

Family: *Anacardiaceae*

Taxon: *Spondias mombin*

Synonym: *Spondias lutea* L.

Common Name: hog-plum
Jamaica-plum
yellow mombin
mombin

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation: H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score 10
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	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)	
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	n
406	Host for recognized pests and pathogens		y=1, n=0	y
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0	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	y
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	y
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
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	>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	y
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	y
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	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score **10**

Supporting Data:

101	2011. WRA Specialist. Personal Communication.	[Is the species highly domesticated? No] No evidence of domestication that reduces invasive ability.
102	2011. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown?] NA
103	2011. WRA Specialist. Personal Communication.	[Does the species have weedy races?] NA
201	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? High] Native range: Mexico; Belize; Costa Rica; El Salvador; Guatemala; Nicaragua; Panama; Guyana; Suriname; Venezuela; Brazil; Bolivia; Colombia; Ecuador; Peru; Paraguay.
202	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data? High] Native range: Mexico; Belize; Costa Rica; El Salvador; Guatemala; Nicaragua; Panama; Guyana; Suriname; Venezuela; Brazil; Bolivia; Colombia; Ecuador; Peru; Paraguay.
203	1985. Janzen, D.H.. <i>Spondias mombin</i> is culturally deprived in mega-fauna-free forest. <i>Journal of Tropical Ecology</i> . 1: 131-155.	[Broad climate suitability (environmental versatility)?] <i>Spondias mombin</i> is a lowland tree and usually occurs below 1000 m]
203	1987. Morton, J.. <i>Fruits of warm climates</i> . J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton	[Broad climate suitability (environmental versatility)? Yes] This is a strictly tropical tree, not growing above an elevation of 3,200 ft (1,000 m) in South America. It is well-adapted to arid as well as humid zones.
203	1992. Francis, J.K.. <i>Spondia mombin</i> L. <i>hogplum</i> - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Broad climate suitability (environmental versatility)? Yes] In Mexico grows from near sea-level to 1200m.
203	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Broad climate suitability (environmental versatility)? Yes] " <i>S. mombin</i> is best adapted to hot, lowland tropics, and grows only where no frost occurs Despite rainfall every month in some areas, there is a dry season of 1-5 months in most of its native range. <i>S. mombin</i> grows in the semi-deciduous forests of Venezuela which receive a mean annual rainfall of 1000-2000 mm and where the average annual temperature is 23-28°C it is found growing in areas with a mean annual rainfall of 1500 mm or more in Brazil and 1250-2000 mm in Puerto Rico. It also grows in drier areas as a riparian species." Climatic amplitude (estimates) - Altitude range: 0 - 1200 m - Mean annual rainfall: 1000 - 2000 mm - Rainfall regime: summer; uniform - Dry season duration: 1 - 5 months - Mean annual temperature: 23 - 28°C
204	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Native or naturalized in regions with tropical or subtropical climates? Yes] Widely cultivated and naturalized in tropical Africa.
204	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: Mexico; Belize; Costa Rica; El Salvador; Guatemala; Nicaragua; Panama; Guyana; Suriname; Venezuela; Brazil; Bolivia; Colombia; Ecuador; Peru; Paraguay.
205	1987. Morton, J.. <i>Fruits of warm climates</i> . J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton	[Does the species have a history of repeated introductions outside its natural range? Yes] The tree is native and common in moist lowland forests from southern Mexico to Peru and Brazil, and in many of the West Indies. It has been planted in Bermuda; is grown to a limited extent in India and Indonesia; is rare in Malaya, but widely cultivated and naturalized in tropical Africa.
205	1992. Francis, J.K.. <i>Spondia mombin</i> L. <i>hogplum</i> - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Does the species have a history of repeated introductions outside its natural range? Yes] Naturalized in Africa and other tropical areas and widely cultivated.

