Family: ***Euphorbiaceae***

Taxon: ***Euphorbia punicea***

Synonym: *Adenorima punicea (Sw.) Raf.*
Euphorbia troyana Urb.
Euphorbiodendron puniceum (Sw.) Millsp.
Euphorbiodendron troyanum (Urb.) Millsp.
Poinsettia punicea (Sw.) Klotzsch & Garcke
Tithymalus puniceus (Sw.) Haw.

Common Name: flame of Jamaica
vegetable leather
Jamaican poinsettia

Questionaire : current 20090513 **Assessor:** Assessor **Designation:** L
Status: Assessor Approved **Data Entry Person:** Assessor **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**	**n**
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)**	**y**
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**	**n**
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**	**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**	
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**	**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**	
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	
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**	
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** 3

Supporting Data:

101	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Is the species highly domesticated? No evidence] "Thanks to its common distribution in its natural habitat and its striking good looks, Euphorbia punicea has been known for a long time. It was introduced to England by a Matthew Wallen in 1778 and was described 10 years later by Swartz. After another 30 years (1818) it was portrayed in some detail in an article in Curtis's Botanical Magazine."
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 2-High] "Native: … Caribbean: Jamaica"
202	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data 2-High]
203	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Broad climate suitability (environmental versatility)? No] "zones 10-11"
203	2013. Dave's Garden. PlantFiles: Jamaican Poinsettia - Euphorbia punicea. http://davesgarden.com/guides/pf/go/72804/ [Accessed 27 Sep 2013]	[Broad climate suitability (environmental versatility)? No] "Hardiness: USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
204	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native: … Caribbean: Jamaica"
205	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Does the species have a history of repeated introductions outside its natural range?] "The natural habitat of Euphorbia punicea is in Jamaica. It can also be found on the Bahamas, Cuba and the Virgin Island – most likely as an introduced species; E. punicea has also been introduced in the southern USA."
301	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? No] No evidence
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No] No evidence
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No] No evidence
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No] No evidence
305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Congeneric weed? Yes] "Euphorbia esula…spreads by seeds and by vegetative growth from the rootstock. It rapidly expands and forms large and dense patches that displace native grasses and forbs."
401	2013. Learn 2 Grow. Euphorbia punicea. http://www.learn2grow.com/plants/euphorbia-punicea/ [Accessed 27 Sep 2013]	[Produces spines, thorns or burrs? No] "Sharp or Has Thorns - No"
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2008. Griffiths, M./Bernstein, H./Collins, M./Davenport, M./Kent, M./Lopez, J./Neugent, K.. 2008 Plants of the Year. The Tropical Garden. Winter: 24-29.	[Parasitic? No] "Evergreen shrub or small tree to 20'" [Euphorbiaceae]
404	2013. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown] Possibly unpalatable due to toxic, milky latex
405	2007. New Sprout. Euphorbia punicea. http://newsprout.blogspot.com/2007/11/euphorbia-gymnonota.html [Accessed 29 Sep 2013]	[Toxic to animals? Yes] "The plant is poisonous to mammals."

405	2013. Dave's Garden. PlantFiles: Jamaican Poinsettia - Euphorbia punicea. http://davesgarden.com/guides/pf/go/72804/ [Accessed 27 Sep 2013]	[Toxic to animals? Yes] "Danger: Parts of plant are poisonous if ingested"
406	2012. Brito, J.A./Han, H./Stanley, J.D.. Nematology Section. Tri-ology. 51(5): 9-10.	[Host for recognized pests and pathogens?] "Meloidogyne enterolobii, a root knot nematode, has been reported in several parts of the world. In Florida, this nematode species was first detected in 2001 infecting unidentified ornamental plants. Since that time, it has spread to several ornamental plants, herbs, vegetables, fruit trees and weeds. Recently, Euphorbia punicea (Jamaican poinsettia), an evergreen shrub with dark green leaves and red bracts was found parasitized with M. enterolobii. The root systems were heavily galled and had already started rotting."
407	2008. Griffiths, M./Bernstein, H./Collins, M./Davenport, M./Kent, M./Lopez, J./Neugent, K.. 2008 Plants of the Year. The Tropical Garden. Winter: 24-29.	[Causes allergies or is otherwise toxic to humans? Yes] "Danger: Parts of plant are poisonous if ingested"
407	2012. Queensland Government. Waterwise Plant Selector - Flame of Jamaica (Euphorbia punicea). http://www.nrm.qld.gov.au/waterwise/plantselector/details.php?plant_id=2026 [Accessed 27 Sep 2013]	[Causes allergies or is otherwise toxic to humans? Yes] "Other notes: Harmful if eaten, skin & eye irritant"
408	2013. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems? Unknown] Grows in drier areas, but succulent. Flammability of plant unknown.
409	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Is a shade tolerant plant at some stage of its life cycle? No] "Full sun."
409	2007. New Sprout. Euphorbia punicea. http://newsprout.blogspot.com/2007/11/euphorbia-gymnonota.html [Accessed 29 Sep 2013]	[Is a shade tolerant plant at some stage of its life cycle? No] "It needs full sun and likes dry, poor, sandy well drained soil."
410	2013. Learn 2 Grow. Euphorbia punicea. http://www.learn2grow.com/plants/euphorbia-punicea/ [Accessed 27 Sep 2013]	[Tolerates a wide range of soil conditions? Yes] "Grow Jamaican poinsettia in full to partial sun in any soil that is fast-draining." … "Soil pH - Acidic, Neutral, Alkaline" … "Soil type - Clay, Loam, Sand"
411	2008. Griffiths, M./Bernstein, H./Collins, M./Davenport, M./Kent, M./Lopez, J./Neugent, K.. 2008 Plants of the Year. The Tropical Garden. Winter: 24-29.	[Climbing or smothering growth habit? No] "Evergreen shrub or small tree to 20'"
412	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Forms dense thickets? Mo evidence] "According to Fawcett & Rendle (1920) it grows commonly in the mountains and forms bushes or trees 3 metres high, or sometimes even 10 metres high."
501	2008. Griffiths, M./Bernstein, H./Collins, M./Davenport, M./Kent, M./Lopez, J./Neugent, K.. 2008 Plants of the Year. The Tropical Garden. Winter: 24-29.	[Aquatic? No] "Euphorbia punicea, known as the flame of Jamaica, is an evergreen succulent shrub to small tree found only on the sunny island of Jamaica."
502	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Euphorbiaceae
503	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Euphorbiaceae
504	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "...forms bushes or trees 3 metres high, or sometimes even 10 metres high."
601	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Evidence of substantial reproductive failure in native habitat? Possibly No] "Thanks to its common distribution in its natural habitat and its striking good looks, Euphorbia punicea has been known for a long time."
601	2013. National Tropical Botanical Gardens. Featured Plants at The Kampong. http://ntbg.org/gardens/kampong-plants.php [Accessed 27 Sep 2013]	[Evidence of substantial reproductive failure in native habitat? Possibly Yes] "Native to Jamaica and Cuba where it is rare in both and grows naturally on limestone in dry woodlands, Jamaican poinsettia is listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which regulates trade of the plant to avoid extinction in the wild."
602	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Produces viable seed? Yes] "Fortunately these big flowers are easily produced while at the same time this species is said to be easily propagated by cuttings or seeds."

