

Taxon: *Chusquea coronalis* Soderstr. & C. E. Calderón

Family: Poaceae

Common Name(s): botoncillo
Machris bamboo
vara de botoncillo
vara de canastillo

Synonym(s):

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 20 Oct 2020

WRA Score: -2.0

Designation: L

Rating: Low Risk

Keywords: Clumping Bamboo, Tropical, Small-Statured, Ornamental, Rarely Flowers

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	y
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		
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		
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

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y
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	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	y
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		
605	Requires specialist pollinators	y=-1, n=0	n
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		
705	Propagules water dispersed		
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		
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		
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
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence of domestication] "The 1976 flowering of <i>C. corona</i> /is is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown. Distribution (Fig. 28). Mexico to Costa Rica; cloud forests; 600-1500 m."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2020). 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. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 Oct 2020]	"Native Northern America NORTHERN MEXICO: Mexico [Sinaloa] SOUTHERN MEXICO: Mexico [Chiapas, Colima] Southern America CENTRAL AMERICA: Costa Rica [San José], Guatemala [Guatemala, Santa Rosa], El Salvador"
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 Oct 2020]	
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). <i>Systematic Botany Monographs</i> , 27, 1-127	"Distribution (Fig. 28). Mexico to Costa Rica; cloud forests; 600-1500 m."
	Dave's Garden. (2020). <i>Chusquea coronalis</i> . https://davesgarden.com/guides/pf/go/62071/ . [Accessed 19 Oct 2020]	"Hardiness: USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 Oct 2020]	"Native Northern America NORTHERN MEXICO: Mexico [Sinaloa] SOUTHERN MEXICO: Mexico [Chiapas, Colima] Southern America CENTRAL AMERICA: Costa Rica [San José], Guatemala [Guatemala, Santa Rosa], El Salvador"
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). <i>Systematic Botany Monographs</i> , 27, 1-127	" <i>Chusquea coronalis</i> is one of the few widely cultivated members of this genus. It is an attractive, graceful plant that requires a moist, shaded habitat."
	Ohrnberger, D.(1999). <i>The Bamboos of the World: Annotated Nomenclature and Literature of the Species and the Higher and Lower Taxa</i> . Elsevier, Amsterdam	"Horticulture: In cultivation in Guatemala, El Salvador and Cuba for probably a long time. USA: in cultivation in California."
	Dave's Garden. (2020). <i>Chusquea coronalis</i> . https://davesgarden.com/guides/pf/go/62071/ . [Accessed 19 Oct 2020]	"Regional This plant is said to grow outdoors in the following regions: Oceanside, California Reseda, California San Diego, California Santa Barbara, California(2 reports) Spring Valley, California Thousand Oaks, California Vista, California(9 reports)"
	Quindembo Bamboo. (2020). <i>Chusquea coronalis</i> . https://bamboonursery.com/coronalis/ . [Accessed 19 Oct 2020]	[Cultivated and sold in the Hawaiian Islands] "For many bamboo lovers this is considered the most beautiful bamboo in cultivation. It is small statured (12-20 feet in height)."

301	Naturalized beyond native range	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

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	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Chusquea abietifolia listed as an agricultural weed in Cuba. Impacts not verified

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of Chusquea Section Swallenochloa, Section Verticillatae, Section Serpentes, and Section Longifoliae (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence] "Culms to 2.2 cm in basal diameter, 6-15 m tall, arching and drooping or trailing. Internodes 4.5-20.5 cm long, terete, often slightly flattened above the central bud, . golden-yellow, smooth. Culm leaves 28.5-36 cm long, apparently deciduous as the branches develop, purplish, juncture of sheath and blade abaxially a horizontal line; sheaths 14.4-38.5 cm long, 10.5-14.5 times as long as blade, with slightly rounded shoulders and narrowed toward apex, abaxially hispid with glassy hairs, the hairs eventually deciduous but their warty bases remaining, scabrous, purplish toward apex; blades 2.1-2.8 cm long, narrow triangular, erect to partially reflexed, caducous, apiculate, scabrous; girdle to 3 mm long; inner ligule to 0.5 mm long, truncate."

