Family: ***Apocynaceae***

Taxon: ***Strophanthus gratus***

Synonym: *Roupellia grata Wall. & Hook. (basionym)*

Common Name: Climbing oleander
Spider tresses
Poison arrow vine
Strophanthus glabre du Gabon

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L

Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 0**

101	**Is the species highly domesticated?**	**y=-3, n=0**	**n**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	
103	**Does the species have weedy races?**	**y=1, n=-1**	
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**	**n=0, y = 1*multiplier (see Appendix 2)**	
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	
405	**Toxic to animals**	**y=1, n=0**	**y**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	**y**
408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	**n**

411	**Climbing or smothering growth habit**	**y=1, n=0**	**y**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**n**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	**y**
603	**Hybridizes naturally**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	**n**
605	**Requires specialist pollinators**	**y=-1, n=0**	
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	
607	**Minimum generative time (years)**	**1 year = 1, 2 or 3 years = 0, 4+ years = -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**	**y**
705	**Propagules water dispersed**	**y=1, n=-1**	
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**	
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	
		Designation: L	**WRA Score** **0**

Supporting Data:

101	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Is the species highly domesticated? No] "Domestication of Strophanthus gratus is being attempted at the Plantecam compound at Mutengene, Cameroon. Plants grow subspontaneously around Pygmy villages in western Cameroon. Spondias trees are sometimes used as support."
102	2012. WRA Specialist. Personal Communication.	NA
103	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	NA
201	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Species suited to tropical or subtropical climate(s) 2-high] "Strophanthus gratus occurs in the forest area of West Africa and western Central Africa, from Senegal east to south-western Central African Republic and north-western DR Congo and south to Gabon."
202	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Quality of climate match data 2-high] "Strophanthus gratus occurs in the forest area of West Africa and western Central Africa, from Senegal east to south-western Central African Republic and north-western DR Congo and south to Gabon."
203	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Broad climate suitability (environmental versatility)? No] "Strophanthus gratus occurs in primary and secondary moist forest, often at forest margins or on river banks, from sea-level up to 650 m altitude."
203	2012. Dave's Gardern. PlantFiles: Climbing Oleander - Strophanthus gratus. http://davesgarden.com/guides/pf/go/100629/	[Broad climate suitability (environmental versatility)? No] "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	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Strophanthus gratus occurs in the forest area of West Africa and western Central Africa, from Senegal east to south-western Central African Republic and north-western DR Congo and south to Gabon."
205	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China vol. 16 (Gentianaceae through Boraginaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis http://flora.huh.harvard.edu/china/mss/volume16/index.htm	[Does the species have a history of repeated introductions outside its natural range? Yes] "Taiwan [native to W and WC Africa]. Cultivated for medicine. The juice is used as an arrow poison."
205	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T.. A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Does the species have a history of repeated introductions outside its natural range? Yes] "Strophanthus gratus (Wall. & Hook.) Baill.; shrub; exotic; cultivated only"
205	2012. Dave's Gardern. PlantFiles: Climbing Oleander - Strophanthus gratus. http://davesgarden.com/guides/pf/go/100629/	[Does the species have a history of repeated introductions outside its natural range? Yes] "This plant has been said to grow in the following regions: Los Angeles, California Lake Belvedere Estates, Florida Merritt Island, Florida Mulberry, Florida Palm Beach, Florida Humble, Texas Plano, Texas"
301	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China vol. 16 (Gentianaceae through Boraginaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis http://flora.huh.harvard.edu/china/mss/volume16/index.htm	[Naturalized beyond native range? No evidence in Taiwan] "Taiwan [native to W and WC Africa]. Cultivated for medicine. The juice is used as an arrow poison."
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
301	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T.. A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Naturalized beyond native range? No evidence in Singapore] "Strophanthus gratus (Wall. & Hook.) Baill.; shrub; exotic; cultivated only"
302	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence

303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
305	2007. Randall, R.P.. Global Compendium of Weeds - Strophanthus speciosus [Online Database]. http://www.hear.org/gcw/species/strophanthus_speciosus/	[Congeneric weed? Possibly] Strophanthus speciosus listed as a weed [no other information on or evidence of impacts was found]
401	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Produces spines, thorns or burrs? No] "Liana up to 25 m long or less often a shrub, with clear or white exudate; stem up to 10 cm in diameter, in older plants often with corky ridges; branches with many lenticels, dark brown to purplish brown. Leaves decussately opposite, simple and entire; stipules absent; petiole 5–17 mm long; blade ovate or elliptical to obovate, 5–18 cm × 2–9 cm, base rounded or cuneate, apex acuminate, margins entire, often somewhat revolute, thinly leathery, glabrous."
402	2003. Fujii, Y./Parvez, S. S./Parvez, M.M./Ohmae, Y./Iida, O.. Screening of 239 medicinal plant species for allelopathic activity using the sandwich method. Weed Biology and Management. 3: 233–241.	[Allelopathic? Unknown - Possibly] "When using 10 mg leaf litter in the sandwich method, we found that out of the 239 species tested, 223 and 17 species caused inhibitory and promotive responses to lettuce radicle growth, respectively (Table 1)." [S. gratus exhibited some inhibitory effect, but the results are not conclusive]
403	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Parasitic? No] "Liana up to 25 m long or less often a shrub…"
404	1987. Roecklein, J.C./Leung, P. (eds.). A Profile of economic plants. Transaction Publishers, New Brunswick, NJ	[Unpalatable to grazing animals? Unknown] Several species listed for their use as forage plants. No evidence for Strophanthus gratus, which is only mention for its medicinal uses. The toxic properties likely make the plant unpalatable.
404	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Unpalatable to grazing animals? Unknown] "Liana up to 25 m long or less often a shrub, with clear or white exudate" [probably unpalatable to animals, but no evidence found]
405	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Toxic to animals? Probably yes] "Seeds of Strophanthus gratus are very toxic and have been used extensively in the preparation of arrow poison throughout its distribution area. The seeds are mostly ground with the sticky plant juice and the arrow tip is dipped into the mixture. In the rainforest area of Central Africa, the stem bark or roots are used similarly; they are often mixed with other plant products, especially the latex of Periploca nigrescens Afzel., but also of Rauvolfia spp. Game wounded by a poisoned arrow dies quickly, and the flesh can be eaten without problem, although the flesh immediately surrounding the wound is discarded. The seeds are also used as fish poison. In southern Nigeria Strophanthus gratus is cultivated by hunters for the seeds. A leaf and stem decoction is taken in Sierra Leone and Côte d'Ivoire to treat gonorrhoea. In Ghana a decoction of bark is taken to treat weakness, and a leaf paste is applied to snakebites. In Côte d'Ivoire, Ghana and Nigeria a leaf paste is put onto sores, including guinea worm sores. In Nigeria a leaf infusion is taken to treat constipation, and is rubbed on the body to cure fever. A root decoction is said to be an aphrodisiac."
406	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Host for recognized pests and pathogens? Unknown]
407	2010. Schmelzer, G.H./Achigan-Dako, E.G./Bosch, C.H. (Eds.). Medicinal plants of Tropical Africa. Conclusions and recommendations based on PROTA 11(1): 'Medicinal plants'. PROTA Foundation, Nairobi, Kenya	[Causes allergies or is otherwise toxic to humans? Yes] "Table 5: Summary of key issues for research and development of 406 medicinal plant species in Africa … Strophanthus gratus … Discourage use in traditional medicine because of toxicity"

