Key Words: Low Risk; Perennial Herb; Naturalized in Puerto Rico, Ornamental; Tuberous Roots

Family: ***Gesneriaceae***

Taxon: ***Chrysothemis pulchella***

Synonym: *Besleria pulchella Donn*
Besleria umbellata Banks ex Sims
Chrysothemis aurantiaca Decne.
Cyrtandromoea minor Ridley
Episcia pulchella (Donn ex Sims) Mart. ex G.
Skiophila pulchella (Donn ex Sims) Hanst.
Tussacia pulchella (Donn ex Sims) Rchb. ex
Tussacia villosa Benth.
Tussacia woodsonii C.V. Morton

Common Name: Squarestem
Dozakie
Copper Leaf

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 3**

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**	**y**
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	
303	**Agricultural/forestry/horticultural weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
304	**Environmental weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**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**	**n**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	**y**

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**
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	
411	**Climbing or smothering growth habit**	**y=1, n=0**	**n**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**y**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	**n**
603	**Hybridizes naturally**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	
605	**Requires specialist pollinators**	**y=-1, n=0**	**y**
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**	
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**	**n**
706	**Propagules bird dispersed**	**y=1, n=-1**	
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	**y**
708	**Propagules survive passage through the gut**	**y=1, n=-1**	
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	**n**
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**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: L **WRA Score** 3

Supporting Data:

101	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Species suited to tropical or subtropical climate(s) 2-High] "Chrysothemis pulchella, dozakie, is native to Central America and the Caribbean but is widely cultivated for its red and orange flowers."
202	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Quality of climate match data 2-High]
203	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Broad climate suitability (environmental versatility)? No] "Its habitat is usually damp forests on wet rocks at low elevations in Panama and the West Indies, and in northern South America from Surinam to western Colombia and Brazil." [Low elevation, tropical species]
204	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Chrysothemis pulchella, dozakie, is native to Central America and the Caribbean but is widely cultivated for its red and orange flowers."
205	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Does the species have a history of repeated introductions outside its natural range? Yes] "...widely cultivated for its red and orange flowers."
301	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. La Editorial, UPR, San Juan, Puerto Rico	[Naturalized beyond native range? Yes] "Planted as an ornamental and naturalized in humid situations, Puerto Rico; West Indies, northern South America south to Brazil."
301	2003. Vander Velde, N.. The Vascular Plants of Majruo Atoll, Republic of the Marshall Islands. Atoll Research Bulleting. 503: 1-141.	[Naturalized beyond native range? No evidence from Majuro Atoll] "Recent introduction. Central America and Caribbean. Occasional. Planted ornamental and potted plant"
301	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai`i & Hawai`i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaianflora/supplement.htm	[Naturalized beyond native range? No evidence from Hawaiian Islands]
302	2006. Kenny, J.. Flowers of Trinidad and Tobago. Prospect Press, Port of Spain	[Garden/amenity/disturbance weed? Possibly] "It spreads rather like common weeds, but always puts on a display."
302	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Garden/amenity/disturbance weed? Possibly] "In Puerto Rico at least, this plant is stealthy and invasive. It just showed up in my containers a year ago, and despite not setting seed, has hopped it's way around all of my containers. It forms thick tubers beneath the ground, that happily re-sprout if the main shoots are cut off. It's only saving grace is that is does not choke out other plants, it is living comfortably with a Calathea, philodendron, and a walking iris, and other plants appreciate the shade they're given in return. Still, it laughs at any attempts to cut or dig it out."
303	2012. WRA Specialist. Personal Communication.	[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 - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence
401	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Produces spines, thorns or burrs? No] "Herb, perennial, low growing, somewhat fleshy, to 90 cm high (36 in), arising from tuberous roots. Leaves simple, opposite, blade ovate, 10-25 cm long (4-10 in), margins toothed, surface wrinkled and scabrous, lower surface purple."
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Parasitic? No] "Herb, perennial, low growing, somewhat fleshy, to 90 cm high (36 in), arising from tuberous roots."
404	2012. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]

