

Family: *Fabaceae*

Taxon: *Inga edulis*

Synonym: *Mimosa ynga* Vell.

Common Name: Ice cream bean
pois doux
inga-cipó
chalaite

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: EVALUATE
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score 3
101	Is the species highly domesticated?		y=-3, n=0	n
102	Has the species become naturalized where grown?		y=1, n=-1	
103	Does the species have weedy races?		y=1, n=-1	
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)		y=1, n=0	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)	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	n
405	Toxic to animals		y=1, n=0	n
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	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	
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	y
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	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	2
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	
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	
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 3

Supporting Data:

101	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Is the species highly domesticated? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Species suited to tropical or subtropical climate(s)? 2 - High] "Natural distribution of <i>I. edulis</i> ranges from Colombia and Venezuela to north-western Argentina, and from the Andean foothills to Atlantic coastal Brazil. The species is widely cultivated within those borders."
201	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestry Database: a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Species suited to tropical or subtropical climate(s)? 2 - High] "Native: Bolivia, Brazil, Colombia, Ecuador, Peru; Exotic: Costa Rica, Panama"
202	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Quality of climate match data? 2-high] "Natural distribution of <i>I. edulis</i> ranges from Colombia and Venezuela to north-western Argentina, and from the Andean foothills to Atlantic coastal Brazil. The species is widely cultivated within those borders."
203	1983. Duke, J.A.. Handbook of Energy Crops - <i>Inga edulis</i> . http://www.hort.purdue.edu/newcrop/duke_energy/inga_edulis.html	[Broad climate suitability (environmental versatility)? Yes] "Found from sea level to 2,200 m where there is no frost. Ranging from Subtropical Dry to Moist through Tropical Dry to Wet Forest Life Zone, ice-cream bean is reported to tolerate annual precipitation of 6.4 to 40.0 dm (mean of 9 cases = 16.9 dm), annual mean temperature of 21.3 to 27.3°C (mean of 9 cases = 25.1°C), and pH of 5.0 to 8.0 (mean of 7 cases = 6.6)."
203	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Broad climate suitability (environmental versatility)? Yes] "Climatic amplitude (estimates) - Altitude range: 0 - 1600 m - Mean annual rainfall: 1350 - 3000 mm - Rainfall regime: bimodal; uniform - Dry season duration: 0 - 4 months - Mean annual temperature: 17 - 27°C - Mean maximum temperature of hottest month: 25 - 36°C - Mean minimum temperature of coldest month: 16 - 24°C"
204	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Native or naturalized in regions with tropical or subtropical climates? Yes] " <i>I. edulis</i> grows in tropical and subtropical rain forest, under bimodal or uniform climate regimes. Grows well from the Amazon River banks to the Andes Mountains foot hills at almost 1200 m altitude. This species is most widespread in regions without a dry season or with a 3-4 month dry season and a minimum rainfall of 1200 mm per annum."
205	2001. EcoPort. <i>Inga edulis</i> . http://ecoport.org/ep?Plant=1260&entityType=PL***&entityDisplayCategory=full	[Does the species have a history of repeated introductions outside its natural range? Yes] "Its native range is in Amazonian Brazil, Bolivia, Peru, Ecuador and Colombia. It has also been introduced across most of tropical South America, Panama and Costa Rica. Lawrence A. 1993. Introduced to Tanzania, and probably elsewhere in the tropics. Duke J. 1983"
205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Does the species have a history of repeated introductions outside its natural range? Yes] " <i>I. edulis</i> has been widely introduced in Central America as a shade tree for coffee and cacao, now it is planted throughout Central America for many purposes such as fuelwood, weed control and fodder (Pennington, 1997). Trials have also been conducted in Nigeria (Larbi et al., 1998) and Hawaii (Oglesby and Fownes, 1992)."
205	2005. Imada, C.T./Staples, G.W./Herbst, D.R.. Annotated Checklist of Cultivated Plants of Hawai'i. The Bishop Museum, http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/	[Does the species have a history of repeated introductions outside its natural range? Yes] "Locations: Ho'omaluhia Botanical Garden Pacific Tropical Botanical Garden (now National Tropical Botanical Garden) Waimea Arboretum & Botanical Garden"