407	2011. Rogers, G.K.. Landscape Plants for South Florida - Rose-Allamanda, Climbing Oleander. Palm Beach State College, Palm Beach Gardens, Florida http://www.plantbook.org/plantdata/apocynaceae/strophanthus_gratus.html	[Causes allergies or is otherwise toxic to humans? Yes] "Be careful, this plant resembles its relative Oleander by containing powerful heart toxins. Rose-Allamanda is one of the few botanical sources of the drug ouabain (WAW bane), which is a naturally occurring human hormone involved in regulating heart function. The toxin has a long history as an African arrow poison and in traditional medicine, this leading to a modern role in cardiology, mostly in Europe and in research. This is not a plant to enjoy where children or pets might nibble. Also on the downside, remember that the flowering is seasonal; the rest of the year there's just a glossy green vine."
407	2012. Dave's Gardern. PlantFiles: Climbing Oleander - Strophanthus gratus. http://davesgarden.com/guides/pf/go/100629/	[Causes allergies or is otherwise toxic to humans? Yes] "Danger: Seed is poisonous if ingested Parts of plant are poisonous if ingested"
408	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Creates a fire hazard in natural ecosystems? Unknown] "Liana up to 25 m long or less often a shrub" [fire ecology unknown, although could potentially act as a fuel ladder intro trees]
409	2011. Rogers, G.K.. Landscape Plants for South Florida - Rose-Allamanda, Climbing Oleander. Palm Beach State College, Palm Beach Gardens, Florida http://www.plantbook.org/plantdata/apocynaceae/strophanthus_gratus.html	[Is a shade tolerant plant at some stage of its life cycle? Possibly Yes] "Full sun or partial shade are requirements."
409	2012. Dave's Gardern. PlantFiles: Climbing Oleander - Strophanthus gratus. http://davesgarden.com/guides/pf/go/100629/	[Is a shade tolerant plant at some stage of its life cycle? Possibly Yes] "Sun Exposure: Sun to Partial Shade Light Shade"
409	2012. Desert Tropicals. Climbing Oleander - Strophanthus gratus. Faucon, P., http://www.desert-tropicals.com/Plants/Apocynaceae/Strophanthus_gratus.html	[Is a shade tolerant plant at some stage of its life cycle? Possibly Yes] "Sun Exposure: Full sun to shade"
410	2011. Rogers, G.K.. Landscape Plants for South Florida - Rose-Allamanda, Climbing Oleander. Palm Beach State College, Palm Beach Gardens, Florida http://www.plantbook.org/plantdata/apocynaceae/strophanthus_gratus.html	[Tolerates a wide range of soil conditions ? No] "Today's species leans the opposite way, preferring consistently moist soil, this well drained and enriched organically."
411	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Climbing or smothering growth habit? Yes] "Liana up to 25 m long or less often a shrub, with clear or white exudate;"
412	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Forms dense thickets? No] "Strophanthus gratus occurs in primary and secondary moist forest, often at forest margins or on river banks, from sea level up to 650 m altitude." [No evidence]
501	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Aquatic? No] "Liana up to 25 m long or less often a shrub…" [Terrestrial]
502	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Grass? No] Apocynaceae
503	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Nitrogen fixing woody plant? No] Apocynaceae
504	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Liana up to 25 m long or less often a shrub…"
601	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Evidence of substantial reproductive failure in native habitat? No] "Because of its wide distribution, Strophanthus gratus is not threatened by genetic erosion. No concerted efforts to conserve genetic resources or breeding programmes are known."

