Keywords: Evaluate, Naturalized, Edible, Possibly Non-Seeding, Geophyte

Family: ***Araceae***

Taxon: ***Xanthosoma atrovirens***

Synonym: *Xanthosoma sagittifolium (L.) Schott*

Common Name: Mickey mouse taro
mouse-cup taro
yautía amarilla

Questionaire : current 20090513
Status: Assessor Approved

Assessor: Assessor
Data Entry Person: Assessor

Designation: EVALUATE
WRA Score 1

101	**Is the species highly domesticated?**	**y=-3, n=0**	**y**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	**y**
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)**	**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**	**n**
405	**Toxic to animals**	**y=1, n=0**	
406	**Host for recognized pests and pathogens**	**y=1, n=0**	
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	
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**	**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**	**y**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	
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**	
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**	**y**
706	**Propagules bird dispersed**	**y=1, n=-1**	
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**	**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**	**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: EVALUATE **WRA Score** **1**

Supporting Data:

101	1917. Bailey, L.H (ed.). Cyclopedia of American Agriculture. Vol II. Crops. The Macmillan Company, London	[Is the species highly domesticated? Yes] "This is thought by some to be the oldest crop in the world and the only one which never produces seeds."
101	1969. Plowman, T.. Folk Uses of New World Aroids. Economic Botany. 23(2): 97-122.	[Is the species highly domesticated? Yes] "The edible species of Xanthosoma are considered among the very oldest root crops known (9). Two tuber specimens from a prehistoric site in Peru have been identified as Xanthosoma sagittifolium (128). A plant mentioned in the Badianus Manuscript, an Aztec herbal, is probably a Xanthosoma species (26). It was grown in the gardens of the Aztecs, who treasured the plant for temple offerings"
102	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Has the species become naturalized where grown? Yes] "Distribution in Puerto Rico: Cultivated and naturalized in moist or wet, disturbed vegetations. Arecibo, Salinas, and Utuado. Cultivated in St. John and St. Thomas."
103	2013. WRA Specialist. Personal Communication.	[Does the species have weedy races? Possbly X. sagittifolium, which may be a synonym of X. atrovirens]
201	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Species suited to tropical or subtropical climate(s) 2-High] "Cultivated and naturalized in Puerto Rico; a native to northern South America, cultivated in the tropics."
202	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Quality of climate match data 2-High]
203	2011. Manner, H.I.. Farm and Forestry Production and Marketing Profile for Tannia (Xanthosoma spp.). In: Elevitch, C.R. (ed.). Specialty Crops for Pacific Island Agroforestry. Permanent Agricultural Resources (PAR), Holualoa, HI	[Broad climate suitability (environmental versatility)? No] "Climate. It prefers humid tropical rainforest climates and naturalized well along stream banks and in moist, shady areas."
203	2013. Tropilab Inc.. Xanthosoma atrovirens - Kimpol. http://www.tropilab.com/kimpol.html [Accessed 03 May 2013]	[Broad climate suitability (environmental versatility)? No] "Hardiness USDA zone 8 - 11."
204	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Cultivated and naturalized in Puerto Rico; a native to northern South America, cultivated in the tropics."
205	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural and horticultural crops: (except ornamentals). Vol. 1. Springer-Verlag, Berlin, Heidelberg, New York	[Does the species have a history of repeated introductions outside its natural range? Yes] "Mainly cultivated in Puerto Rico, Cuba and Jamaica, occasionally also in E Africa and in the Pacific isl." [Native to Venezuela]
205	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Does the species have a history of repeated introductions outside its natural range? Yes] "General distribution: Native to the Neotropics, cultivated throughout the tropics for its edible starchy tubers."
301	1918. Britton, N.L.. The flora of the American Virgin Islands. New York Botanical Garden, New York, NY	[Naturalized beyond native range Yes] "Cultivated and naturalized in, St. Thomas; St. Croix (according to Eggers)."
301	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Naturalized beyond native range? Yes] "Cultivated and naturalized in Puerto Rico; a native to northern South America, cultivated in the tropics."
301	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Naturalized beyond native range? Yes] "Distribution in Puerto Rico: Cultivated and naturalized in moist or wet, disturbed vegetations. Arecibo, Salinas, and Utuado. Cultivated in St. John and St. Thomas."
301	2005. Morgan, E.C./Overholt, W.A.. New Records of Invasive Exotic Plant Species in St. Lucie County, Florida. Castanea. 70(1): 59-62.	[Naturalized beyond native range?] "Xanthosoma saggitifolium (L.) Schott. (ARACEAE)—Arrowleaf Elephant ear. Occasional plant in wet areas such as canal edges. Morgan & Overholt 0009 (FLAS)." [X. atrovirens may be a synonym of X. saggitifolium. Taxonomy is unresolved]
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No] Listed as a weed in Puerto Rico [However, subsequent literature searches only list this species as Naturalized in Puerto Rico]