301	2007. Hosking, J.R./Conn, B.J./Lepschi, B.J./Barker, C.H.. Plant species first recognised as naturalised for New South Wales in 2002 and 2003, with additional comments on species recognised as naturalised in 2000–2001. <i>Cunninghamia</i> . 10(1): 139-166.	[Naturalized beyond native range? Naturalizing in New South Wales] "Notes: The species is spread by seed. In the Port Macquarie collection area, there were over 30 seedlings emerging in long grass around a stump of this species. Conditions were particularly moist over the previous winter and this appears to have led to germination. At the Woolgoolga site, there was a single naturalised juvenile plant 1 m high. Although no plants have reached reproductive age at either site, the number of young plants indicate that this species has the potential to naturalise on the north coast of N.S.W. <i>Inga edulis</i> is cultivated for the edible pulp surrounding the seeds (Cárdenas & Berry in Steyermark et al. 2001). This species appears to be naturalising in the Cairns – Daintree region of far north Queensland..."
301	2010. Cole, R.J./Holl, K.D./Zahawi, R.A.. Seed rain under tree islands planted to restore degraded lands in a tropical agricultural landscape. <i>Ecological Applications</i> . 20(5): 1255–1269.	[Naturalized beyond native range? Yes, in Costa Rica] "Two naturalized softwood species, <i>Erythrina poeppigiana</i> and <i>Inga edulis</i> (both Fabaceae), are fast-growing N-fixing species widely used in agricultural intercropping systems to provide shade and increase soil nutrients, and have extensive branching architecture and fruit (<i>Inga</i>) that attract birds (Pennington and Fernandes 1998, Nichols et al. 2001, Jones et al. 2004)."
301	2011. Jaramillo Díaz, P./Guézou, A./Mauchamp, A./Tye, A.. CDF Checklist of Galapagos Flowering Plants. In: Bungartz, F. et al. (eds.). Charles Darwin Foundation Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www.dar	[Naturalized beyond native range? Not in Galapagos] "Origin: Introduced, Cultivated."
301	2011. The Charles Darwin Foundation. Galapagos Species Checklist - <i>Inga edulis</i> . http://www.darwinfoundation.org/datazone/checklists/vascular-plants/magnoliophyta/inga-edulis-mart/	[Naturalized beyond native range? Not in Galapagos] "Taxon introduced for agricultural or domestic use; not naturalized."
302	2007. Randall, R.P.. Global Compendium of Weeds - <i>Inga edulis</i> [Online Database]. http://www.hear.org/gcw/species/inga_edulis/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - <i>Inga edulis</i> [Online Database]. http://www.hear.org/gcw/species/inga_edulis/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - <i>Inga edulis</i> [Online Database]. http://www.hear.org/gcw/species/inga_edulis/	[Environmental weed? No. Listed as an environmental weed in the Galapagos & elsewhere, but no evidence to support this contention was found in the literature]
304	2010. Downey, P.O./Scanlon, T.J./HoskingE, J.R.. Prioritizing weed species based on their threat and ability to impact on biodiversity: a case study from New South Wales. <i>Plant Protection Quarterly</i> . 25(3): 111-126.	[Environmental weed? No] "Appendix 1. List of weed species that pose a threat and have an ability to impact on biodiversity in New South Wales, ranked in priority order (see text for details on the model)." [<i>Inga edulis</i> listed as Low Priority. Also scored as a potential threat only, & not currently impacting natural ecosystems]
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? Potentially] <i>Inga ingoides</i> , <i>Inga jinicuil</i> , <i>Inga nobilis</i> , <i>Inga quaternata</i> , <i>Inga sapindoides</i> . <i>Inga schimpffii</i> , <i>Inga sp.</i> , <i>Inga spectabilis</i> , and <i>Inga striata</i> are listed as naturalized and/or weeds of some kind, but no evidence of negative impacts was found in the literature.
401	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Produces spines, thorns or burrs? No] "Tree, in the forest it may reach a height of up to 30-40 m with a d.b.h. of 60 cm, buttresses up to 1 m in height. Crown compact. When grown as a shade tree in plantation, after three years it may reach up to 15 m in height with a dbh up to 20 cm, crown spreading, multi-branched. The bark is pale grey and smooth, with pale elongated lenticels. Fascicular roots grow far from the tree, and fine roots have nodules produced by the symbiosis with <i>Rhizobium</i> . Foliage Leaves compound. Petiole 2-5 cm long, rachis of 7-20 cm long, winged (up to 1.6 cm wide); nectaries present, sessile, 2-3 mm in diameter. Leaflets 4-6 pairs, petiolule 1.5-3 mm long, terminal leaflets 10-19 and 3.8-8.9 cm elliptic to obovate, apex acute, base round; basal leaflets 3.8-7.5 and 1.9-4.3 cm elliptic of ovate."
402	2001. Adeorike, V./Ogburia, M.N./Anegbeh, P.. Evaluation of the allelopathic influence of selected multipurpose tree species on maize (<i>Zea mays</i>) under a simulated field condition. <i>Tropicultura</i> . 9(4): 191-193.	[Allelopathic? Possibly. Evidence from laboratory experiment] "Similarly, <i>Inga edulis</i> leachate had inhibiting effects on radicle and shoot of germinating maize seeds. This result suggests that <i>Inga edulis</i> , <i>Anthonatha macrophylla</i> and <i>Dactyladenia barterii</i> produce allelochemicals which inhibit seed germination and growth of maize under the conditions of the experiment. Investigations on allelopathic characteristics of potential MPTs could be integrated in farm planning strategies in a tropical agroecology especially where alley cropping is contemplated."

