

Family: *Araceae*

Taxon: *Philodendron bipinnatifidum*

Synonym: *Philodendron lundii* Warm.
Philodendron selloum K. Koch

Common Name: cut-leaf philodendron
tree philodendron
selloum
self-header
banana-de-macaco

Questionnaire : current 20090513
Status: Assessor Approved

Assessor: Assessor
Data Entry Person: Assessor

Designation: L

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)	
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	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	
411	Climbing or smothering growth habit	y=1, n=0	
412	Forms dense thickets	y=1, n=0	
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	y
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
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	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
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	y
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 -1

Supporting Data:

101	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Is the species highly domesticated? No]
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: SOUTHERN AMERICA Brazil: Brazil [s.] Western South America: Bolivia - Santa Cruz Southern South America: Argentina [n.]; Paraguay"
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	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Broad climate suitability (environmental versatility)? Yes. Environmentally Versatile] "It is a popular landscape plant across USDA hardiness zones 8B through 11. Highly valued for its dramatic tropical appearance, <i>Philodendron bipinnatifidum</i> is also used in interiors and protected areas outside its hardiness range. It tolerates a wide variety of environmental conditions from low to high light and moisture levels and has relatively few pest problems."
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: SOUTHERN AMERICA Brazil: Brazil [s.] Western South America: Bolivia - Santa Cruz Southern South America: Argentina [n.]; Paraguay"
205	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Does the species have a history of repeated introductions outside its natural range? Yes] " <i>Philodendron bipinnatifidum</i> is a large leaved self-heading philodendron. It is a popular landscape plant across USDA hardiness zones 8B through 11. Highly valued for its dramatic tropical appearance, <i>P. bipinnatifidum</i> is also used in interiors and protected areas outside its hardiness range."
301	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Naturalized beyond native range? No evidence in Puerto Rico] " <i>Philodendron bipinnatifidum</i> Schott ex Endl. with large deeply pinnatifid leaves, is sometimes cultivated as an ornamental in Puerto Rico (Hato Rey, Pennock's Nursery, Howard & Nevling 16928, US);"
301	2008. Foxcroft, L.C./Richardson, D.M./Wilson, J.R.U.. Ornamental Plants as Invasive Aliens: Problems and Solutions in Kruger National Park, South Africa. Environmental Management. 41: 32-51.	[Naturalized beyond native range? No] "Table 2 Ornamental alien plant species recorded per camp in the Kruger National Park, indicating the number of camps in which each species has been recorded, as well as mode of introduction" [<i>Philodendron bipinnatifidum</i> (= <i>P. selloum</i>) - Evidence of naturalization? = No]
301	2011. Guézou, A. et al.. CDF Checklist of Galapagos Introduced Plants. In: Bungartz, F. et al. (eds.). CDF Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www.darwinfoundation.org/datazone/checklists/ecological-group	[Naturalized beyond native range? No evidence] " <i>Philodendron bipinnatifidum</i> - Origin: Introduced, Cultivated."
301	2012. Imada, C.. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Technical Report 60. Bishop Museum, Honolulu, HI	[Naturalized beyond native range? No evidence for Hawaiian Islands]
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/hawaiianflora/supplement.htm	[Naturalized beyond native range? No evidence for Hawaiian Islands]
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? 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 evidence]