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 [Several references list X. sagittifolium as a weed. X. atrovirens may be a synonym, but the taxonomy is uncertain]
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No] No evidence [Several references list X. sagittifolium as a weed. X. atrovirens may be a synonym, but the taxonomy is uncertain]
305	2002. Stephens, K.M./Dowling, R.M .. Wetland Plants of Queensland: A Field Guide. CSIRO Publishing, Collingwood, Australia	[Congeneric weed? Yes] "Xanthosoma violaceum" … "Blue taro is a naturalised plant found in and along shallow coastal streams in south east Queensland, usually in streams subject to urbanization." … "Blue taro can form extensive dense stands, mainly along creek lines in urban areas." … "Originally grown as a garden plant and probably introduced into streams in south east Queensland as a result of dumping, it has now become widely naturalised."
401	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Produces spines, thorns or burrs? No] "Glabrous, erect, herb to 2 m tall, acaulescent when young, mature plants with a thick, erect, fleshy stem to 1 m long, these with numerous leaf scars and sometimes with aerial roots, the base enlarged, ovoid, producing lateral, elongated subterranean, edible tubers. Leaves several, nearly in a rosette in acaulescent plants, or in a distal crown in mature plants; blades horizontal to slightly nodding, with the posterior lobes ascending, 40-100 × 40-70 cm, simple, sagittateovate or subcordate, chartaceous, upper surface dark green with light green primary and secondary veins, lower surface light green, pruinose, with dark green venation, the apex obtuse, ending in an acute point, the base cordate with non overlapping lobes, the lowest pair of secondary veins surrounded by marginal tissue at their insertion with the petiole, the margins undulate; petioles erect, 1-1.5 m long, green, invaginate on lower 2/3 , with straight, wavy or sometimes involute margins."
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Parasitic? No] Araceae
404	1972. Morton, J.F.. Cocoyams (Xanthosoma caracu, X. atrovirens and X. nigrum), ancient root- and leaf-vegetables, gaining in economic importance. Proc. Florida State Horticultural Society. 85: 85-92.	[Unpalatable to grazing animals? No] "The leaves provide fodder for cattle and the tuber peelings (fresh or dried) are fed to cattle, pigs, sheep and goats in Ghana."
404	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural and horticultural crops: (except ornamentals). Vol. 1. Springer-Verlag, Berlin, Heidelberg, New York	[Unpalatable to grazing animals? No] "The corms are also fed to pigs." [Feral pigs might also dig up corms]
405	1972. Morton, J.F.. Cocoyams (Xanthosoma caracu, X. atrovirens and X. nigrum), ancient root- and leaf-vegetables, gaining in economic importance. Proc. Florida State Horticultural Society. 85: 85-92.	[Toxic to animals? Possibly] "In addition, there are present, particularly in the highly colored varieties, water-soluble saponins, or glucosaponins (16), which are not destroyed by heat but released into the cooking water. The latter has proved as toxic to rats as the raw tubers.2 The forms commonly grown as ornamental plants in South Florida are frequent causes of oral irritation in children who bite or chew the raw petiole or leaf blade."
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?] "Table 2. List of plants on which the hibiscus mealybug has been recorded in Trinidad (after Me Comie 1998)" [Includes Xanthosoma sagittifolium. Synonym of X. atrovirens]
407	1934. Clark, A./Waters, R.B.. The presence of a sapotoxin in Xanthosoma atrovirens, a tropical food-tuber. Biochemical Journal. 28(3): 1131-1134.	[Causes allergies or is otherwise toxic to humans? Possibly if consumed] "It is suggested that certain cases of nephritis occurring in tropical countries may be caused by the consumption of tannia and other aroid tubers."
407	1972. Morton, J.F.. Cocoyams (Xanthosoma caracu, X. atrovirens and X. nigrum), ancient root- and leaf-vegetables, gaining in economic importance. Proc. Florida State Horticultural Society. 85: 85-92.	[Causes allergies or is otherwise toxic to humans? Possibly, if eaten raw] "In addition, there are present, particularly in the highly colored varieties, water soluble saponins, or glucosaponins (16), which are not destroyed by heat but released into the cooking water. The latter has proved as toxic to rats as the raw tubers.2 The forms commonly grown as ornamental plants in South Florida are frequent causes of oral irritation in children who bite or chew the raw petiole or leaf blade."
407	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural and horticultural crops: (except ornamentals). Vol. 1. Springer-Verlag, Berlin, Heidelberg, New York	[Causes allergies or is otherwise toxic to humans?] "The yellow-orange underground corm as well as young leaves are eaten whereas the rather small and few tubers are used for propagation. The corms are also fed to pigs."