405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No] No evidence
405	2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Toxic to animals? No] No evidence
406	1999. Sagarra, L.A./Peterkin, D.D.. Invasion of the Carribean by the hibiscus mealybug, Maconellicoccus hirsutus Green [Homoptera : Pseudococcidae]. Phytoprotection. 80(2): 103-113.	[Host for recognized pests and pathogens? Yes] "Table 2. List of plants on which the hibiscus mealybug has been recorded in Trinidad (after Me Comie 1998)" [Includes Chrysothemis pulchella]
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence
408	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Creates a fire hazard in natural ecosystems? No] "Herb, perennial, low growing, somewhat fleshy, to 90 cm high (36 in), arising from tuberous roots." … "Moist surfaces in shady places are preferred." [Growth habit and habitat suggest plant will not create fire risks]
409	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Moist surfaces in shady places are preferred."
409	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Is a shade tolerant plant at some stage of its life cycle? Yes] "This plant has grown in heavy shade, under Live Oaks, for many years. They die back each winter and re-emerge each Spring."
410	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Tolerates a wide range of soil conditions? Possibly No] "It requires a rich potting mix fortified with lime and loosely firmed around the roots."
410	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Tolerates a wide range of soil conditions? Possibly] "Soil pH requirements: 5.6 to 6.0 (acidic) 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
410	2012. Plant This. Chrysothemis pulchella. http://www.plantthis.com.au/plant-information.asp?gardener=11329	[Tolerates a wide range of soil conditions? Possibly No] "Soil: enriched soil, mildly acidic to mildly alkaline"
411	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Climbing or smothering growth habit? No] "Terrestrial or rarely epiphytic herbs, to 90 cm tall; stems erect \when young, decumbent with age, rarely branched, freely producing adventitious roots at the nodes, terete at the base, subquadrangular above, green or purplish, densely pilose toward the apex, glabrescent below, slender, 5-12 mm in diam. but with thicker nodes; tuber brown, spheroidal, 2-3 cm in diam. with one or more shoots. Leaves with blades lanceolate, elliptic to ovate, 9-30 cm long, 3-12 cm wide, the apex acute, the base long decurrent into the petiole, crenate or dentate, above dark green, shining, subbullate, sparsely pilose to subscabrous, below lighter green to pink purple along the veins or generally, pilose; petioles less than 1 cm long, 1-2 min broad, green, pilose."
412	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Forms dense thickets? No evidence in Panama]
412	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. La Editorial, UPR, San Juan, Puerto Rico	[Forms dense thickets? No evidence from Puerto Rico] "Planted as an ornamental and naturalized in humid situations, Puerto Rico; West Indies, northern South America south to Brazil."
412	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Forms dense thickets? No] "It's only saving grace is that is does not choke out other plants, it is living comfortably with a Calathea, philodendron, and a walking iris, and other plants appreciate the shade they're given in return."
501	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Aquatic? No] "Herb, perennial, low growing, somewhat fleshy, to 90 cm high (36 in), arising from tuberous roots." [Terrestrial]

502	2012. ITIS. Integrated Taxonomic Information System [Online Database]. http://www.itis.gov/	[Grass? No] Gesneriaceae
503	2012. ITIS. Integrated Taxonomic Information System [Online Database]. http://www.itis.gov/	[Nitrogen fixing woody plant? No] Gesneriaceae
504	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Possibly Yes] "Herb, perennial, low growing, somewhat fleshy, to 90 cm high (36 in), arising from tuberous roots. Leaves simple, opposite, blade ovate, 10-25 cm long (4-10 in), margins toothed, surface wrinkled and scabrous, lower surface purple."
504	2012. Top Tropicals. Chrysothemis pulchella. http://toptropicals.com/catalog/uid/Chrysothemis_pulchella.htm	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "The plant forms tubers at the base of the stem, and sometimes also in the leaf axils and might get dormant if temperature gets below 60F. From this point it is somewhat hardy and can survive cool winter as low as 30-40F, but in this case all leaves and stems will vanish."
601	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Evidence of substantial reproductive failure in native habitat? No] No evidence from Panama
602	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Produces viable seed? Rarely, if ever in Hawaii] "Fruit a capsule, infrequently formed in cultivation." … "Propagate by cuttings and bulbils."
602	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Produces viable seed? No] "Seed Collecting: N/A: plant does not set seed"
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2007. Carlson, J.E.. Floral traits, pollinator behavior, and plant reproduction: tests of natural and sexual selection in the hummingbird-pollinated herb Chrysothemis friedrichsthaliana. PhD Dissertation. Louisiana State University, Baton Rouge, LA	[Self-compatible or apomictic? Possibly] "Even in the absence of P. striigularis or other potential pollinators, my observations indicate that plants can still produce some seeds through self-fertilization" [related species, C. friedrichsthaliana, is self-compatible]
605	1978. Croat, T.B.. Flora of Barro Colorado Island. Stanford University Press, Stanford, CA	[Requires specialist pollinators? Probably Yes] "Euglossine bees are probably responsible for pollination of Chrysothemis…"
605	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Requires specialist pollinators? Probably Yes] "The pollinators of Chrysothemis are not known for certain, but euglossine bees are suspected."
605	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Requires specialist pollinators? Yes] "Fruit a capsule, infrequently formed in cultivation." [Presumably due to lack of pollination."
605	2007. Carlson, J.E.. Floral traits, pollinator behavior, and plant reproduction: tests of natural and sexual selection in the hummingbird-pollinated herb Chrysothemis friedrichsthaliana. PhD Dissertation. Louisiana State University, Baton Rouge, LA	[Requires specialist pollinators? Probably Yes. Related species hummingbird pollinated] "Chrysothemis friedrichsthaliana is presumed to be hummingbird pollinated (Lu and Mesler, 1981), but this has never been verified. Of the 12+ hummingbird species that occur at Centro Tropical of the Fundacíon Neotrópica, only the stripe-throated hermit, Phaethornis striigularis saturatus Ridgeway (Trochilidae: Phaethornithinae; Figure 4.1), is a frequent visitor to C. friedrichsthaliana plants"
606	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? Yes] "Propagate by cuttings and bulbils."
606	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Reproduction by vegetative fragmentation? Yes] "In Puerto Rico at least, this plant is stealthy and invasive. It just showed up in my containers a year ago, and despite not setting seed, has hopped it's way around all of my containers. It forms thick tubers beneath the ground, that happily re-sprout if the main shoots are cut off."
607	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Minimum generative time (years)? Unknown] "Plants are easily propagated by stem cuttings, singe node cuttings, or tuber division." [Regardless of when plants can flower, plant can be grown vegetatively]
607	2012. Plant This. Chrysothemis pulchella. http://www.plantthis.com.au/plant-information.asp?gardener=11329	[Minimum generative time (years)? Unknown] "Growth rate: average"