304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No evidence]
305	2001. De Costa, W.A.J.M./Hitinayake, H.M.G.S.B./Dharmawardena, I.U.. A physiological investigation into the invasive behaviour of some plant species in a mid-country forest reserve in Sri Lanka. J. Natn. Sci. Foundation Sri Lanka. 29(1 & 2): 35-50.	[Congeneric weed? P. scandens listed as invasive, but impacts unspecified] "Abstract: An introduced and naturalized plant species which increases its population excessively at the expense of other species in a given community is defined as an invasive species. The objective of this study was to determine whether some selected physiological characteristics were responsible for the invasive behaviour of eight plant species in the Udawattakelle forest reserve. These included saplings of three tree species, three shrub species and two herbaceous species" ... "Two of the early successional invasive species (i.e. Scindapsus and Philodendron) are herbaceous species"
305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No evidence. Several Philodendron species listed as naturalized, but none listed as weeds]
401	1991. Mayo, S.J.. A Revision of Philodendron Subgenus Meconostigma (Araceae). Kew Bulletin. 46(4): 601-681.	[Produces spines, thorns or burrs? No] "STEM: erect, decumbent and sprawling or semi erect, branching sparingly in basal parts, up to 3- 5m tall, 5- 13 cm diam.; adventitious roots dimorphic in epiphytic plants, anchor roots of smaller diam. attaching plant to host tree, feeder roots of larger diam. connecting stem to soil; internodes 1 mm long or less; prophyll scars short, up to about 1 cm long; intravaginal squamules sometimes absent, up to 20 mm long, 0-5- 2 -5 mm wide at base, usually triangular and ± flattened, sometimes rather massive and conic, patent, sparse to densely abundant and persistent; foliage leaf scars 4 - 6 cm long, 3-7 cm wide, circular to transverse-elliptic, paler than rest of stem surface. LEAF: prophyll deciduous, up to at least 45 cm long; petiole 70-120(150) cm long, (0 - 7 -)1 - 1 - 7 cm diam. at apex, broadly sulcate adaxially with sharply angled margins or flattened or occasionally slightly convex, rounded abaxially, sheath c. 12 cm long on leaves subtending inflorescences; leaf blade usually bipinnatifid, either weakly or very strongly so, occasionally pinnatifid, very variable in lobe and sinus shape, broadly cordiform-sagittate in outline, overall length 75-120 cm, overall width 60 - 120 cm, upper surface glossy dark green, lower surface paler, ±glossy;"
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the Philodendron bipinnatifidum complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Parasitic? No] "Plants of this species are also hemiepiphytic or terrestrial," ..."
404	2013. Martin, C.A.. Virtual Library of Phoenix Landscape Plants - Philodendron bipinnatifidum. Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/philodendronbipinnatifidum.html [Accessed 29 Oct 2013]	[Unpalatable to grazing animals? Unknown. Calcium oxalate may deter browsing] "Philodendron bipinnatifidum produces an irritating latex sap exudates as much as 0.7% of oxalates in the form of calcium oxalate crystals. These oxalates can be mildly toxic to humans causing swelling upon contact."
405	2007. Sena Filho, J.G./Pontual, K.A.Q./Ferreira, C.P./Florencio, D.C./Xavier, H.S.. Ornamental plants in Southern Brazil with toxic potential for companion animals. Pp. 55-57 in Poisonous plants: global research and solutions. CABI, Wallingford, UK	[Toxic to animals? Yes] "Cases of intoxication of pets were investigated by personal visits to residences, including homes, yards, apartments and common garden areas, in Rio Grande do Sul, Brazil, from 1998 to 2002 to determine the presence of poisonous plants. The plant species most commonly observed in cases of intoxication of pets (i.e. companion animals) were: Dieffenbachia picta [D. maculata], Sansevieria trifasciata, Allamanda cathartica, A. blanchettii, Euphorbia milii, E. pulcherrima, Lantana camara, Philodendron bipinnatifidum and Brugmansia suaveolens. This information will be useful to educate the public about the potential dangers of some common household plants to companion animals."
406	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Host for recognized pests and pathogens? No] "Philodendrons are easy to grow and almost pest and disease free."
406	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of Philodendron bipinnatifidum, syn. P. selloum. Proc. Fla. State Hort. Soc.. 119: 425-428.	[Host for recognized pests and pathogens? No] "There are few pest or disease problems associated with this plant. Bacterial disease caused by Erwinia species is sometimes a problem, especially under humid conditions."
407	1986. Fuller, T.C./McClintock, E.M.. Poisonous plants of California: Issue 53 of California natural history guides. University of California Press, Berkeley and Los Angeles, CA	[Causes allergies or is otherwise toxic to humans? Yes. Dermatitis] "Appendix A. Plants Causing Dermatitis" [List includes Philodendron bipinnatifidum]