205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Does the species have a history of repeated introductions outside its natural range? Yes] "S. mombin was introduced to Florida, USA by the Institute of Food and Agricultural Sciences for research and to tropical Africa for food production. It has been planted in Bermuda, and is cultivated to a limited extent in India and Indonesia; it is rare in Malaysia, but widely cultivated and naturalized in tropical Africa."
301	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Naturalized beyond native range? Yes] Naturalized in Africa and other tropical areas.
301	2003. Haysom, K.A./Murphy, S.T.. The status of invasiveness of forest tree species outside their natural habitat: a global review and discussion paper. Forest Health and Biosecurity Working Paper FBS/3E. Forestry Department. FAO, Rome ftp://ftp.fao.org/doc	[Naturalized beyond native range? Yes] Naturalized in Curacao.
301	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Naturalized beyond native range? Yes] Widely cultivated and naturalized in tropical Africa.
301	2006. Duvall, C.S.. On the origin of the tree <i>Spondias mombin</i> in Africa. Journal of Historical Geography. 32: 249-266.	[Naturalized beyond native range?] "Researchers on the Challenger expedition (1872-1876) observed that <i>Spondias mombin</i> pits were amongst the most abundant types of plant matter washed ashore in the Antilles.115 Later researchers showed that <i>Spondias mombin</i> has great potential for oceanic dispersal since its pits can remain buoyant in seawater and protect the seeds for 2-3 months. By the 1920s, two researchers concluded separately that many amphi- Atlantic species, including <i>Spondias mombin</i> , probably arrived in Africa via natural oceanic dispers." Duvall concludes the the presence of <i>Spondias mombin</i> in Africa is due to a chance natural long-distance dispersal across the Atlantic Ocean. His reasoning states historcial biogeographical theories and ecological characteristics and presence of <i>Spondias</i> in natural and human-altered habitats in Africa.
302	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Garden/amenity/disturbance weed?] " The most common habitats today are roadsides, pasture fencerows, logged areas and old fields."
302	2011. WRA Specialist. Personal Communication.	[Garden/amenity/disturbance weed? No] No evidence.
303	2005. Rampersad, S.N.. A study of dicotylenous weed species as hosts of potato yellow mosaic Trinidad virus (PYMTV). Plant Pathology Journal. 4: 157-167. http://docsdrive.com/pdfs/ansinet/ppj/2005/157-160.pdf	[Agricultural/forestry/horticultural weed?] <i>Spondias mombin</i> is a weed of commercial tomato growing areas in Tabaque. [does not mention impacts or control]
303	2011. WRA Specialist. Personal Communication.	[Agricultural/forestry/horticultural weed?] The Global Compendium of Weeds mentions the <i>Spondias mombin</i> is an agricultural weed based on Acuna, G.J. (1974). Plantas Indeseables en Los Cultivos Cubanos. Academia de Ciencias, Insitituto de Investigaciones de Cuba, Havana. However, I cannot access the data.
304	2007. Randall, R.P.. Global Compendium of Weeds - <i>Spondias mombin</i> . http://www.hear.org/gcw/species/spondias_mombin/	[Environmental weed? No] No evidence.
305	2001. Tye, A.. Invasive plant problems and requirements for weed risk assessment in the Galapagos Islands Chapter 12 In: Weed risk assessment. Csiro Publishing, http://books.google.com/books?hl=en&lr=&id=sSZcVAavJ0UC&oi=fnd&pg=PA153&dq=Spondias+%2B+%22w	[Congeneric weed? No] However, <i>Spondias purpurea</i> is listed as naturalized in the Galapagos and as having the potential to become invasive if not controlled.
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence.

