological correlates and phylogenetic constraints. Biotropica, 21(4): 308-318	"APPENDIX 1." [Solanum hispidum - pollination syndrome - B = bee]
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"peduncles about 2 cm. long, branches to 3 cm. long, pedicels crowded, 5 mm. long (7 mm. in fruit); calyx lobes lanate-stellate in type, usually ovate, acuminate, about 6 mm. long; corolla stellate, about 1 (-1.5) cm. long, narrowed ovate lobes lanuginose stellate without, medially puberulent within; anthers violet, 5.5- 6 mm. long;"

Qsn #	Question	Answer
	Braga, J., Nunes, R., Neto, J., Conde, M., Sales, É. O., Barth, O., & Lorenzon, M. (2009). Floral sources and pollen morphology of Tetragonisca angustula (Apidae: Meliponina) in fragments of Atlantic rain forest vegetation, in southeastern Brazil. In Proceedings of Apimondia Congress. Montpellier, France	[Visited by bees] "Regarding the development of strategies for rational exploitation of stingless bee species and such relations on their forager behavior it becomes necessary to know what plant species are used as resources by bees in a specific area. The aim of this survey was to identify the plant species most visited by Tetragonisca angustula (jatai bee) and their pollen types. The study was carried out in the ocean-side Atlantic coast, southeastern Brazil. The vegetation of the study sites lies in the Atlantic Rain Forest and largely supports a closed-canopy forest. Over eight months bee sampling was haphazard monthly whenever flowering plants in the undestory were encountered, considering as far as possible the overall abundance. In the study of pollen grains for the reference material the acetolysis method was used. There were 25 plants visited by jatai bee. Among them stand out Allophilus species, Schinus molle, Tradescantia zebrin, Reisseckia smilacina, Myrsine coriaceae, Psidium guajava, Solanum aculeatissimum, Wedelia paludosa, Tapirira guianensis, Baccharis dracunculifolia, Schilozobium parahyba, Inga edulis and Solanum asperolanatum. There were no marked differences between pollinic types, the particular differences are only present on the surface of pollen grains. This survey suggests a high value of the trophic niche width of Jataí bee in the undestory of Atlantic Rain Forest."

606	Reproduction by vegetative fragmentation	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown

607	Minimum generative time (years)	
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"A shrub or becoming a small tree sometimes sparsely prickly on the flowering branches," [Unknown. As a woody shrub, unlikely to reach maturity in under one year of growth]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	**Notes**
	Mandal, G., & Joshi, S. P. (2015). Plant Invasion: Dynamics and habitat invasion capacity of invasive species in Western Indian Himalaya. Annali di Botanica, 5: 1-16	"Table 2. calculation of importance value index [ivi] of associate species from highway roadsides (tree species are not counted)." [Includes Solanum hispidum as a roadside plant. Could potentially be dispersed if occurring in heavily trafficked areas]

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**

Qsn #	Question	Answer
	Annie's Annuals. (2019). Solanum hispidum "Devil's Fig". https://www.anniesannuals.com/plants/view/?id=5046. [Accessed 26 Mar 2019]	"Add a little 'devil' to your garden with this rare member of the Tomato family. Featuring large (to16") broadly ovate, velvety leaves, this Peruvian evergreen can easily reach 5' tall, making a commanding statement in your garden. Star-shaped purple flowers decorate the shrub from Spring thru early Fall. Small thorns only add to the plant's devilish rep. In Fall, small roundish fruits (for birds only) age from green to purple, finally ripening to yellow. Excellent in containers. Prefers rich, well-drained soil. Mulch to protect roots in Winter."
	Trade Winds Fruit. (2019). Giant Devil's Fig - Solanum hispidum. http://www.tradewindsfruit.com/content/giant-devils-fig.htm. [Accessed 26 Mar 2019]	"Uses - Sometimes planted as an ornamental for its pretty leaves and flowers as well as its strange look."
	WRA Specialist. (2019). Personal Communication	Available at a number of on-line retail sites

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	No evidence, but small seeds could possibly become a produce contaminant if cultivated with other fruits & vegetables

704	Propagules adapted to wind dispersal	n
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"fruits globose, yellowish, about 1.5 cm. in diameter." [No evidence. Fleshy-fruited]

705	Propagules water dispersed	
	Source(s)	**Notes**
	White, C. T. (1939). Solanum hispidum Pers.: Its Distribution and Synonymy. Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew), 1939(10), 666-668	"About Brisbane it is mainly found on creek banks in open forest or cleared light rain-forest, but is sometimes seen on vacant allotments around the town." [Distribution along creek banks suggests seeds or fruit could be dispersed by water in addition to birds or other animals]

