

Family: Amaryllidaceae

Taxon: *Scadoxus multiflorus*

Synonym: *Haemanthus katherinae* Baker [= *Scadoxus* n] **Common Name:** Fireball lily

Haemanthus multiflorus Martyn [= *Scadoxus*] Blood lily

Haemanthus zambesiacus Baker [= *Scadoxus*] Blood flower

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score -1
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	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	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)	n
401 Produces spines, thorns or burrs			y=1, n=0	n
402 Allelopathic			y=1, n=0	n
403 Parasitic			y=1, n=0	n
404 Unpalatable to grazing animals			y=1, n=-1	n
405 Toxic to animals			y=1, n=0	y
406 Host for recognized pests and pathogens			y=1, n=0	n
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	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	n

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	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
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, 3 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	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
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	n
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	n
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: L

WRA Score: -1

Supporting Data:

101	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Is the species highly domesticated? No] No evidence
101	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	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication. NA	
103	2012. WRA Specialist. Personal Communication. NA	
201	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	[Species suited to tropical or subtropical climate(s) 2- High] "Scadoxus multiflorus is widely distributed in tropical Africa and extending to Yemen and south as far as the eastern Cape region of South Africa."
202	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	[Quality of climate match data 2-high] "Scadoxus multiflorus is widely distributed in tropical Africa and extending to Yemen and south as far as the eastern Cape region of South Africa."
203	1996. Neuwinger, H.D.. African ethnobotany: poisons and drugs : chemistry, pharmacology, toxicology. CRC Press, Boca Raton, FL	[Broad climate suitability (environmental versatility)? Yes] "Distribution: widespread in tropical Africa, except in the driest regions, from lowland to mountain forest at 2700 m, secondary forest, forest margins, savannah woodland, open grassland, very common in the shade of trees, at river banks."
203	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	[Broad climate suitability (environmental versatility)? Yes] "Scadoxus multiflorus is widely distributed in tropical Africa and extending to Yemen and south as far as the eastern Cape region of South Africa." [Broad range]
204	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	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Scadoxus multiflorus is widely distributed in tropical Africa and extending to Yemen and south as far as the eastern Cape region of South Africa."
205	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	[Does the species have a history of repeated introductions outside its natural range? Yes] "It has been cultivated for many years and is now widely dispersed outside Africa. It is occasionally cultivated in Hawaii as a specimen plant, curiosity, or collector's item."
301	1996. Whistler, W.A.. Botanical Survey of Diego Garcia Archipelago, British Indian Ocean Territory. Isle Botanica, Honolulu, HI	[Naturalized beyond native range? No evidence from Diego Garcia] Listed among Cultivated plants.
301	2005. Wagner, W.L./Herbst, D.R./Lorence, D.H.. Flora of the Hawaiian Islands website. Smithsonian Inst., Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm	[Naturalized beyond native range? No evidence from Hawaiian Islands]
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] "Scadoxus multiflorus (Martyn) Raf. ssp. multiflorus; Amaryllidaceae; cultivated only"
301	2011. Jaramillo Diaz, P./Guézou, A./Mauchamp, A./Tye, A.. CDF Checklist of Galapagos Flowering Plants. In: Bungartz, F. et al. (eds.). Charles Darwin Foundation Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www.darwinfoundation.org/galapagos/	[Naturalized beyond native range? No evidence in Galapagos] "Taxon introduced for agricultural or domestic use; not naturalized."
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 - 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, arising from a bulb. Leaves spirally arranged, blade elliptic to oblanceolate, usually 15-35 cm long (6-14 in), lacking a distinct midvein, glabrous, with a winged, clasping, petiole."
402	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Allelopathic? No] No evidence to suggest allelopathy
402	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	[Allelopathic? No] No evidence to suggest allelopathy
403	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Parasitic? No] "Herb, perennial, arising from a bulb. Leaves spirally arranged, blade elliptic to oblanceolate, usually 15-35 cm long (6-14 in), lacking a distinct midvein, glabrous, with a winged, clasping, petiole." [Amaryllidaceae. Not parasitic]
404	1996. Neuwinger, H.D.. African ethnobotany: poisons and drugs : chemistry, pharmacology, toxicology. CRC Press, Boca Raton, FL	[Unpalatable to grazing animals? No] "The high toxicity of the plant is beyond doubt. Poisoning occurs mainly in goats and sheep from grazing on the leaves of the plant during the dry weather when there is a scarcity of more palatable forage." [Despite toxicity, foliage is still palatable]
405	1996. Neuwinger, H.D.. African ethnobotany: poisons and drugs : chemistry, pharmacology, toxicology. CRC Press, Boca Raton, FL	[Toxic to animals? Yes] "The high toxicity of the plant is beyond doubt. Poisoning occurs mainly in goats and sheep from grazing on the leaves of the plant during the dry weather when there is a scarcity of more palatable forage."
405	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Toxic to animals? Yes] "It is poisonous to livestock."
406	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	[Host for recognized pests and pathogens? No] "Thrips may attack the young leaves or scape and can be controlled with malathion."
407	2012. South African National Biodiversity Institute. PlantzAfrica.com - Scadoxus multiflorus. http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Causes allergies or is otherwise toxic to humans? Yes] "These plants are poisonous. The genus Scadoxus contains alkaloid-rich, strongly toxic plants. Two species Scadoxus multiflorus and Scadoxus cinnabarinus are known to be used a number of other plants, as an arrow poison. In Guinea and northern Nigeria the bulbs are used to make a fishing poison. The bulb is also used to treat dropsy, scabies and poorly healing wounds. In South Africa, Scadoxus puniceus appears to be more commonly used where it is used to treat coughs and gastro-intestinal problems and forms part of a medicine taken during pregnancy to ensure a safe delivery. Please be warned that these alkaloids are highly toxic and their indiscriminate use is potentially lethal."
408	2004. Poorter, L.. Biodiversity of West African forests: an ecological atlas of woody plant species. CABI, Wallingford, UK	[Creates a fire hazard in natural ecosystems? No] "Life form: perennial bulbous ground herb." ... "Forest type: wet evergreen forest, moist evergreen forest, secondary forest, gallery and riverine forest." [No evidence, and unlikely given somewhat succulent growth form]
409	1995. Sheat, B./Schofield, G.. Complete Gardening in Southern Africa. Struik Publishers, Cape Town, South Africa	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Both species enjoy shade - in nature they are usually found growing where a large rock affords them shadow for much of the day."
409	2001. Howard, T.M./Howard, T.M.. Bulbs for Warm Climates. University of Texas Press, Austin, TX	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It prefers shade and is easy to grow under trees, flowering in early summer."
409	2004. Poorter, L.. Biodiversity of West African forests: an ecological atlas of woody plant species. CABI, Wallingford, UK	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It regenerates in shade (Hall & Swaine 1981)."
409	2012. South African National Biodiversity Institute. PlantzAfrica.com - Scadoxus multiflorus ssp katherinae. http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Scadoxus multiflorus ssp katherinae is an evergreen, summer growing perennial that requires semi-shade and will flourish even in heavy shade."