402	2003. Kanmegne, J./Bayomock, L.A./Degrande, A./Asaah, E./Duguma, B.. Establishment of <i>Inga edulis</i> and <i>Calliandra calothyrsus</i> in improved fallow systems in southern Cameroon. <i>Agroforestry Systems</i> . 58: 119–124.	[Allelopathic? Unknown] "On degraded acid soils, introducing <i>Calliandra</i> or <i>Inga</i> consistently improves the crop yields." [suggests that <i>Inga</i> is not allelopathic]
402	2010. Mourão Júnior, M./Souza Filho, A.P.S.. Differences in allelopathic activity patterns in Leguminosae. <i>Planta Daninha</i> . 28: 939-951.	[Allelopathic? Possibly. Evidence from laboratory experiment] "Innumerable plant species in the Amazon forest may be an excellent alternative to meet society's demand for natural products. This work aimed to determine and characterize the pattern of allelopathic activity in species of the Leguminosae family, according to species variation, extract source, and receptor plant sensitivity. Bio assays of seed germination and radicle and hypocotyl elongation were developed under controlled conditions. The results indicated that the species studied do not present a similar pattern regarding the potential allelopathic effects; however, there is a hierarchy concerning the intensity of the global effects, with the allelopathic inhibitory potential being more extensive and effective for the species <i>Bauhinia guianensis</i> , <i>Bowdichia virgiloides</i> , <i>Parkia pendula</i> and <i>Platimonia reticulata</i> , and more restricted and effective for <i>Bauhinia macrostachya</i> . The plant fraction factor showed differences in the activity pattern, with the leaves being the main source of allelochemicals for most species, and the roots, for <i>Bauhinia macrostachya</i> and <i>Inga edulis</i> . In terms of response pattern of the receptor plants, radicle elongation is more sensitive to the effects of the extracts, with hypocotyl elongation being the least sensitive. The effect of the extracts was more intense for <i>Mimosa pudica</i> . These results confirm the importance of the Amazon forest as a source of chemical compounds of interest to mankind, which by itself justifies its preservation."
403	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Parasitic? No] "Tree, in the forest it may reach a height of up to 30-40 m with a d.b.h. of 60 cm, buttresses up to 1 m in height." [Fabaceae]
404	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Unpalatable to grazing animals? No] "In the Peruvian Amazon it is also planted as a shade tree in pastures (such as with <i>Brachiaria</i> and <i>Panicum</i>) and also provides fodder for cattle (Pennington, 1997)."
404	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. <i>Agroforestry Database: a tree reference and selection guide version 4.0</i> . World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Unpalatable to grazing animals? No] "Fodder: Pigs eat seeds when hungry, and cattle will even eat whole pods and leaves."
405	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Toxic to animals? No evidence] "...provides fodder for cattle..."
406	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Host for recognized pests and pathogens? No] " <i>I. edulis</i> has no major problem with damaging pests or pathogens affecting the wood, bark or leaves. It has an association with ants that milk the glands and protect the tree against the attack from <i>Atta</i> spp. (leaf cutter ants). Minor pests include Lepidoptera larvae that defoliate the tree and fruit fly larvae that can damage the seed testa."
406	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. <i>Agroforestry Database: a tree reference and selection guide version 4.0</i> . World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Host for recognized pests and pathogens? No] "Although the trees are resistant to leaf cutting ants, Lepidoptera larvae have been seen to completely defoliate it. Fruit fly larvae often damage the seed testa, especially in late maturity. Slight damage from fungal attack (<i>Rhizoctonia</i>) of seedlings has been noticed; otherwise the trees seem very resistant to diseases and pests. In Ecuador, <i>I. edulis</i> is particularly susceptible to infestation with mistletoe."
407	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Causes allergies or is otherwise toxic to humans? No] " <i>I. edulis</i> is a cash crop due to its highly popular fruit (its main non-wood product). Leaves are used as fodder for cattle when planted either as a shade tree or as a live fence. The mulch is used to control weeds in agroforestry systems and to provide nutrients." [Widely used species with no evidence of toxicity]
408	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. <i>Agroforestry Database: a tree reference and selection guide version 4.0</i> . World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Creates a fire hazard in natural ecosystems? No evidence] "Fuel: The ease with which the seed germinates, its quick growth, rusticity and high coppicing ability make this species useful for the smallholder's woodlot and it is also a useful bush-fallow species. The branches are a popular source of firewood, with a high calorific value and little smoke, although the tree is not cultivated specifically for fuel." [although used as a source of firewood, there is no evidence that the species increases fire hazards in natural ecosystems]
409	2001. EcoPort. <i>Inga edulis</i> . http://ecoport.org/ep?Plant=1260&entityType=PL***&entityDisplayCategory=full	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Range & intensity: It is a forest gap regenerator, although seedlings often establish themselves in the shade of other trees, it needs light to grow and flower. In the forest it becomes a canopy tree, but it is also common in secondary forest."