407	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Causes allergies or is otherwise toxic to humans? No evidence] " <i>P. bipinnatifidum</i> is an important plant in indigenous cultures in Paraguay, northern Argentina and probably Brazil. In a fine paper, Crisci & Gancedo (1971) discuss the use of the roots for binding and the berries as a sweet food and medicinal source. Peckolt & Peckolt (1890) describe its medicinal properties under the names <i>P. bipinnatifidum</i> and <i>P. selloum</i> "
407	2013. Dave's Garden. PlantFiles: Tree <i>Philodendron</i> , Cut-leaf <i>Philodendron</i> , Selloum - <i>Philodendron bipinnatifidum</i> . http://davesgarden.com/guides/pf/go/37036/ [29 Oct 2013]	[Causes allergies or is otherwise toxic to humans? Yes] "All parts of plant are poisonous if ingested Handling plant may cause skin irritation or allergic reaction" ... "Beware of the sap of this plant and also the pollen on the blossom. If the sap gets on you, it leaves a stain. Some people are allergic to it. I am, and I suffered with a rash (like poison ivy) at all the points of contact. It burned and itched for 3 weeks. I am now very careful when trimming this plant."
407	2013. Floridata. <i>Philodendron bipinnatifidum</i> . http://www.floridata.com/ref/p/phil_bip.cfm [Accessed 29 Oct 2013]	[Causes allergies or is otherwise toxic to humans? Yes] " <i>Philodendrons</i> are poisonous if eaten and the sap may irritate sensitive skin."
408	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Creates a fire hazard in natural ecosystems? No. Herbaceous and occurs in wetter habitats] "Hemi-epiphytic or terrestrial in rainforest, gallery forests, and various seasonal forest types including cerrado; terrestrial or rooted-aquatic in open swampy areas, occasionally rupicolous in open shrubby coastal and submontane vegetation, alt. 0- 1000m."
409	2013. Floridata. <i>Philodendron bipinnatifidum</i> . http://www.floridata.com/ref/p/phil_bip.cfm [Accessed 29 Oct 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Light: <i>Philodendrons</i> don't like full sun. Grow tree <i>philodendron</i> in dappled or partial shade. Indoors, position in bright light, but not direct sun. Sunlight filtered through a curtain is good. Variegated cultivars need more light."
409	2013. Martin, C.A.. Virtual Library of Phoenix Landscape Plants - <i>Philodendron bipinnatifidum</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/philodendronbipinnatifidum.html [Accessed 29 Oct 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Generally, this is a surprisingly bold and tough plant that will stand much abuse as long as it is grown in shade."
410	2013. Dave's Garden. PlantFiles: Tree <i>Philodendron</i> , Cut-leaf <i>Philodendron</i> , Selloum - <i>Philodendron bipinnatifidum</i> . http://davesgarden.com/guides/pf/go/37036/ [29 Oct 2013]	[Tolerates a wide range of soil conditions ?] "Soil pH requirements: 5.6 to 6.0 (acidic) 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
410	2013. Martin, C.A.. Virtual Library of Phoenix Landscape Plants - <i>Philodendron bipinnatifidum</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/philodendronbipinnatifidum.html [Accessed 29 Oct 2013]	[Tolerates a wide range of soil conditions?] "Soil: Tolerant of alkalinity but will yellow. Prefers organic soils that are slightly acidic. Salt sensitive."
411	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Climbing or smothering growth habit? Possibly] "In hemi-epiphytic plants of <i>P. bipinnatifidum</i> and <i>P. corcovadense</i> the roots act as a system of stays to suspend the often heavy stem from adjacent tree boles"
411	2013. Floridata. <i>Philodendron bipinnatifidum</i> . http://www.floridata.com/ref/p/phil_bip.cfm [Accessed 29 Oct 2013]	[Climbing or smothering growth habit? No] "Most <i>philodendrons</i> are climbers, but not this one. Tree <i>philodendron</i> (also called split leaf <i>philodendron</i>) grows as a large semiwoody shrub with enormous glossy leaves and a single erect unbranched stem that tends to fall over and sprawl when the plant gets large."
412	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the <i>Philodendron bipinnatifidum</i> complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Forms dense thickets? Dense distribution. May exclude other vegetation] "... <i>P. bipinnatifidum</i> in the warmer and more humid coastal Atlantic forests around Bertioga and between Bertioga and Boraceia beach more commonly had a very dense local distribution occurring in smaller or larger dense bulks of hemiepiphytic and terrestrial plants, often side by side."
501	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the <i>Philodendron bipinnatifidum</i> complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Aquatic? No] " <i>Philodendron bipinnatifidum</i> is also distributed in Southeast Brazil (Engler and Krause 1912; Barroso 1959/ 61), but in the much more humid and warm coastal variant of the Atlantic forest, with yearly precipitation values between 2,000 and 4,000 mm. The coastal strip and coastal escarpment is more or less humid throughout the year and covered with tropical evergreen rainforests (littoral forests, restingas, low montane forests). Plants of this species are also hemiepiphytic or terrestrial,"
502	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Grass? No] Araceae
503	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Nitrogen fixing woody plant? No] Araceae