401	1987. Morton, J.. Fruits of warm climates. J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton	[Produces spines, thorns or burrs? No] The yellow mombin tree, unlike that of the purple mombin, is erect, stately, to 65 ft (20 m) tall, with trunk to 2 or 2 1/2 ft (60-75 cm) in diameter, somewhat buttressed, and thick, fissured bark, often, in young trees, bearing many blunt-pointed spines or knobs up to 3/4 in (2 cm) long. Generally, its lower branches are whorled. Its deciduous, alternate, pinnate leaves, 8 to 18 in (20-45 cm) long, have hairy, often pinkish, petioles and 9 to 19 sub-opposite, ovate or lanceolate, pointed leaflets, 2 to 6 in (5-15 cm) long, inequilateral and oblique at the base. Small, fragrant, whitish, male, female and bisexual flowers are borne, after the new leaves, in panicles 6 to 12 in (15-30 cm) long.
402	1998. Burns, R.M./Mosquera, M./Whitmore, J.L.. Arboles utiles de la region tropical de America del Norte. Department of Agriculture, Forest Service, http://books.google.com/books?hl=en&lr=&id=w_cTAAAYAAJ&oi=fnd&pg=PA3&dq=Spondias+mombin+%2B+%22weed%22&o	[Allelopathic? no] Spondias mombin is well-adapted to provide shade in coffee plantations. It has dropped its leaves at the time coffee needs to ripen. [A lack of reported or suggested allelopathy for very well known and studied taxa should generally result in a 'no' response.]
403	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Parasitic? No] Anacardiaceae.
404	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Unpalatable to grazing animals? No] When young Spondias is an important browse plant. When placed in a savanna pasture in Nigeria containing six browse species and one grass species, sheep and goats took 27 and 30 percent respectively of their forage from Spondias.
404	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Unpalatable to grazing animals? No] When young the species can be an important forage plant.
405	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Toxic to animals? No] When young Spondias is an important browse plant. When placed in a savanna pasture in Nigeria containing six browse species and one grass species, sheep and goats took 27 and 30 percent respectively of their forage from Spondias.
405	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Toxic to animals? No] When young the species can be an important forage plant.
406	1987. Morton, J.. Fruits of warm climates. J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton	[Host for recognized pests and pathogens? Yes] The fruits are commonly infested with fruit-fly larvae.
406	1996. Toledo, J./Lara, J.R.. Comparison of the biology of Anastrepha obliqua reared in Mango (<i>Mangifera indica</i> L.) and in Mombin (<i>Spondias mombin</i>) infested under field conditions In: Fruit fly pests: a world assessment of their biology and management. CRC	[Host for recognized pests and pathogens? Yes] <i>Spondias mombin</i> is a preferred alternate host for the fruit fly <i>Anastrepha obliqua</i> in Mexico. It plays an important role in the migration of fruit flies to commercial orchards.
406	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Host for recognized pests and pathogens?] <i>S. mombin</i> is preferred as forage by the ant <i>Atta cephalotes</i> in Costa Rica. Fruits can be infected by <i>Anastrepha mombinpraeoptans</i> Seln, <i>Drosophila ampelophila</i> and <i>D. repleta</i> . No special disease or environmental damage is cited for <i>S. mombin</i> , other than that the fruits are commonly infested with fruit-fly larvae.
407	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Causes allergies or is otherwise toxic to humans? No] Fruits and young shoots are eaten. The roots provide palatable water.
407	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Causes allergies or is otherwise toxic to humans? No] When in season, the fruits of <i>S. mombin</i> make a significant contribution to the diet of people in areas of the tropics where it occurs. In some areas, large quantities of the fruit is dried and shipped to distant markets. The fresh or dried fruit can also be used to make jelly, sauces or preserves, and is a good source of minerals and vitamin C. The wood is used as fuel, or for posts and carpentry. Medicinal uses include astringent gargling against mouth and throat inflammation and oral ingestion against prostatitis. The roots contain fresh water which can be extracted and drunk in emergencies."

408	1985. Janzen, D.H.. Spondias mombin is culturally deprived in mega-fauna-free forest. Journal of Tropical Ecology. 1: 131-155.	[Creates a fire hazard in natural ecosystems.? No] "Following conversion to a national park and subsequent removal of the livestock in 1972-78, Santa Rosa's abandoned jaragua pastures generated dense stands of 1-2 m tall grass fuel. Nearly annual fires now severely deplete the woody invaders and carve away at the adjacent forest. S. mombin is a commonplace victim of fire in both habitats, but regeneration is still evident in a few sites protected from fire."
409	1987. Morton, J.. Fruits of warm climates. J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton	[Is a shade tolerant plant at some stage of its life cycle? No] The tree is fast-growing in full sun and in the American tropics and Africa is extensively planted as a living fence-post, as well as for shade and for its fruits.
409	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Is a shade tolerant plant at some stage of its life cycle? No] Intolerant of shade at all stages of life. Seedlings will germinate in shade, but seedlings need nearly full or full sun to develop.
410	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] Spondias is usually associated with secondary forests but probably enters primary forests through natural disturbance. In Puerto Rico, Spondias grows on clay soil over porous limestone parent material.
410	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] "S. mombin grows in a variety of soils and the most important soil types are Oxisols, Ultisols and Inceptisols. Soil pH can vary from 5.0 to over 7.0. The species also tolerates soils with a low concentration of nutrients and soil compaction to some degree. It colonizes soils from sands to clays, and drainage can vary from well-drained (sandy or rocky) to impeded drainage (high clay content in general). In the Amazon basin floodplains trees can tolerate very wet soils for 2-3 months of the year. The trees grow best in fertile, well-drained soils but can be grown satisfactorily in a variety of poorer soils if they are given adequate nutrition."
411	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Climbing or smothering growth habit? No] Tree.
412	2011. WRA Specialist. Personal Communication.	[Forms dense thickets? No] No evidence.
501	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Aquatic? No] Terrestrial; tree.
502	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Grass? No] Anacardiaceae.
503	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Nitrogen fixing woody plant? No] Anacardiaceae.
504	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] Tree; woody plant [not herbaceous].
601	1985. Janzen, D.H.. Spondias mombin is culturally deprived in mega-fauna-free forest. Journal of Tropical Ecology. 1: 131-155.	[Evidence of substantial reproductive failure in native habitat? Yes] Spondias mombin is a common and widespread neotropical tree. However, in S. mombin seeded into Bosque San Emilio as a heterogeneous invasion from adults outside the area and will go nearly extinct there before the forest is again pristine. The largest adults are already dying of senescence with no sign of replacement. S. mombin demise will be caused by the same process: intense competition operating on the very few seedlings left after intense post-dispersal seed predation on the large number of S. mombin nuts in the area. The same process prevents a large adult S. mombin in Santa Rosa pristine forest from replacing itself when it falls. Just as Sork (1983) found to be the case with hickory trees (Carya glabra) in a Michigan forest-field edge, at Santa Rosa it is the fire-free edges where most recruitment is occurring."
601	2011. WRA Specialist. Personal Communication.	
602	1997. Nason, J.D./Hamrick, J.L.. Reproductive and genetic consequences of forest fragmentation: two case studies of neotropical canopy trees. Journal of Heredity. 88: 264-276.	[Produces viable seed? Yes] Viable seeds.