409	2005. Park, A./Justiniano, M.J./Fredericksen, T.S.. Natural regeneration and environmental relationships of tree species in logging gaps in a Bolivian tropical forest. <i>Forest Ecology and Management</i> . 217: 147–157.	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Table 1 Characteristics of commercial and pioneer species sampled at La Chonta, Bolivia." [Inga edulis listed as having M, medium tolerance, versus other categories which included IE, intolerant pioneer; I, intolerant]
409	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. <i>Agroforestry Database: a tree reference and selection guide version 4.0</i> . World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "It is a light-demanding gap species of lowland rain forest, where it becomes a large tree, and it is also found in riparian situations."
410	2001. EcoPort. Inga edulis. http://ecoport.org/ep?Plant=1260&entityType=PL***&entityDisplayCategory=full	[Tolerates a wide range of soil conditions? Yes] "Physical: The trees are apparently widely adaptable. In their native habitats, the trees thrive on many soil types, even limestone. Some varieties withstand waterlogged conditions."
410	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Tolerates a wide range of soil conditions? Yes] "I. edulis grows on acid soil of low fertility and tolerates short periods of flooding. This species grows on ultisols as well as on oxisols, mostly infertile. When planted on inceptisols or on entisols formed by river depositions, it grows well. This species requires medium to deep soils, and will not grow in gravelly soils. It grows in very variable physiographic situations ranging from the alluvial flood plain to the Andean foothills. It is planted on slopes along the contours to control soil erosion ... Soil descriptors - Soil texture: light; medium - Soil drainage: free - Soil reaction: acid - Special soil tolerances: shallow; infertile - Soil types: acid soils; acrisols; alluvial soils; fluvisols; ferralsols; podzoluvisols; luvisols; ultisols; tropical soils"
411	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Climbing or smothering growth habit? No] "Tree, in the forest it may reach a height of up to 30-40 m with a d.b.h. of 60 cm, buttresses up to 1 m in height."
412	2001. EcoPort. Inga edulis. http://ecoport.org/ep?Plant=1260&entityType=PL***&entityDisplayCategory=full	[Forms dense thickets? No] "It is abundant along margins of large rivers; common in thickets usually below the high water mark" [part of thicket vegetation, but no evidence that these thickets are dominated by monotypic stands of Inga edulis]
412	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Self-compatible or apomictic? No] No evidence
501	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Aquatic? No] "Tree, in the forest it may reach a height of up to 30-40 m with a d.b.h. of 60 cm, buttresses up to 1 m in height." [terrestrial]
502	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Grass? No] Fabaceae
503	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Nitrogen fixing woody plant? Yes] "Due to its nitrogen fixing abilities, it is used in soil improvement, and when planted on contours it also helps to reduce soil erosion (Alegre and Rao, 1995)."
504	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Tree, in the forest it may reach a height of up to 30-40 m with a d.b.h. of 60 cm, buttresses up to 1 m in height."
601	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Evidence of substantial reproductive failure in native habitat? No] No evidence
601	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. <i>Agroforestry Database: a tree reference and selection guide version 4.0</i> . World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1983. Duke, J.A.. <i>Handbook of Energy Crops - Inga edulis</i> . http://www.hort.purdue.edu/newcrop/duke_energy/inga_edulis.html	[Produces viable seed? Yes] "Propagates naturally by seeds in the forest."
602	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Produces viable seed? Yes] "I. edulis stands may be established using direct sowing. In soils with adequate humidity at the beginning of the rainy season, a survival rate above 90% is reported (Pennington, 1997; Reynel and Pennington, 1997)."
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	1998. Brennan, E.B./Mudge, K.W.. Vegetative propagation of <i>Inga feuillei</i> from shoot cuttings and air layering. <i>New Forests</i> . 15: 37–51.	[Self-compatible or apomictic? No] "Another reason to consider vegetative propagation of Inga is to exploit the self-incompatibility (SI) mechanism thought to be associated with its sexual reproduction."