504	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "In hemi-epiphytic plants of <i>P. bipinnatifidum</i> and <i>P. corcovadense</i> the roots act as a system of stays to suspend the often heavy stem from adjacent tree boles..."
601	2011. Sakuragui, C.M./Calazans, L.S.B./Barroso de Morais, É./Nadruz Coelho, M.A./Octávio de Oliveira Pellegrini, M.. Diversity and conservation of <i>Philodendron</i> SCHOTT (Araceae) in Atlantic Forest of Rio de Janeiro State. Feddes Repertorium. 122: 472-496.	[Evidence of substantial reproductive failure in native habitat? No] "LC – Least Concern"
602	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Produces viable seed? Yes] "In Brazil, their country of origin, these plants are pollinated at night by a moth. The seeds then develop over several months in bubbly capsules, with about 30 seeds per capsule."
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] "It is usually propagated from seed."
602	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Produces viable seed? Yes] "Propagation: Easily propagated by seed, stem cuttings containing at least two nodes, or division of basal offshoots."
603	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Hybridizes naturally? Unknown. Artificial hybrids are possible] " <i>Philodendron</i> x <i>evansii</i> (<i>P. bipinnatifidum</i> x <i>P. speciosum</i>) A commonly cultivated taxon with a stout trunk-like stem which can sprawl and scramble as in <i>P. bipinnatifidum</i> . The large shallowly lobed leaves resemble those of <i>P. undulatum</i> "
603	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the <i>Philodendron bipinnatifidum</i> complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Hybridizes naturally? Possibly] "Nowadays, <i>P. form selloum</i> and <i>P. bipinnatifidum</i> are largely mingled by human activity. Both species because of their high ornamental value are very much appreciated and planted in gardens, larger properties and public places. Thus, plants from the coastal region were transferred to the plateau and plants from the plateau to the coastal region and also planted everywhere in between. The recent contact between these two species might have caused hybridization, eventually mediated by a beetle attracted to visit both species."
604	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the <i>Philodendron bipinnatifidum</i> complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Self-compatible or apomictic? Functionally No] " <i>Philodendron bipinnatifidum</i> also has a protogynous anthesis. We found individual inflorescences which were functional usually also during two nights, with the pistillate stage occurring during the first night and the staminate stage at the second."
605	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Requires specialist pollinators? Yes] "In the ' <i>bipinnatifidum</i> ' group flowering takes place in a 4-day cycle with 3 temperature peaks (Fig. 11 B); the peaks are lower and a different, less intense odour is produced. In this pattern, pollen is extruded shortly before resin secretion and both are associated with a temperature peak between 1800 and 1900 hr. on day 3. The spathe remains slightly open throughout the following day as the spadix temperature falls off. On day. 4 at about 1900 hr. a third temperature peak occurs (34."30) and the spathe closes. The pollinating beetles were attracted in fewer numbers and belonged to two species, <i>Cyclocephala cribrata</i> Burmeister and <i>C. variolosa</i> Burmeister (Dynastinae/Scarabaeidae). They also appeared to visit the inflorescence at each temperature peak, hence on three separate occasions."
605	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Requires specialist pollinators? Yes] "In Australia tree philodendrons don't have any insect pollinators, so they don't set seed unless pollinated by hand."
605	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Requires specialist pollinators? Yes] " <i>Philodendron bipinnatifidum</i> is pollinated by a single species of large scarabaeid beetle. Because this beetle is not present in the United States, and the female flowers on a inflorescence are receptive 48 hours before the male flowers produce pollen, hand pollination is necessary."
605	2013. Gottsberger, G./Silberbauer-Gottsberger, I./Dötterl, S.. Pollination and floral scent differentiation in species of the <i>Philodendron bipinnatifidum</i> complex (Araceae). Plant Systematics and Evolution. 299(4): 793–809.	[Requires specialist pollinators? Yes] "The differences observed and analyzed among the taxa, including the flowering rhythm, thermogenic activities, scent compounds emitted, pollinating dynastid scarab beetles attracted, as well as slight morphological differences and apparent geographical exclusiveness noted in these three taxa are strong indicators that <i>P. bipinnatifidum</i> , <i>P. form selloum</i> and <i>P. mello-barretoanum</i> are different enough to be considered good species." ... "All species of <i>Philodendron</i> studied up to now were found to be pollinated by large dynastid scarab beetles (Dynastinae, Scarabaeidae)." ... "The sole pollinating species of <i>P. bipinnatifidum</i> observed all the years was <i>Cyclocephala variolosa</i> Burmeister, a 20- to 22-mm-long beetle"