402	Allelopathic	

Qsn #	Question	Answer
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	"Culms to 2.2 cm in basal diameter, 6-15 m tall, arching and drooping or trailing." [Poaceae]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence in genus
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence in genus

406	Host for recognized pests and pathogens	n
	Source(s)	Notes
	Shu, J., & Wang, H. (2015). Pests and diseases of bamboos. In <i>Bamboo</i> (pp. 175-192). Springer, Cham	[Specific pests of <i>Chusquea coronalis</i> have not been identified] "Abstract This chapter assesses the diversity and characteristics of bamboo insect pests and diseases and their control. Based on available data, the number of insects that feed on bamboos is estimated to be more than 1,200 and that of fungi and saprophytes to be more than 400, while there are less than 100 insect pests and ten diseases that cause heavy damage to bamboos. In addition, this chapter describes the characteristics and status of main groups of bamboo insects including bamboo shoot and culm borers, defoliators, branch and culm pests, bamboo seed pests, and postharvest pests. Finally, this chapter discusses the control methods including cultural, physical, biological, and chemical control against bamboo insect pests and diseases, and it is necessary to develop the IPM programs for bamboo pests in the future."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes

Qsn #	Question	Answer
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence in genus
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence in genus

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence. Unlikely given moist, shaded habitat] " <i>Chusquea coronalis</i> is one of the few widely cultivated members of this genus. It is an attractive, graceful plant that requires a moist, shaded habitat."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	" <i>Chusquea coronalis</i> is one of the few widely cultivated members of this genus. It is an attractive, graceful plant that requires a moist, shaded habitat."
	Recht, C. & Wetterwald, M. F.(2015). Bamboos. Pavilion Books Company Limited, London	" <i>Chusquea coronalis</i> Soderstrom et Calderon Origin: Guatemala, Costa Rica Site: cool, moist, full shade"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Quindembo Bamboo. (2020). <i>Chusquea coronalis</i> . https://bamboonursery.com/coronalis/ . [Accessed 20 Oct 2020]	"Does better in well-drained soils and cool temperatures."
	Backyard Gardener. (2020). <i>Chusquea coronalis</i> (<i>Coronalis</i> Bamboo). https://www.backyardgardener.com . [Accessed 20 Oct 2020]	"pH Range: Not defined for this plant Soil Range: Sandy Loam to Clay Loam Water Range: Normal to Moist "

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	"Culms to 2.2 cm in basal diameter, 6-15 m tall, arching and drooping or trailing. Internodes 4.5-20.5 cm long, terete, often slightly flattened above the central bud, . golden-yellow, smooth."

412	Forms dense thickets	n
	Source(s)	Notes

Qsn #	Question	Answer
	Clark, L. G. (1986). Systematics of <i>Chusquea</i> section <i>Chusquea</i> , section <i>Swallenochloa</i> , section <i>Verticillatae</i> , and section <i>Serpentes</i> (Poaceae: Bambusoideae). PhD Dissertation. Iowa State University, Ames, IA	[Species may form dense stands, but no evidence for <i>Chusquea coronalis</i>] " <i>Chusquea</i> often forms dense thickets, and can impede secondary succession until gregarious flowering and death occur." ... " <i>Chusquea coronalis</i> is a delicate bamboo inhabiting lower cloud forests (600-1500 m) from Guatemala to Costa Rica."

501	Aquatic	n
	Source(s)	Notes
	Ohrnberger, D.(1999). <i>The Bamboos of the World: Annotated Nomenclature and Literature of the Species and the Higher and Lower Taxa</i> . Elsevier, Amsterdam	[Terrestrial] "Habitat: In cloud forest, forested river valleys and slopes of ravines (barrancas); at elevations from 600 to 1,500 (1,800) m."

502	Grass	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 Oct 2020]	Family: Poaceae Subfamily: Bambusoideae Tribe: Bambuseae Subtribe: Chusqueinae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 Oct 2020]	Family: Poaceae Subfamily: Bambusoideae Tribe: Bambuseae Subtribe: Chusqueinae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Soderstrom, T., & Calderón, C. (1978). The Species of <i>Chusquea</i> (Poaceae: Bambusoideae) with Verticillate Buds. <i>Brittonia</i> , 30(2), 154-164	"Bamboo forming open cespitose clumps with pachymorph rhizomes, the solid culms with thick walls and little pith, sub-decumbent, curved at the base, then sub-erect, becoming straight above and broadly arched with a clambering tip, to 10 m tall, 1.5-2 cm thick at the base, with 40-50 nodes;"

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

Qsn #	Question	Answer
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 19 Oct 2020]	"Native Northern America NORTHERN MEXICO: Mexico [Sinaloa] SOUTHERN MEXICO: Mexico [Chiapas, Colima] Southern America CENTRAL AMERICA: Costa Rica [San José], Guatemala [Guatemala, Santa Rosa], El Salvador Cultivated Northern America SOUTHWESTERN U.S.A.: United States [California] Southern America CARIBBEAN: Cuba CENTRAL AMERICA: Guatemala, El Salvador"