701	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "In Puerto Rico at least, this plant is stealthy and invasive. It just showed up in my containers a year ago, and despite not setting seed, has hopped it's way around all of my containers. It forms thick tubers beneath the ground, that happily re sprout if the main shoots are cut off. It's only saving grace is that is does not choke out other plants, it is living comfortably with a Calathea, philodendron, and a walking iris, and other plants appreciate the shade they're given in return. Still, it laughs at any attempts to cut or dig it out." [Although disposal of garden waste or cuttings may result in inadvertent dispersal]
702	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "...widely cultivated for its red and orange flowers."
702	2012. Top Tropicals. Chrysothemis pulchella. http://toptropicals.com/catalog/uid/Chrysothemis_pulchella.htm	[Propagules dispersed intentionally by people? Yes] "Chrysothemis pulchella (beautiful) is the most widespread species, the most variable, and the one found most often in cultivation."
703	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules likely to disperse as a produce contaminant? No] "Fruit a capsule, infrequently formed in cultivation." … "Propagate by cuttings and bulbils." [Unlikely if seeds are rarely produced]
704	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Propagules adapted to wind dispersal? No] "Fruit a fleshy pubescent capsule surrounded by the persistent calyx, ovoid, glabrescent, ca. 6 mm in diam.;
705	2007. Weber, A./Skog, L.E.. The genera of Gesneriaceae. Basic information with illustration of selected species. Ed. 2.. http://www.genera-gesneriaceae.at	[Propagules water dispersed? No] "Pollination is probably by euglossine bees and/or hummingbirds, and seed dispersal possibly by ants which are attracted by the fleshy funiculi."
706	1978. Woodson, Jr.; R.E./Schery, R.W./Skog, L.E.. Flora of Panama. Part IX. Family 175. Gesneriaceae. Annals of the Missouri Botanical Garden. 65(3): 783-996.	[Propagules bird dispersed? Possibly, if produced] "Ants are possibly responsible for seed dispersal, attracted by the fleshy funiculi." … "Fruit a fleshy pubescent capsule surrounded by the persistent calyx, ovoid, glabrescent, ca. 6 mm in diam.; seeds dark brown, ellipsoidal or rhombic with prominent diagonal striations, ca. 0.5 mm long, the funiculus whitish." [Fleshiness may be an adaptation for ant dispersal]
707	2007. Weber, A./Skog, L.E.. The genera of Gesneriaceae. Basic information with illustration of selected species. Ed. 2.. http://www.genera-gesneriaceae.at	[Propagules dispersed by other animals (externally)? Yes, if produced] "Pollination is probably by euglossine bees and/or hummingbirds, and seed dispersal possibly by ants which are attracted by the fleshy funiculi."
707	2010. Gordon, D.R./Mitterdorfer, B./Pheloung, P.C. et al.. Guidance for addressing the Australian Weed Risk Assessment questions. Plant Protection Quarterly. 25(2): 56-74.	[Propagules dispersed by other animals (externally)? Yes, if produced] "...This dispersal group includes seeds with an oily or fat-rich organ that aids in ant seed dispersal…"
708	2007. Weber, A./Skog, L.E.. The genera of Gesneriaceae. Basic information with illustration of selected species. Ed. 2.. http://www.genera-gesneriaceae.at	[Propagules survive passage through the gut? Unknown] "...seed dispersal possibly by ants which are attracted by the fleshy funiculi." [Seeds, if produced, probably not likely to be dispersed internally]
801	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Prolific seed production (>1000/m2)? No] "Fruit a capsule, infrequently formed in cultivation."
801	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Prolific seed production (>1000/m2)? No] "Seed Collecting: N/A: plant does not set seed"
802	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Evidence that a persistent propagule bank is formed (>1 yr)? Unlikely] "Fruit a capsule, infrequently formed in cultivation." … "Propagate by cuttings and bulbils." [Probably does not form any seed bank in Hawaii, but tubers may persist]
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] "Storage Behaviour: Orthodox Storage Conditions: Long-term storage under IPGRI preferred conditions at RBG Kew, WP. Oldest collection 18 years; germination change 100 to 90%, 14 years, 1 collection" [Seed storage data are for Chrysothemis friedrichsthaliana. Unknown for C. pulchella]
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2012. Dave's Gardern. PlantFiles: Chrysothemis - Chrysothemis pulchella 'Black Flamingo'. http://davesgarden.com/guides/pf/go/72716/	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "It forms thick tubers beneath the ground, that happily re-sprout if the main shoots are cut off."

805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]