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? No] "It is usually propagated from seed." ... "Older, leggy plants can be removed by cutting the tops off and rerooting them; the stumps send up one or more shoots and soon become dense and full again."
606	2013. Floridata. <i>Philodendron bipinnatifidum</i> . http://www.floridata.com/ref/p/phil_bip.cfm [Accessed 29 Oct 2013]	[Reproduction by vegetative fragmentation? No evidence] "Propagation: <i>Philodendrons</i> are easy to start from cuttings. To propagate this nonclimber, take shoots from the base of the plant's stem and root in potting medium. "
607	2013. Martin, C.A.. Virtual Library of Phoenix Landscape Plants - <i>Philodendron bipinnatifidum</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/philodendronbipinnatifidum.html [Accessed 29 Oct 2013]	[Minimum generative time (years)? 15+] "Fiddle leaf philodendron takes about 15-20 years to reach reproductive maturity..."
701	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unknown if sticky mucilaginous material on seeds will enable seeds to adhere to animals, clothing of vehicles] "FRUIT: berries 1 -4 cm long, 0 - 7 -08 cm wide, ? cylindric, white or yellow when ripe, with edible, sweet tasting pulp; seeds 3 5 4 mm long, 1 -7- 1 8 mm diam., subcylindric, slightly broader at micropylar end, either sarcotestate with non-arillate funicle or lacking a sarcotesta and with an arillate funicle and raphe, funicle sometimes bearing a blob of sticky mucilaginous material in ripe seed."
702	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules dispersed intentionally by people? Yes] " <i>Philodendron</i> is a genus of outstanding horticultural importance and subgen. <i>Meconostigma</i> includes some very well known ornamental species. <i>P. bipinnatifidum</i> (syn. <i>P. selloum</i>), one of the world's most ubiquitous houseplants, has provided a rich source of variation for the breeding of different foliage forms."
703	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Propagules likely to disperse as a produce contaminant? No evidence, and unlikely in cultivation] "In its native Brazil, <i>Philodendron bipinnatifidum</i> is pollinated by a single species of large scarabaeid beetle. Because this beetle is not present in the United States, and the female flowers on an inflorescence are receptive 48 hours before the male flowers produce pollen, hand pollination is necessary."
704	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules adapted to wind dispersal? No] "FRUIT: berries 1 -4 cm long, 0 - 7 -08 cm wide, ? cylindric, white or yellow when ripe, with edible, sweet tasting pulp; seeds 3-5-4 mm long, 1 -7- 1 8 mm diam., subcylindric, slightly broader at micropylar end, either sarcotestate with non-arillate funicle or lacking a sarcotesta and with an arillate funicle and raphe, funicle sometimes bearing a blob of sticky mucilaginous material in ripe seed."