408	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Creates a fire hazard in natural ecosystems? No. A fleshy herb unlikely to burn] "Glabrous, erect, herb to 2 m tall, acaulescent when young, mature plants with a thick, erect, fleshy stem to 1 m long, these with numerous leaf scars and sometimes with aerial roots, the base enlarged, ovoid, producing lateral, elongated subterranean, edible tubers."
409	2011. Manner, H.I.. Farm and Forestry Production and Marketing Profile for Tannia (Xanthosoma spp.). In: Elevitch, C.R. (ed.). Specialty Crops for Pacific Island Agroforestry. Permanent Agricultural Resources (PAR), Holualoa, HI	[Is a shade tolerant plant at some stage of its life cycle? Yes. Genus description] "Tannia is probably the most shade tolerant of the edible aroids and does very well as an understory species in traditional agroforestry systems of the Pacific where it is often planted under coconut, young cacao, coffee, banana, and rubber (Weightman and Moros 1982). However, Morton (1972) reports research that found that "50% shading by trees or interplanted bananas or plantains has been shown to reduce yield by 66.67%:"'
409	2013. Tropilab Inc.. Xanthosoma atrovirens - Kimpol. http://www.tropilab.com/kimpol.html [Accessed 03 May 2013]	[Is a shade tolerant plant at some stage of its life cycle?] "Full sun / partial shade; rich, well drained soil."
410	2011. Manner, H.I.. Farm and Forestry Production and Marketing Profile for Tannia (Xanthosoma spp.). In: Elevitch, C.R. (ed.). Specialty Crops for Pacific Island Agroforestry. Permanent Agricultural Resources (PAR), Holualoa, HI	[Tolerates a wide range of soil conditions? Yes] "Tannia is grown in a wide range of soils except hard clays or pure sands (Kay 1987). It does not tolerate waterlogged soils. It does best on deep, mulched, and well drained soils. While the species is grown in sandy soils, it does better when these soils contain a high amount of organic matter as moisture retention, nutrient supply, and aeration are improved. A soil pH of 5.5-6.5 is preferred (Kay 1987). FAO (2007) states that the minimum and maximum pH are 4.5 and 6.5. However, on Fais Island, Yap, Federated States of Micronesia (FSM), the species is cultivated on sandy soils derived from limestone (high pH) and low in organic matter and nutrients."
411	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Climbing or smothering growth habit? No] "Glabrous, erect, herb to 2 m tall, acaulescent when young, mature plants with a thick, erect, fleshy stem to 1 m long, these with numerous leaf scars and sometimes with aerial roots, the base enlarged, ovoid, producing lateral, elongated subterranean, edible tubers."
412	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Forms dense thickets? No evidence in Puerto Rico] "Distribution in Puerto Rico: Cultivated and naturalized in moist or wet, disturbed vegetations. Arecibo, Salinas, and Utuado. Cultivated in St. John and St. Thomas."
501	2013. WRA Specialist. Personal Communication.	[Aquatic? No] Terrestrial
502	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Grass? No] Araceae
503	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Nitrogen fixing woody plant? No] Araceae
504	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "Glabrous, erect, herb to 2 m tall, acaulescent when young, mature plants with a thick, erect, fleshy stem to 1 m long, these with numerous leaf scars and sometimes with aerial roots, the base enlarged, ovoid, producing lateral, elongated subterranean, edible tubers."
601	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1917. Bailey, L.H (ed.). Cyclopedia of American Agriculture. Vol II. Crops. The Macmillan Company, London	[Produces viable seed? Unknown] "This is thought by some to be the oldest crop in the world and the only one which never produces seeds." [This reference is old and may be outdated. The taxonomy of this species is also unresolved, and certain types may produce seeds]
603	1981. Volin, R.B./Beale, A.J.. Genetic Variation in F1 Cocoyam (Xanthosoma sp.) Hybrids. Proc. Fla. State Hort. Soc.. 94: 235-238.	[Hybridizes naturally? Unknown. Artificial hybridization is possible in genus] "All clones used as parents were established in the field from locally collected vegetable setts. One exception was Florida White 40 which was first established as a single plant selection from seedlings of a cross between two clones out of the commercial type Florida White"
604	1988. Cruden, R.W.. Temporal Dioecism: Systematic Breadth, Associated Traits, and Temporal Patterns. Botanical Gazette. 149(1): 1-15.	[Self-compatible or apomictic? Unknown] "Table 1" [Xanthosoma sagittifolium listed as possibly self-compatible]