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 (or limestone conditions if not a volcanic island)? No] "Blood lily requires well-drained, fertile, sandy-loamy soil and a sunny exposure and is intolerant of disturbance to the roots."
410	2012. South African National Biodiversity Institute. PlantzAfrica.com - Scadoxus multiflorus. http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Tolerates a wide range of soil conditions? No] "Scadoxus rootstocks are planted just below the ground and are best left undisturbed in the same position for many years. The soil must be well-drained, rich and light, with plenty of leaf-mould or well-rotted compost. The plants benefit greatly from regular liquid feeding. Scadoxus multiflorus ssp katherinae likes plentiful water when in active growth, but dislikes water-logged soils. In winter rainfall areas, it has no trouble surviving the wet winters, provided it is in a well-drained position."
411	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Climbing or smothering growth habit? No] "Herb, perennial, arising from a bulb. Leaves spirally arranged, blade elliptic to oblanceolate, usually 15-35 cm long (6-14 in), lacking a distinct midvein, glabrous, with a winged, clasping, petiole."
412	2001. Howard, T.M./Howard, T.M.. Bulbs for Warm Climates. University of Texas Press, Austin, TX	[Forms dense thickets? No] No evidence
412	2004. Poorter, L.. Biodiversity of West African forests: an ecological atlas of woody plant species. CABI, Wallingford, UK	[Forms dense thickets? No] No evidence
412	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	[Forms dense thickets? No] No evidence
501	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Aquatic? No] "Herb, perennial, arising from a bulb. Leaves spirally arranged, blade elliptic to oblanceolate, usually 15-35 cm long (6-14 in), lacking a distinct midvein, glabrous, with a winged, clasping, petiole." [Terrestrial]
502	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Grass? No] Amaryllidaceae
503	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Nitrogen fixing woody plant? No] Amaryllidaceae
504	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers) Yes] "After the growing season the plant reverts to a leafless bulb until the next flowering season, so the plant is inconspicuous or unseen most of the year."
504	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	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "Deciduous herb; bulbs to 2.5" ..."
601	1994. Jones, M.. Flowering plants of the Gambia. CRC Press, Boca Raton, FL	[Evidence of substantial reproductive failure in native habitat? No] No evidence
601	1996. Neuwinger, H.D.. African ethnobotany: poisons and drugs : chemistry, pharmacology, toxicology. CRC Press, Boca Raton, FL	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1991. Pienaar, K.. Gardening with indigenous plants. Struik, Cape Town, S.A.	[Produces viable seed? Yes] "It grows from seed or is propagated vegetatively by division of the underground, modified stems."
602	2003. Tenenbaum, F.. Taylor's encyclopedia of garden plants. Houghton Mifflin Harcourt, New York, NY	[Produces viable seed? Yes] "Propagate by separating offsets in early spring or by seeds."
602	2004. Poorter, L.. Biodiversity of West African forests: an ecological atlas of woody plant species. CABI, Wallingford, UK	[Produces viable seed? Yes] "The seeds germinate after 3-6 weeks, with a high germination success (90-100%)."
602	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	[Produces viable seed? Yes] "Propagation is usually by removal of offsets from around mature plants or by seed (if produced)."
603	2008. Funnell, K.A.. Growing Degree-day Requirements for Scheduling Flowering of Scadoxus multiflorus subsp. Katharinae (Baker) Friis & Nordal. Hortscience. 43(1): 166-169.	[Hybridizes naturally? Unknown] "When continuously exposed to temperatures of 5 °C or less for 55 d or longer, Peters (1974) reported damage to plants of 'Konig Albert', a hybrid between S. multiflorus subsp. katherinae (Baker) Friis & Nordal and Scadoxus puniceus (L.) Friis & Nordal." [A hybrid cultivar, but unknown if able to hybridize naturally]