602	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Produces viable seed? Yes] "Seeds spindle shaped, 12–20 mm × 2.5–4.5 mm, glabrous, slightly rough, at apex with a long beak up to 6 cm long, in upper 2.5–4.5 cm with long hairs up to 13 cm long. Seedling with epigeal germination; cotyledons elliptical to obovate, 17–25 mm long, apex rounded...The 1000 seed weight of Strophanthus gratus is 20–30 g. Under glasshouse conditions in temperate climates ripewood cuttings are rooted in early spring in moist sand in a closed case with bottom heat. Strophanthus gratus should preferably be grown in full light in a fertile, moist but well-drained loam rich in organic matter and with additional leaf mould."
602	2012. Top Tropicals. Strophanthus gratus. Top Tropicals Botanical Garden, http://toptropicals.com/catalog/uid/strophanthus_gratus.htm	[Produces viable seed? Yes] "Propagate from softwood cuttings or seeds."
603	1982. Beentje, H.J.. A monograph on the genus Strophanthus (Apocynaceae). Meded Landbouwhogeschool Wageningen. 82(4): 1-191.	[Hybridizes naturally? Possibly Yes] "Some specimens collected in the wild seem to be intermediate between S. gratus and S. thollonii"
604	1957. Spencer, J.L./Winters, H.F.. Compatibility, Pollination, and Disease in Relation to Fruit Yields of Strophanthus intermedius in Puerto Rico. Botanical Gazette. 118(3): 194-198.	[Self-compatible or apomictic? No] "Small plantations of S. gratus (Hook.) Baill. in Java flowered abundantly but failed to set fruit. The plants were found to be highly self-incompatible, and natural cross pollination apparently could be effected only by specialized vectors not present in Java (9)."
604	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Self-compatible or apomictic? No] "Strophanthus gratus is an obligate cross pollinator."
605	1957. Spencer, J.L./Winters, H.F.. Compatibility, Pollination, and Disease in Relation to Fruit Yields of Strophanthus intermedius in Puerto Rico. Botanical Gazette. 118(3): 194-198.	[Requires specialist pollinators? Possibly Yes] "Unfortunately, the yields of Strophanthus fruits from plants in cultivation are characteristically low. In their native habitats the vines often climb trees to a height of 100 feet or more. The flowers occur at the highest levels, and fertilization of the blossoms apparently depends on insects which live in the tree- tops (1). Small plantations of S. gratus (Hook.) Baill. in Java flowered abundantly but failed to set fruit. The plants were found to be highly self-incompatible, and natural cross pollination apparently could be effected only by specialized vectors not present in Java (9). Fruit-set was accomplished quite readily by artificial cross-pollination"
605	1982. Beentje, H.J.. A monograph on the genus Strophanthus (Apocynaceae). Meded Landbouwhogeschool Wageningen. 82(4): 1-191.	[Requires specialist pollinators? Unknown] "Except for a report of the butterfly Danais chrysippus visiting flowers of a cultivated S. speciosus (MARLOTH 1932), no data on pollinators of Strophanthus seems to exist. Indications for psichophily or butterfly pollination can be found in the morphology of the flowers, the fragrance reported for many species, and the predominant colour pattern: white or yellow outside, sometimes contrasted with pink, red, or purple, and white or yellow inside with a corona that is most often red or purple, with red or purple streaks and spots leading from the corona lobes to the base of the anther cone (Fig. 2). Movements of the corolla tails in the wind could also be attractive to possible pollinators (FAEGRI & VAN DER PIJL 1979)."
606	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Reproduction by vegetative fragmentation? Unknown] "Under glasshouse conditions in temperate climates ripewood cuttings are rooted in early spring in moist sand in a closed case with bottom heat."
606	2012. Top Tropicals. Strophanthus gratus. Top Tropicals Botanical Garden, http://toptropicals.com/catalog/uid/strophanthus_gratus.htm	[Reproduction by vegetative fragmentation? Unknown] "Propagate from softwood cuttings or seeds."
607	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Minimum generative time (years)? Unknown]
701	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Seeds spindle shaped, 12–20 mm × 2.5–4.5 mm, glabrous, slightly rough, at apex with a long beak up to 6 cm long, in upper 2.5–4.5 cm with long hairs up to 13 cm long. Seedling with epigeal germination; cotyledons elliptical to obovate, 17–25 mm long, apex rounded" [Unlikely. Seeds adapted for wind dispersal and not for attachment to dispersal agent].
702	1999. Wiersema, J.H./León, B.. World Economic Plants: A Standard Reference. CRC Press, Boca Raton, FL	[Propagules dispersed intentionally by people? Yes] Ornamental