605	2003. Gibernau, M.. Pollinators and visitors of aroid inflorescences. Aroideana. 26(11): 73-91.	[Requires specialist pollinators? Yes] Table 1. [Pollinators of Xanthosoma spp. Include Euglossine bees, Scarabaeidae (Nitidulidae) beetles, and Drosophilidae flies]
606	2013. Dave's Gardern. PlantFiles: Mickey Mouse Taro, Mouse Cup, Pocket Plant, Yautia Amarilla Xanthosoma atrovirens 'Variegatum Monstrosum'. http://davesgarden.com/guides/pf/go/48859/ [Accessed 03 May 2013]	[Reproduction by vegetative fragmentation? Possibly] "Originally started with one corm several years ago and have been dividing it through the years." [Propagated by divisions. Unknown if tubers naturally break off and naturally spread]
607	2008. Langeland, K.A./Burks, K.C. (eds.). Identification and Biology of Non-Native Plants in Florida's Natural Areas. UF/IFAS Distribution, Gainesville, FL http://www.fleppc.org/ID_book.htm	[Minimum generative time (years)? Unknown] "Xanthosoma sagittifolium" … "Fast growing from cormels (vegetative bulbils) that quickly sprout in moist conditions; can form mature plants within 14-20 weeks (Igbokwe 1984)." [Some authors consider X. atrovirens to be a synonym of X. sagittifolium. Taxonomy is unresolved]
701	2013. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] Limited seed production would limit inadvertent dispersal
702	1969. Plowman, T.. Folk Uses of New World Aroids. Economic Botany. 23(2): 97-122.	[Propagules dispersed intentionally by people? Yes] "This large aroid is known from northern South America under the names "dark leaf malanga" or "tampa-taja." The knobby corms are roasted in coals and used with other foods. These constitute one of the staple starchy foods of Dominica (55). The fresh leaves are applied to relieve swelling of the liver and spleen, following an attack of swamp fever (96, 131)."
703	2013. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence, and propagules unlikely to be inadvertently dispersed with produce
704	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Propagules adapted to wind dispersal? No] "Berry cylindrical, white or orange, many-seeded; seeds ovoid, costate." [Genus -description. Fruit, if produced, not adapted for wind dispersal]
705	2011. Manner, H.I.. Farm and Forestry Production and Marketing Profile for Tannia (Xanthosoma spp.). In: Elevitch, C.R. (ed.). Specialty Crops for Pacific Island Agroforestry. Permanent Agricultural Resources (PAR), Holualoa, HI	[Propagules water dispersed? Yes] "It prefers humid tropical rainforest climates and naturalized well along stream banks and in moist, shady areas." [Distribution of plants suggests plants, or fragments, are likely moved by water along stream courses]
706	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Propagules bird dispersed? Possibly, if fruit are produced] "Berry cylindrical, white or orange, many seeded; seeds ovoid, costate." [Genus description. X. atrovirens may rarely produce seed in cultivation]
707	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Propagules dispersed by other animals (externally)? No] "Berry cylindrical, white or orange, many seeded; seeds ovoid, costate." [Genus description. Fruit & seeds lack means of external attachment. X. atrovirens may rarely produce seed in cultivation.]