603	2013. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Self-compatible or apomictic? Possibly No] "After pollinating the female flowers with pollen from the same plant (as we have only one clone in cultivation) one seems successful at first, because for some time fruits start to develop. But later on these fruits will wilt so that seeds have never been produced."
605	2008. Griffiths, M./Bernstein, H./Collins, M./Davenport, M./Kent, M./Lopez, J./Neugent, K.. 2008 Plants of the Year. The Tropical Garden. Winter: 24-29.	[Requires specialist pollinators? No] "Warblers and honey bees visit throughout the day, taking advantage of the abundant sweet nectar."
606	2012. Brito, J.A./Han, H./Stanley, J.D.. Nematology Section. Tri-ology. 51(5): 9-10.	[Reproduction by vegetative fragmentation? No] "However, my own experience on this subject is different: Cuttings can be rooted only with great difficulty and are very slow." [Unlikely given difficulty in getting cuttings rooted]
607	2013. Learn 2 Grow. Euphorbia punicea. http://www.learn2grow.com/plants/euphorbia-punicea/ [Accessed 27 Sep 2013]	[Minimum generative time (years)? Unknown] "Growth Rate: Medium"
701	2013. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unknown] No evidence, and seeds lack any means of external attachment. Small size may aid in dispersal, but limited information is available about the dispersal ecology of this species.
702	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "Unusual in cultivation, but highly recommended."
703	2013. Puccio, P.. Euphorbia punicea. http://www.photomazza.com/?Euphorbia-punicea [Accessed 27 Sep 2013]	[Propagules likely to disperse as a produce contaminant? No] "Unusual in cultivation, but highly recommended." [No evidence, and unlikely given rarity in cultivation, and limited use as an ornamental]
704	2013. Puccio, P.. Euphorbia punicea. http://www.photomazza.com/?Euphorbia-punicea [Accessed 27 Sep 2013]	[Propagules adapted to wind dispersal? No] "The fruits are ovoid capsules containing seeds, ovoid too, which, when ripe, are expelled and thrown at a great distance." [Dehiscence and gravity, although wind may facilitate dispersal]
705	2013. Puccio, P.. Euphorbia punicea. http://www.photomazza.com/?Euphorbia-punicea [Accessed 27 Sep 2013]	[Propagules water dispersed? Unknown] "The fruits are ovoid capsules containing seeds, ovoid too, which, when ripe, are expelled and thrown at a great distance." [No specific adaptations for water dispersal, but water may aid in dispersal away from parent plant after seeds have dehisced]
706	2013. Puccio, P.. Euphorbia punicea. http://www.photomazza.com/?Euphorbia-punicea [Accessed 27 Sep 2013]	[Propagules bird dispersed? No] "The fruits are ovoid capsules containing seeds, ovoid too, which, when ripe, are expelled and thrown at a great distance."
707	2013. Puccio, P.. Euphorbia punicea. http://www.photomazza.com/?Euphorbia-punicea [Accessed 27 Sep 2013]	[Propagules dispersed by other animals (externally)? No] "The fruits are ovoid capsules containing seeds, ovoid too, which, when ripe, are expelled and thrown at a great distance."
708	2006. van Veldhuisen, R.. Some notes on Euphorbia punicea Swartz and related species. Euphorbia World. 1(3): 5-8.	[Propagules survive passage through the gut? Unknown. Unlikely to be consumed and internally dispersed] "The fruits are ovoid capsules containing seeds, ovoid too, which, when ripe, are expelled and thrown at a great distance."
801	2013. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m2)? Unknown]
802	2013. WRA Specialist. Personal Communication.	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown]
803	2013. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species.
804	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown] Other Euphorbia species are capable of resprouting when cut or pruned.
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Grows in tropical climates
- Related Euphorbia species have become invasive
- Sap toxic and an irritant to animals and people
- Tolerates many soil types
- Seeds dispersed by dehiscent capsules & people
- Limited ecological information from native and introduced ranges makes accurate risk predications difficult

Low Risk Traits

- No reports of naturalization or invasiveness world wide (but outdoor cultivation in tropical climates may be limited)
- Requires full sun
- Showy flowers
- Limited seed production in cultivation