602	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Produces viable seed? Yes] Germination rates are high and some seeds produce two trees.
603	1998. Burns, R.M./Mosquera, M./Whitmore, J.L.. Arboles utiles de la gegin tropical de America del Norte. Department of Agriculture, Forest Service, http://books.google.com/books?hl=en&lr=&id=w_cTAAAYAAJ&oi=fnd&pg=PA3&dq=Spondias+mombin+%2B+%22weed%22&o	[Hybridizes naturally? Yes] Spondias mombin has a complicated taxonomy and many hybrids.
604	1998. Burns, R.M./Mosquera, M./Whitmore, J.L.. Arboles utiles de la gegin tropical de America del Norte. Department of Agriculture, Forest Service, http://books.google.com/books?hl=en&lr=&id=w_cTAAAYAAJ&oi=fnd&pg=PA3&dq=Spondias+mombin+%2B+%22weed%22&o	[Self-compatible or apomictic?] The species is monocious.
604	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Self-compatible or apomictic? Yes] Flowers are bisexual and self-fertile.
605	1997. Nason, J.D./Hamrick, J.L.. Reproductive and genetic consequences of forest fragmentation: two case studies of neotropical canopy trees. Journal of Heredity. 88: 264-276.	[Requires specialist pollinators? No] Spondia is visited by small bees and other small insects.
605	1998. Burns, R.M./Mosquera, M./Whitmore, J.L.. Arboles utiles de la gegin tropical de America del Norte. Department of Agriculture, Forest Service, http://books.google.com/books?hl=en&lr=&id=w_cTAAAYAAJ&oi=fnd&pg=PA3&dq=Spondias+mombin+%2B+%22weed%22&o	[Requires specialist pollinators? No] Wind pollinated.
605	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Requires specialist pollinators? No] Flowers are intensively visited by honeybees early in the morning and provide good bee forage.
606	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Reproduction by vegetative fragmentation?] "Stand establishment using stump plants; natural regeneration; planting stock."
607	1985. Janzen, D.H.. Spondias mombin is culturally deprived in mega-fauna-free forest. Journal of Tropical Ecology. 1: 131-155.	[Minimum generative time (years)? 4+] Spondias mombin becomes fruit bearing trees at 20 years of age.
607	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Minimum generative time (years)? 4+] Fruit and seed production usually begin when a plant is 5 years old.
607	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Minimum generative time (years)? 4+] Flowering starts at age 5 and the flowering cycle is annual.
701	1992. Francis, J.K.. Spondia mombin L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)?] " The most common habitats today are roadsides, pasture fencerows, logged areas and old fields. [possibly]
701	2011. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)?] Unknown.
702	2006. Duvall, C.S.. On the origin of the tree Spondias mombin in Africa. Journal of Historical Geography. 32: 249-266.	[Propagules dispersed intentionally by people? Yes] Widely cultivated in Africa.
702	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Propagules dispersed intentionally by people? Yes] Widely cultivated in the paleotropics.
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence.