603	2012. Pacific Bulb Society. Scadoxus. http://www.pacificbulbsociety.org/pbswiki/index.php/Scadoxus	[Hybridizes naturally? Unknown] "Scadoxus 'In Rainbows' (<i>S. membranaceus</i> × <i>S. multiflorus</i> ssp. <i>katharinæ</i>) This hybrid took approx. 10 years from seed formation to first flowering in February 2011. The leaves are intermediate between the two species, ie. 190 x 95mm. Pseudostem approximately 90mm. Scape approximately 250mm tall. The false stem and scape are heavily spotted with brown blotches (as per the seed parent). The scape bracts are green. Perigone segments are approximately 20 x 2mm, and salmon pink (as per the pollen parent). The anther filaments are bright orange. This hybrid was registered by the Dutch KAVB (The RHS's official registering body for Amaryllidaceae) in March, 2011. Photographs by the hybridiser Jaco Truter."
604	2012. Floral Architecture. Scadoxus membranaceus. http://www.floralarchitecture.com/price_list.php?genusname=SCADOXUS	[Self-compatible or apomictic? Unknown] "Scadoxus membranaceus - This small evergreen Clivia and Amaryllis relative has something for everyone. It makes a great evergreen foliage plant in the house or garden in zones 10 and higher. In the late winter to early spring, a small flower scape is produced and is quite interesting to look at for several weeks. They are very self fertile and the bright orange berries quickly follow." [Related species purportedly self-fertile, but evidence for <i>S. multiflorus</i> not found]
605	1994. Jones, M.. Flowering plants of the Gambia. CRC Press, Boca Raton, FL	[Requires specialist pollinators? Possibly No] "The flowers are frequented by a range of insects, particularly butterflies."
605	2012. Hodgkiss, R.J.. The Succulent Plant Page - The Amaryllis Page. http://www.succulent-plant.com/families/maryllidaceae.html	[Requires specialist pollinators? Possibly No] "The flowers are pollinated by large butterflies."
606	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	[Reproduction by vegetative fragmentation? Possibly] "Propagation is usually by removal of offsets from around mature plants or by seed (if produced)."
607	2012. South African National Biodiversity Institute. PlantzAfrica.com - Scadoxus multiflorus. http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Minimum generative time (years)? 3+] "Flowers can be expected from the third season onwards."
701	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	[Propagules likely to be dispersed unintentionally? No] "Frt a fleshy berry, orange to red. Seeds 1-3, pale." [No evidence, & no means of external attachment]
702	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	[Propagules dispersed intentionally by people? Yes] "It has been cultivated for many years and is now widely dispersed outside Africa. It is occasionally cultivated in Hawaii as a specimen plant, curiosity, or collector's item."
703	2012. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence of produce contamination
704	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	[Propagules adapted to wind dispersal? No] "Frt a fleshy berry, orange to red. Seeds 1-3, pale."
705	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	[Propagules water dispersed? No] "Frt a fleshy berry, orange to red. Seeds 1-3, pale." [Adapted for internal vertebrate dispersal]
706	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules bird dispersed? Yes] "Fruit a red one- to three-seeded berry."
706	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	[Propagules bird dispersed? Yes. If produced] "Frt a fleshy berry, orange to red. Seeds 1-3, pale."
706	2006. Pacific Bulb Society. September 2006 Archives by thread - Scadoxus multiflorus seed. http://lists.ibiblio.org/pipermail/pbs/2006-September/014822.html	[Propagules bird dispersed? Yes] "Hi John, I can verify that <i>Scadoxus puniceus</i> seed is eaten by birds and emerges clean and whole from their droppings. Last November a crop of <i>Scadoxus</i> berries had ripened on five umbels and I noted that I would collect and sow them the following weekend. When I went to collect them I was amazed to find that only 7 berries were left (out of 120+). Near the <i>Scadoxus</i> plants I found a few berries on a low brick fence in bird droppings - a few more were found in a nearby garden bed alongside the fence line - in bird droppings? Cheers Jim"