602	Produces viable seed	y
	Source(s)	Notes
	Pohl, R. W. (1991). Blooming history of the Costa Rican bamboos. <i>Revista de Biología Tropical</i> , 39 (1): 111-124	[Viable seeds produced when plants flower, which could occur after decades of vegetative growth] "This very graceful species occurs from Costa Rica to southern Mexico, but has also been cultivated in California. Prov. de San José: 2 km N.W. of Río Conejo, in a small valley below a waterfall, Pohl & Davidse 11054, Sept. 1968, vegetative; same site, Pohl & Pinette 13209 (type), Jun. 1976, flowering but one plant already dead; same site, seedlings of 1976 blooming, Pohl & Gabel 13580, Jun. 1978; same site, Pohl & Clark 14 105, Jul. 1982, vegetative."

603	Hybridizes naturally	
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). <i>Systematic Botany Monographs</i> , 27, 1-127	[Unknown. Hybrids reported in genus] " <i>C. vulcanalis</i> and <i>C. subtessellata</i> have apparently hybridized (Clark et al. , in press)."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). <i>Systematic Botany Monographs</i> , 27, 1-127	[Unknown] "Only a few species of <i>Chusquea</i> , including <i>C. tonduzii</i> , <i>C. longiligulata</i> , and <i>C. longifolia</i> , have been known to produce mature caryopses. The search for viable caryopses in other species such as <i>C. subtessellata</i> and <i>C. foliosa</i> has proven fruitless. Nothing is known about population structure in these bamboos, and it may be that certain clones are self-incompatible, or other factors may be involved. The apparent lack of fruit production in some bamboos is an interesting and challenging topic for future study."

605	Requires specialist pollinators	n

Qsn #	Question	Answer
	Source(s)	Notes
	Recht, C. & Wetterwald, M. F.(2015). Bamboos. Pavilion Books Company Limited, London	[General description] "Wind carries the pollen from the bright yellow anthers to the stigmas, the long filaments assisting this process. After pollination the cereal-like grain develops from the ovary."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Recht, C. & Wetterwald, M. F.(2015). Bamboos. Pavilion Books Company Limited, London	"Spread: clump forming"
	Soderstrom, T., & Calderón, C. (1978). The Species of <i>Chusquea</i> (Poaceae: Bambusoideae) with Verticillate Buds. <i>Brittonia</i> , 30(2), 154-164	[Clumping bamboo; spreads locally] "Bamboo forming open cespitose clumps with pachymorph rhizomes, the solid culms with thick walls and little pith, sub-decumbent, curved at the base, then sub-erect, becoming straight above and broadly arched with a clambering tip, to 10 m tall, 1.5-2 cm thick at the base, with 40-50 nodes;"

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Banik, R. L. (2015). Bamboo silviculture. In <i>Bamboo</i> (pp. 113-174). Springer, Cham	"Generally bamboos are not annually flowering plants, rather in most cases flowering is after long gap of vegetative phases of life, which is usually 15–60 years in tropical bamboos and 60–120 years in bamboos of temperate region. Evidence of regular flowering cycles of ca. 30 years was found for most of the neotropical woody bamboo species (<i>Chusquea</i> , <i>Guadua</i> , etc.) from northern Mexico to southern Argentina and Chile (Guerreiro 2013). So seeds of a bamboo species are not available every year and thus seedling planting materials cannot be produced."
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallemochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). <i>Systematic Botany Monographs</i> , 27, 1-127	"Phenology. The 1976 flowering of <i>C. corona</i> /is is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."
	Pohl, R. W. (1991). Blooming history of the Costa Rican bamboos. <i>Revista de Biología Tropical</i> , 39 (1): 111-124	"This very graceful species occurs from Costa Rica to southern Mexico, but has also been cultivated in California. Prov. de San José: 2 km N.W. of Río Conejo, in a small valley below a waterfall, Pohl & Davidse 11054, Sept. 1968, vegetative; same site, Pohl & Pinette 13209 (type), Jun. 1976, flowering but one plant already dead; same site, seedlings of 1976 blooming, Pohl & Gabel 13580, Jun. 1978; same site, Pohl & Clark 14 105, Jul. 1982, vegetative. I have observed this site almost yearly to February 1990, and always found the plants vegetative."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[Seeds produced after long, and indeterminate periods of vegetative growth. No means of external attachment] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	" <i>Chusquea coronalis</i> is one of the few widely cultivated members of this genus. It is an attractive, graceful plant that requires a moist, shaded habitat."
	Recht, C. & Wetterwald, M. F.(2015). <i>Bamboos</i> . Pavilion Books Company Limited, London	"The genus <i>Chusquea</i> comes from S. America where there are about 90 species from Mexico to S. Argentina. We see this genus only very rarely. In the trade two species are available, <i>C. couleou</i> and <i>C. coronalis</i> , but the latter is rather frost-sensitive and very difficult to cultivate. <i>C. couleou</i> needs an oceanic climate and <i>C. coronalis</i> is tropical. <i>Chusquea</i> has very fine, soft leaves, mostly on branches from the nodes. <i>C. coronalis</i> develops a ring of fine branches around the stem. The consequence of this is that a <i>Chusquea</i> plant does not grow like a typical bamboo, and for this reason they are particularly sought after. The stems of <i>Chusquea</i> species are completely solid."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