Qsn #	Question	Answer
706	**Propagules bird dispersed**	**y**
	Source(s)	**Notes**
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"fruits globose, yellowish, about 1.5 cm. in diameter."
	Gosper, C. R., & Vivian-Smith, G. (2010). Fruit traits of vertebrate-dispersed alien plants: smaller seeds and more pulp sugar than indigenous species. Biological Invasions, 12(7), 2153-2163	"Table 1 Average fruit and seed morphology measurements and main dispersal agents of vertebrate-dispersed alien plants" [Solanum hispidum - Bird-dispersed]
	Castaño, J. H., Carranza, J. A., & Pérez-Torres, J. (2018). Diet and trophic structure in assemblages of montane frugivorous phyllostomid bats. Acta Oecologica, 91, 81-90	[Bird, and bat-dispersed] "Table 3 Plants consumed by frugivore bats in montane forest of neotropical mountains." [Includes Solanum hispidum]

Qsn #	Question	Answer
707	**Propagules dispersed by other animals (externally)**	**n**
	Source(s)	**Notes**
	Australian Biological Resources Study. (1982). Flora of Australia Volume 29, Solanaceae. CSIRO Publishing, Melbourne	"Fruiting pedicel up to 5 mm diam. below calyx. Berry globular, 10–15 mm diam., yellow or orange yellow, drying brown. Seeds 2 mm diam., light brown." [No evidence and no means of external attachment]

Qsn #	Question	Answer
708	**Propagules survive passage through the gut**	
	Source(s)	**Notes**
	Jaeger, P. M. L. (1986). Systematic studies in the genus Solanum in Africa. PhD Dissertation. University of Birmingham, Birmingham, UK	"Distribution: Introduced from Meso-America for it s --- ornamental value; now escaped and found in open disturbed habitats in West and southern Africa. "
	Macbride, J. F. 1962. Flora of Peru. Botanical Series. Volume XIII, Part V-B, Number 1. Field Museum of Natural History, Chicago	"fruits globose, yellowish, about 1.5 cm. in diameter." [Fleshy-fruited. Presumably adapted for zoochory]
	Gosper, C. R., & Vivian-Smith, G. (2010). Fruit traits of vertebrate-dispersed alien plants: smaller seeds and more pulp sugar than indigenous species. Biological Invasions, 12(7), 2153-2163	"Table 1 Average fruit and seed morphology measurements and main dispersal agents of vertebrate-dispersed alien plants" [Solanum hispidum - Bird-dispersed]

Qsn #	Question	Answer
801	**Prolific seed production (>1000/m2)**	
	Source(s)	**Notes**
	White, C. T. (1939). Solanum hispidum Pers.: Its Distribution and Synonymy. Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew), 1939(10), 666-668	"The plant is now a 10 ft. tree and flowers and seeds profusely in the Cape Town Municipal Garden." [Densities unknown]

Qsn #	Question	Answer
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**

Qsn #	Question	Answer
	Oliveira, T. J. F. D., Barroso, D. G., Andrade, A. G. D., Freitas, I. L. J., & Amim, R. T. (2018). Soil seed bank for use in forest recovery ciliary degraded in northwest region fluminense. Ciência Florestal, 28(1), 206-217	"TABLE 3 Phytosociological parameters of tree and shrub species sampled in the seed bank of Riparian Forest Paraíba do Sul river, Itaocara city, RJ state, listed in descending order by the Importance Value" [Includes Solanum asperolanatum. Longevity unspecified]
	Royal Botanic Gardens Kew. (2019) Seed Information Database (SID). Version 7.1. Available from: http://data.kew.org/sid/. [Accessed]	Unknown. Many species of Solanum have orthodox seeds

803	Well controlled by herbicides	y
	Source(s)	**Notes**
	Loh, R. K., Tunison, T., Zimmer, C., Mattos, R., & Benitez, D (2014). A review of invasive plant management in Special Ecological Areas, Hawai ʻi Volcanoes National Park, 1984-2007. Technical Report 187. Pacific Cooperative Studies Unit, University of Hawaii, Honolulu, HI	[Herbicides to control Solanum pseudocapsicum would likely be effective] "Table 2. Herbicide Control Methods for Target Invasive Weeds" [Solanum pseudocapsicum - Herbicide Control Method = 1% Garlon 4 Foliar]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	**Notes**
	WRA Specialist. (2019). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Elevation range exceeds 1000 m, demonstrating environmental versatility
• Thrives in tropical climates
• Naturalized in Australia, India, and the Azores (but no evidence in the Hawaiian Islands to date)
• Regarded as weedy, although impacts are unknown at this time
• Several Solanum species are invasive weeds
• Stems sometimes covered in prickles
• Reproduces by seeds
• Self-compatible
• Seeds dispersed by birds, bats & intentionally by people
• Gaps in biological and ecological information may reduce accuracy of risk prediction

Low Risk Traits
• May require full sun or high light environments to grow
• Herbicides may provide effective control