705	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules water dispersed? Possibly. Seeds in fleshy fruits, but aquatic habitats may facilitate dispersal by water] "Hemi-epiphytic or terrestrial in rainforest, gallery forests, and various seasonal forest types including cerrado; terrestrial or rooted-aquatic in open swampy areas, occasionally rupicolous in open shrubby coastal and submontane vegetation"
706	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules bird dispersed? Presumably Yes] "FRUIT: berries 1 -4 cm long, 0 - 7 -08 cm wide, ? cylindric, white or yellow when ripe, with edible, sweet tasting pulp; seeds 3-5-4 mm long, 1 -7- 1 8 mm diam., subcylindric, slightly broader at micropylar end, either sarcotestate with non-arillate funicle or lacking a sarcotesta and with an arillate funicle and raphe, funicle sometimes bearing a blob of sticky mucilaginous material in ripe seed."
707	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules dispersed by other animals (externally)? Unknown if sticky mucilaginous material on seeds will enable seeds to adhere to animals, clothing of vehicles] "FRUIT: berries 1 -4 cm long, 0 - 7 -08 cm wide, ? cylindric, white or yellow when ripe, with edible, sweet tasting pulp; seeds 3-5-4 mm long, 1 -7- 1 8 mm diam., subcylindric, slightly broader at micropylar end, either sarcotestate with non-arillate funicle or lacking a sarcotesta and with an arillate funicle and raphe, funicle sometimes bearing a blob of sticky mucilaginous material in ripe seed."
708	1991. Mayo, S.J.. A Revision of <i>Philodendron</i> Subgenus <i>Meconostigma</i> (Araceae). Kew Bulletin. 46(4): 601-681.	[Propagules survive passage through the gut? Presumably Yes] "FRUIT: berries 1 - 4 cm long, 0 - 7 -08 cm wide, ? cylindric, white or yellow when ripe, with edible, sweet tasting pulp; seeds 3-5-4 mm long, 1 -7- 1 8 mm diam., subcylindric, slightly broader at micropylar end, either sarcotestate with non-arillate funicle or lacking a sarcotesta and with an arillate funicle and raphe, funicle sometimes bearing a blob of sticky mucilaginous material in ripe seed."
708	2011. Cardoso, N.A./Le Pendu, Y./Lapenta, M.J./Raboy, B.E.. Frugivory patterns and seed dispersal by golden-headed lion tamarins (<i>Leontopithecus chrysomelas</i>) in Una Biological Reserve, Bahia, Brazil. Mammalia. 75(4): 327-337.	[Propagules survive passage through the gut? Presumably Yes] "Appendix 1 List of plant species, number of fruiting tree used, seed processing, ripeness and colour of fruits consumed by GHLT in the study." [Includes fruit of <i>Philodendron bipinnatifidum</i>]