708	2005. Acevedo-Rodríguez, P./Strong, M.T.. Monocots and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium. 52: 1-415.	[Propagules survive passage through the gut? Unknown] "Berry cylindrical, white or orange, many seeded; seeds ovoid, costate." [Genus description. X. atrovirens may rarely produce seed in cultivation]
801	1994. Hernando Bermejo, J.E./Leon, J. (eds.). Neglected Crops: 1492 from a Different Perspective. Plant Production and Protection Series No. 26. FAO, Rome http://www.hort.purdue.edu/newcrop/1492/annonas.html	[Prolific seed production (>1000/m2)? No] "The spadices are rarely fertile and produce few viable seeds." [This description is for X. sagittifolium, a possible synonym for X. atrovirens, although the taxonomy is unresolved. In any event, most evidence suggests Xanthosoma species are cultivated from corm divisions, as seeds are rarely produced]
802	2008. Langeland, K.A./Burks, K.C. (eds.). Identification and Biology of Non-Native Plants in Florida's Natural Areas. UF/IFAS Distribution, Gainesville, FL http://www.fleppc.org/ID_book.htm	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] "Corms may remain dormant in very heavy shade and resprout when a light gap is formed (Purseglove 1972). Corms can be stored for up to 18 weeks or more in dry conditions, but unplanted corms can sprout within a few weeks in hot, humid conditions (Purseglove 1972)." [Corms may remain dormant in soil]
803	1986. Burnham, O.O.. Studies on Perennial Weeds in Ecuador. Pp 278-306 in Ecology and Control of Perennial Weeds in Latin America. FAO, Rome, Italy	[Well controlled by herbicides? Yes] "These results show that ringing the pseudostems causes rapid decomposition in Xanthosoma spp. Cutting the pseudostems and separating from the soil inhibits budding. Good control was achieved with one application of Tordon 101 at 0.75 percent and glyphosate at 2 percent or two applications of Banvel-D at 0.5 percent." [Genus description]
804	1972. Morton, J.F.. Cocoyams (Xanthosoma caracu, X. atrovirens and X. nigrum), ancient root- and leaf-vegetables, gaining in economic importance. Proc. Florida State Horticultural Society. 85: 85-92.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Around the crown, there occur many small, round, very firm tubers ("eggs") which are usually used only for planting." [Can be divided repeatedly for cultivation]

804	2013. Dave's Gardern. PlantFiles: Mickey Mouse Taro, Mouse Cup, Pocket Plant, Yautia Amarilla Xanthosoma atrovirens 'Variegatum Monstrosum'. http://davesgarden.com/guides/pf/go/48859/ [Accessed 03 May 2013]	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Propagation Methods: By dividing rhizomes, tubers, corms or bulbs (including offsets)" … "Originally started with one corm several years ago and have been dividing it through the years."
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

- Naturalized in Puerto Rico & other Caribbean Islands
- Thrives in tropical climates
- Other species in genus are weedy or invasive
- Possibly toxic if eaten raw
- Shade tolerant
- Tolerates many soil conditions (and potentially able to exploit many different habitat types)
- If fruit and seeds are produced, may be dispersed by birds
- A geophyte that can resprout from corms
- May be a synonym for *X. sagittifolium*, which is invasive in certain areas

Low Risk / Desirable Traits

- Despite ability to spread, no negative impacts have been documented
- Unarmed (no spines, thorns or burrs)
- Edible crop
- Landscaping and ornamental value
- Possibly seedless or limited seed production in cultivation