706	2012. South African National Biodiversity Institute. PlantzAfrica.com - <i>Scadoxus multiflorus</i> . http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Propagules bird dispersed? Yes] "The seed develops in the inferior ovary which is visible as a swelling of the flower stalk below the flower, at the tip of the pedicel. These will swell to form a green berry that will turn scarlet as it ripens during winter-spring (July - September). These decorative berries can remain on the plant for up to 2 months." ... "Propagation is by seed and offsets. The seed should be sown as soon as it is ripe. This does not necessarily mean that the berries must be removed the minute they turn red. If they are not under threat from birds, or curious children, they can be left on without harming the seed until they start to look a bit wrinkled, which should be around early spring."
707	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	[Propagules dispersed by other animals (externally)? No] "Fr a fleshy berry, orange to red. Seeds 1-3, pale." [No means of external attachment]
708	2012. South African National Biodiversity Institute. PlantzAfrica.com - <i>Scadoxus multiflorus</i> . http://www.plantzafrica.com/plantqrs/scadoxkath.htm	[Propagules survive passage through the gut? Presumably Yes] "The seed develops in the inferior ovary which is visible as a swelling of the flower stalk below the flower, at the tip of the pedicel. These will swell to form a green berry that will turn scarlet as it ripens during winter-spring (July - September). These decorative berries can remain on the plant for up to 2 months." ... "Propagation is by seed and offsets. The seed should be sown as soon as it is ripe. This does not necessarily mean that the berries must be removed the minute they turn red. If they are not under threat from birds, or curious children, they can be left on without harming the seed until they start to look a bit wrinkled, which should be around early spring."
801	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	[Prolific seed production (>1000/m ²)? No] "Propagation is usually by removal of offsets from around mature plants or by seed (if produced)." [Unlikely, if rarely produced in cultivation]
802	2003. Tweddle, J.C./Dickie, J.B./Baskin, C.C./Baskin, J.M.. Ecological aspects of seed desiccation sensitivity. Journal of Ecology. 91: 294–304.	[Evidence that a persistent propagule bank is formed (>1 yr)? Possibly No] "The only completely terrestrial example detailed in SID is <i>Scadoxus membranaceus</i> (Bak.) I. Friis & I. Nordal (Amaryllidaceae; Farrant et al. 1989), an understorey woodland herb native to South Africa. On the basis of seed characteristics and wider species ecology it seems likely that other members of the genus (and possibly <i>Haemanthus</i>) will also have desiccation sensitive seeds." [Related species and entire genus speculated to have seeds that might not persist in seed bank]
802	2012. Pacific Bulb Society. <i>Scadoxus</i> . http://www.pacificbulbsociety.org/pbswiki/index.php/Scadoxus	[Evidence that a persistent propagule bank is formed (>1 yr)? Apparently No] "Collect seeds when they have turned red and fall off the plant or at least fall into your hand when touched. Then remove the fleshy coating from the seeds. The period of viability is rather short compared to other seed -- even to <i>Haemanthus</i> seed (Doug Westfall). "
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	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, or benefits from, mutilation, cultivation, or fire? No] "Blood lily requires well-drained, fertile, sandy-loamy soil and a sunny exposure and is intolerant of disturbance to the roots."
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown] No evidence