Qsn #	Question	Answer
704	Propagules adapted to wind dispersal	
	Source(s)	Notes
	Banik, R. L. (2015). Bamboo silviculture. In Bamboo (pp. 113-174). Springer, Cham	[General description. Wind may influence distance and direction of gravity-dispersed seeds] "Immediately after ripening, seeds fall on the ground during monsoon (later part of May– August) and start germinating within a week."
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[Possibly. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

705	Propagules water dispersed	
	Source(s)	Notes
	Soderstrom, T., & Calderón, C. (1978). The Species of <i>Chusquea</i> (Poaceae: Bambusoideae) with Verticillate Buds. <i>Brittonia</i> , 30(2), 154-164	[Possibly when plants flower and set seed. Occurs after long periods of growth] " <i>Chusquea coronalis</i> is native to Mexico and Central America (Guatemala to Costa Rica) where it inhabits forested river valleys and slopes of ravines (barrancas), and has been collected at elevations between 650 m and 1800 m."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence. Unlikely. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[No evidence. Unlikely. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

708	Propagules survive passage through the gut	
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Qsn #	Question	Answer
	Source(s)	Notes
	Banik, R. L. (2015). Bamboo silviculture. In Bamboo (pp. 113-174). Springer, Cham	[Descriptions of other bamboo species may apply if or when <i>Chusquea coronalis</i> seeds are produced] "The bamboo seeds, usually, are eaten heavily by rats, birds, wild boars, porcupines, deer and other animals and also by the local hill tribes and usually carry these far away from the seeding mother, thus assisting in dispersal."
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[Unlikely. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[Seed production is essentially absent for long periods of time, but may reach prolific numbers during infrequent flowering periods] "Phenology. The 1976 flowering of <i>C. corona/is</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown"

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Banik, R. L. (2015). Bamboo silviculture. In Bamboo (pp. 113-174). Springer, Cham	[General description] "Bamboo seeds are short lived and loss viability within 1–2 months of collection."
	Clark, L. (1989). Systematics of <i>Chusquea</i> Section <i>Swallenochloa</i> , Section <i>Verticillatae</i> , Section <i>Serpentes</i> , and Section <i>Longifoliae</i> (Poaceae-Bambusoideae). Systematic Botany Monographs, 27, 1-127	[Unknown, but probably irrelevant. Seeds produced after long, and indeterminate periods of vegetative growth] "Fruit unknown. Chromosome number unknown. Fig. 29. Phenology. The 1976 flowering of <i>C. coronalis</i> is the only known bloom in a wild population; the two other dates (1954 and 1956) are from cultivated plants. Long-term observations of populations in Costa Rica by R. W. Pohl (pers. comm.) indicate that this species is cyclical, but the length of the cycle is unknown."

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown. No evidence that this or other species in the genus have been controlled using herbicides. Chemical methods to control invasive bamboos would probably be effective if needed

Qsn #	Question	Answer
804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Probably. Many bamboo species can be repeatedly harvested and will grow back from the rhizomes

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Grows, and could potentially spread, in regions with tropical climates
- Shade tolerant
- Tolerates many soil types
- Reproduces by seeds (rarely)

Low Risk Traits

- No reports of invasiveness or naturalization
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- A clumping bamboo that spreads vegetatively only locally
- Reaches maturity after several decades of growth (flowering rarely observed)
- Lack of flowering for much of life cycle limits potential for long distance dispersal