604	2001. EcoPort. <i>Inga edulis</i> . http://ecoport.org/ep?Plant=1260&entityType=PL***&entityDisplayCategory=full	[Self-compatible or apomictic? No] "The tree is self-incompatible and needs at least two genetically different individuals for fruit set."
605	2001. Nichols, J.D./Rosemeyer, M.E./Carpenter, F.L./Kettler, J.. Intercropping legume trees with native timber trees rapidly restores cover to eroded tropical pasture without fertilization. <i>Forest Ecology and Management</i> . 152: 195-209.	[Requires specialist pollinators? Yes] "A final benefit of this species is that <i>I. edulis</i> attracts a variety of pollinators and seed dispersers (Lawrence et al. 1995), thereby contributing to biodiversity of the system."
605	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Requires specialist pollinators? No] "Inflorescence axillary up to 6 in each axil. Peduncle 2.5 cm long, floral rachis 2.2 cm long, bracts 6 mm long, flowers sessile. Calyx opens in a tube 7 mm long, tubular, lobes 1.5 mm long. Corolla tube 1.4 cm long, lobes 3 mm long. Stamens 55-100, staminal tube 1.5 cm long, 2 mm diameter, free filaments 2.2 cm long. Ovary of one carpel, glabrous, style slightly longer than stamens. Ovules 20-30. Fruit a legume 0.3-1.0 m long (2 m reported in Yurimaguas, Peru), 2-5 cm in diameter, containing seeds 2-3 cm long and 1-1.5 cm wide... <i>I. edulis</i> is a hermaphrodite, monoecious species. It is pollinated by bees and butterflies."
606	1983. Duke, J.A.. <i>Handbook of Energy Crops - Inga edulis</i> . http://www.hort.purdue.edu/newcrop/duke_energy/inga_edulis.html	[Reproduction by vegetative fragmentation? No] "Propagates naturally by seeds in the forest."
606	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Reproduction by vegetative fragmentation? No evidence] " <i>I. edulis</i> stands may be established using direct sowing. In soils with adequate humidity at the beginning of the rainy season, a survival rate above 90% is reported (Pennington, 1997; Reynel and Pennington, 1997). <i>I. edulis</i> is also planted using nursery stock, 2-months-old. Soil treatment either before or after planting is not necessary. The growth of seedlings could be improved if seeds are soaked in water and soil from mature trees which contains fine roots with nodules; this will favour formation of rhizobia and mycorrhiza. Seedlings may also be obtained using cuttings from woody branches of small diameter in humid and water-saturated conditions, using IBA to promote root growth (ICRAF-BID, 1996)." [Vegetative propagation by cuttings]
607	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Minimum generative time (years)? 2] "Flowering begins after 18 months and flower production increases after that...Fruit production of <i>I. edulis</i> begins during the second year after planting."
701	2010. Condit, R./Pérez, R./Daguerré, N.. <i>Trees of Panama and Costa Rica</i> . Princeton University Press, Princeton, NJ	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "The fruit is slender, cylindrical, and absurdly long, well over 1 m...Common along roads in Bocas del Toro; occasionally seen elsewhere in farmland of both countries" [Although common along roads, the fruit are very large, making it unlikely that the seeds would be inadvertently dispersed]
701	2011. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally? No] No evidence, and seeds have no means of external attachment
702	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules dispersed intentionally by people? Yes] "An economic importance study, conducted in three regions of the Peruvian Amazon, showed <i>I. edulis</i> to be the second most important species (after <i>Bactris gasipaes</i>) due to its multipurpose uses such as fruit, seeds, fuelwood, timber and charcoal (Labarta and Weber, 1998). <i>I. edulis</i> is used in agroforestry as a shade tree for coffee and cocoa plantations; a source of mulch to reduce weed encroachment and for release of nutrients; and is also used to foster woody regeneration in deforested landscapes."
703	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules likely to disperse as a produce contaminant? No. Seeds relatively large] "Fruit, legume of 0.3-1.0 m long (2 m reported in Yurimaguas, Peru), 2-5 cm diameter, seeds of 2-3 cm long and 1-1.5 cm wide."
704	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules adapted to wind dispersal? No] "Seeds are dispersed by birds and mammals that eat the sweet pulp surrounding the seeds."
705	1983. Duke, J.A.. <i>Handbook of Energy Crops - Inga edulis</i> . http://www.hort.purdue.edu/newcrop/duke_energy/inga_edulis.html	[Propagules water dispersed? Possibly, but no direct evidence] "Abundant along margins of large rivers; common in thickets usually below the high-water mark, and in wooded swamps. Also in ravines, upland woods at edge of rivers and adjacent rainforests."
706	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules bird dispersed? Yes] "Seeds are dispersed by birds and mammals that eat the sweet pulp surrounding the seeds."
707	2005. CAB International. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	[Propagules dispersed by other animals (externally)? Unknown] "Seeds are dispersed by birds and mammals who eat the sweet pulp surrounding the seeds." [No evidence whether the seeds are ingested by animals or if can also be carried externally.]