704	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Propagules adapted to wind dispersal? No] Fruit it a fleshy drupe [no adaptation for wind dispersal].
705	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Propagules water dispersed? Yes] Grows in dry areas as a riparian species. Grows in stream bottoms.
705	2006. Duvall, C.S.. On the origin of the tree <i>Spondias mombin</i> in Africa. <i>Journal of Historical Geography</i> . 32: 249-266.	[Propagules water dispersed? Yes] <i>Spondias mombin</i> fruits are edible, and animal dispersal is its primary dispersal mechanism. However, <i>Spondias</i> produces a relatively small amount of pulp in relation to total fruit volume, and its corky pit is an adaptation for water dispersal.
706	1997. Nason, J.D./Hamrick, J.L.. Reproductive and genetic consequences of forest fragmentation: two case studies of neotropical canopy trees. <i>Journal of Heredity</i> . 88: 264-276.	[Propagules bird dispersed? Yes] A large tree may produce a crop of many thousands of these fruits that attracts a variety of vertebrate frugivores including howler, spider, and white-faced monkeys, coatis, bats, birds, and rodents. Because <i>Spondias</i> fruits at a time when most other canopy tree species do not, it can be an important component in the diet of these animals, particularly rodents.
706	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules bird dispersed? Yes] The monkey <i>Alouatta palliata</i> eats the fruits and disperses seeds during 3 months of the year. Bats and birds are also seed dispersers."
707	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Propagules dispersed by other animals (externally)? No] Fruit is a fleshy drupe [no means of external attachment].
708	1997. Nason, J.D./Hamrick, J.L.. Reproductive and genetic consequences of forest fragmentation: two case studies of neotropical canopy trees. <i>Journal of Heredity</i> . 88: 264-276.	[Propagules survive passage through the gut? Yes] A large tree may produce a crop of many thousands of these fruits that attracts a variety of vertebrate frugivores including howler, spider, and white-faced monkeys, coatis, bats, birds, and rodents. Because <i>Spondias</i> fruits at a time when most other canopy tree species do not, it can be an important component in the diet of these animals, particularly rodents.
708	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules survive passage through the gut? Yes] "The monkey <i>Alouatta palliata</i> eats the fruits and disperses seeds during 3 months of the year. Bats and birds are also seed dispersers."
708	2006. Duvall, C.S.. On the origin of the tree <i>Spondias mombin</i> in Africa. <i>Journal of Historical Geography</i> . 32: 249-266.	[Propagules survive passage through the gut? Yes] <i>Spondias mombin</i> fruits are edible, and animal dispersal is its primary dispersal mechanism. However, <i>Spondias</i> produces a relatively small amount of pulp in relation to total fruit volume, and its corky pit is an adaptation for water dispersal.
801	1985. Janzen, D.H.. <i>Spondias mombin</i> is culturally deprived in mega-fauna-free forest. <i>Journal of Tropical Ecology</i> . 1: 131-155.	[Prolific seed production (>1000/m ²)? Yes] A large tree may bear as many as 10,000 fruits in one crop.
801	1997. Nason, J.D./Hamrick, J.L.. Reproductive and genetic consequences of forest fragmentation: two case studies of neotropical canopy trees. <i>Journal of Heredity</i> . 88: 264-276.	[Prolific seed production (>1000/m ²)? Yes] "At maturity the fruit are orange-yellow and 2.5-3 cm long with a sweet, fleshy mesocarp. A large tree may produce a crop of many thousands of these fruits."
802	1985. Janzen, D.H.. <i>Spondias mombin</i> is culturally deprived in mega-fauna-free forest. <i>Journal of Tropical Ecology</i> . 1: 131-155.	[Evidence that a persistent propagule bank is formed (>1 yr)No] "At Santa Rosa, the pulp-free nut dries thoroughly in the litter during the dry season, and then leaches and rots during the following rainy season. The seeds in a pile of nuts germinate gradually during the first several months of the rainy season. By the second dry season there are no viable seeds remaining."
802	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Evidence that a persistent propagule bank is formed (>1 yr)No] Seed viability is less than three months.
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides?] Unknown.
804	1992. Francis, J.K.. <i>Spondia mombin</i> L. hogplum - Anacardiaceae- cashew family. SO-ITF-Sm-51: .U.S. Forest Service, http://www.fs.fed.us/global/iitf/pubs/sm_iitf051%20%20%284%29.pdf	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] Young trees coppice well and large trees will sometimes sprout after cutting.

805 2011. WRA Specialist. Personal Communication. [Effective natural enemies present locally (e.g. introduced biocontrol agents?)
Unknown.]