702	2012. Top Tropicals. Strophanthus gratus. Top Tropicals Botanical Garden, http://toptropicals.com/catalog/uid/strophanthus_gratus.htm	[Propagules dispersed intentionally by people? Yes] "An accessory to your garden. This climbing vine has umbels of soft pink flowers with a burgundy throat. The leaves are shiny and smooth and the blossoms smell like roses. " [Ornamental]
703	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Propagules likely to disperse as a produce contaminant? No] "Before exportation the tuft of hair is often removed from the seed. However, the preferred method for exporting seed is inside the fruit and with the tuft of hairs attached, to limit adulteration." [Seeds themselves exported as a product. No evidence of other contamination of produce]
704	1982. Beentje, H.J.. A monograph on the genus Strophanthus (Apocynaceae). Meded Landbouwhogeschool Wageningen. 82(4): 1-191.	[Propagules adapted to wind dispersal? Yes] "The mature fruit splits along the adaxial side longitudinally, exposing the seeds to the wind (Fig. 3). The seed coma reacts mechanically to changes in atmospheric humidity, being almost erect and pressed closely together in damp air, and spreading in dry air; by this motion the seeds move, to some extent, out of the fruit."
704	2001. Sandberg, F./Corrigan, D.. Natural remedies: their origins and uses. CRC Press, Boca Raton, FL	[Propagules adapted to wind dispersal? Yes] "Each flower gives rise to two divergent follicles which, when ripe, are 20-35 cm long and 2-2.5 cm broad and bowed outwards. Each follicle contains 100-200 seeds, which are furnished with feathery awns."
705	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Propagules water dispersed? Potentially] "Strophanthus gratus occurs in primary and secondary moist forest, often at forest margins or on river banks…" [distribution along river suggests seeds or pods may float]
706	2001. Sandberg, F./Corrigan, D.. Natural remedies: their origins and uses. CRC Press, Boca Raton, FL	[Propagules bird dispersed? No] "Each flower gives rise to two divergent follicles which, when ripe, are 20-35 cm long and 2-2.5 cm broad and bowed outwards. Each follicle contains 100-200 seeds, which are furnished with feathery awns."
707	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Propagules dispersed by other animals (externally)? No] "Seeds spindle shaped, 12–20 mm × 2.5–4.5 mm, glabrous, slightly rough, at apex with a long beak up to 6 cm long, in upper 2.5–4.5 cm with long hairs up to 13 cm long. Seedling with epigeal germination; cotyledons elliptical to obovate, 17–25 mm long, apex rounded" [Unlikely. Seeds adapted for wind dispersal and not for attachment to dispersal agent].
708	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Propagules survive passage through the gut? Unknown] "Seeds spindle-shaped, 12–20 mm × 2.5–4.5 mm, glabrous, slightly rough, at apex with a long beak up to 6 cm long, in upper 2.5–4.5 cm with long hairs up to 13 cm long." [seeds not adapted for internal animal dispersal]
801	2006. Beentje, H.J.. Strophanthus gratus (Wall. & Hook.) Baill. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(1): Medicinal plants. PROTA, Wageningen, Netherlands	[Prolific seed production (>1000/m2)? Unlikely] "Fruit consisting of 2 ellipsoid follicles 23–41 cm × 3–4.5 cm, tapering into a narrow and obtuse apex and ending in a large knob, 2-valved, divergent at 180°, wall thick and hard, slightly grooved, glabrous, with many lenticels, many-seeded. Seeds spindle-shaped, 12–20 mm × 2.5–4.5 mm, glabrous, slightly rough, at apex with a long beak up to 6 cm long, in upper 2.5–4.5 cm with long hairs up to 13 cm long." [Seed densities unknown]
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] Other Strophanthus species have orthodox seed storage
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2012. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown]
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]