708	2002. Stevenson, P.R./Castellanos, M.C./Pizarro, J.C./Garavito, M.. Effects of Seed Dispersal by Three Ateline Monkey Species on Seed Germination at Tinigua National Park, Colombia. International Journal of Primatology. 23(6): 1187-1204.	[Propagules survive passage through the gut? Yes] "In 3 other plant species dispersed by woolly and spider monkeys (<i>Simarouba amara</i> , <i>Inga edulis</i> , and <i>Protium sagotianum</i>), there was higher germination in seeds defecated by them versus controls (Table I)."
801	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Prolific seed production (>1000/m ²)? No] " A medium size tree produces from 222-242 pods. The pod production per hectare depends on the demand in the market; in cities where the demand for the fruits is high, trees are planted at higher densities. In Peru, pod production ranges from 1727 pods/ha to 6892 pods/ha in Yurimaguas and Iquitos respectively." [seeds relatively large]
802	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "The seed pods are heavy and bulky to transport, and this and short period of seed viability mean the seed must be collected near the planting site...Seeds are recalcitrant and do not tolerate long periods of storage. They are viviparous and should be sown promptly after harvesting the fruit. If seeds are washed, dried, and immersed in fungicide and then stored in sawdust, they will remain viable for three weeks (Reynel and Pennington, 1997)."
802	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A.. Agroforestry Database: a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "The seeds are recalcitrant and sometimes begin to germinate in the pod, often within a few days of reaching the ground, where they need moisture to survive. The seeds can be stored for only 2 weeks. Best results have been achieved by removing the pulp and storing the seed in impermeable bags."
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on chemical control or herbicide efficacy for this species
804	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "It has the ability to coppice, although better results are obtained if a few leading branches are left...Ability to fix nitrogen; regenerate rapidly; coppice; pollard"
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]