801	2006. Miller, L.M./Newton, R.D.. Hand Pollination and Seed Propagation of <i>Philodendron bipinnatifidum</i> , syn. <i>P. selloum</i> . Proc. Fla. State Hort. Soc.. 119: 425-428.	[Prolific seed production (>1000/m ²)? No] "In its native Brazil, <i>Philodendron bipinnatifidum</i> is pollinated by a single species of large scarabaeid beetle. Because this beetle is not present in the United States, and the female flowers on a inflorescence are receptive 48 hours before the male flowers produce pollen, hand pollination is necessary."
802	1998. Kubitzki, K. (ed.). The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "The seeds of Araceae, particularly those with large chlorophyllous embryos, do not remain viable for a long time."
802	2013. Dave's Garden. PlantFiles: Tree <i>Philodendron</i> , Cut-leaf <i>Philodendron</i> , <i>Selloum</i> - <i>Philodendron bipinnatifidum</i> . http://davesgarden.com/guides/pf/go/37036/ [29 Oct 2013]	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Seed does not store well; sow as soon as possible"
803	2013. Mahoney, J.. How to Kill a <i>Philodendron</i> . http://homeguides.sfgate.com/kill-philodendron-27558.html [Accessed 30 Oct 2013]	[Well controlled by herbicides? Yes] "You may need to kill your philodendrons if they overwhelm their surroundings, contract disease or if you simply no longer want them." ... "Foliar Spray" ... "... herbicide application is a fast-acting way to kill the plant and ensure it does not come back." ... "Mix a 2-percent solution of glyphosate herbicide with diesel fuel or kerosene in a spray bottle. Products that contain glyphosate are sold with varying concentrations, so read the product label carefully for specific mixing instructions. Use a small spray bottle to kill a small philodendron houseplant, or a garden sprayer if treating a dense patch of large philodendron bush plants, such as lacy tree philodendron (<i>Philodendron bipinnatifidum</i>)." ... "Spray the herbicide solution directly onto the leaves of the philodendron, being careful not to target surrounding plants. The kerosene or diesel fuel helps to fully coat the leaves and doesn't drip off as readily as herbicide mixed with water; the blue marking dye makes it easy to distinguish leaves that you already sprayed." ... "Cut Stem Application. 1. Prepare a 18- to 21 percent solution of glyphosate herbicide mixed with kerosene or diesel fuel in a small, disposable bowl. Add blue marking dye, if desired, but it's not as necessary with this type of application. 2. Cut thick stemmed philodendrons, such as the larger, tree-like cut-leaf philodendron (<i>Philodendron bipinnatifidum</i>), with lopping shears or a pruning saw, leaving an 8- to 12-inch stem protruding from the ground. 3. Paint the cut tip of the philodendron stems with the herbicide solution, using a small household paintbrush. Paint the stems within one hour of cutting because fresh-cut stems are better able to absorb the herbicide into the root system. 4. Paint the outside of the remaining stem with the herbicide solution, providing a greater surface area through which the herbicide absorbs into the roots. 5. Allow a few days for the herbicide to take effect, in which the plant slowly dries out and dies, then pull the plant up by the root and discard."
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? Yes] "Older, leggy plants can be removed by cutting the tops off and rerooting them; the stumps send up one or more shoots and soon become dense and full again."
804	2013. Floridata. <i>Philodendron bipinnatifidum</i> . http://www.floridata.com/ref/p/phil_bip.cfm [Accessed 29 Oct 2013]	[Tolerates, or benefits from, mutilation, cultivation, or fire? Possibly Yes] "Frost may kill the leaves of tree philodendron or even kill the whole plant to the ground, but if the cold is not too severe and if the plant is well established, it will come back when warm weather returns."
805	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	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown. No reports of major pests or pathogens that inhibit its cultivation]
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

- Thrives in tropical climates
- All parts of plant are poisonous, and sap can be a skin irritant
- Shade tolerant
- Seeds potentially bird-dispersed
- Can resprout if cut to base

Low Risk Traits

- No confirmed reports of naturalization or invasiveness to date
- Unarmed (no spines, thorns or burrs)
- Valued as an ornamental
- Plants functionally self-incompatible
- Requires specialized beetle pollinators
- Reaches maturity after 15+ years
- Not likely to form a persistent seed bank
- Herbicides effectively control this plant