

<i>Artocarpus altilis</i> [syn=<i>Artocarpus camansi</i>, <i>Artocarpus communis</i>] (Breadfruit, Dugbug) -- UNITED STATES		Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to US climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high).	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high).	2	
2.03	Broad climate suitability (environmental versatility).	?	
2.04	Native or naturalized with mean annual precipitation of 11-60 inches.	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range.	y	2
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	n	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	n	-1
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	?	
4.07	Causes allergies or is otherwise toxic to humans.	n	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on any soil order representing >5% cover in the US.	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	?	
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat		
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	?	
6.07	Minimum generative time (years)	3	0
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n	-1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	n	-1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	?	
8.01	Prolific seed production	?	
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1

8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05	Effective natural enemies present in the contiguous US and Alaska		
	Total Score		-1
	Implemented Pacific Second Screening		no
	Risk Assessment Results		Low Risk

	Reference	Source data
1.01	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013.	1. Hundreds of breadfruit cultivars have been described and named, particularly in the Pacific islands. Usually the cultivars are poorly defined and only grown in one or two localities, so that it is not easy to compare cultivars.
1.02		skip to 2.01
1.03		skip to 2.01
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2.a-c. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013). 3. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 4.a-b. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	No computer analysis was performed. 1. Global hardiness zone: 10-13; equivalent to USDA Hardiness zones (9a?)9b-11b ([north?], central, south zones of Florida). 2.a. Native: Asia-Tropical: Malesia: Indonesia (Irian Jaya, Moluccas), Papua New Guinea, Philippines; Pacific: Northwestern Pacific: Guam, Micronesia [perhaps indigenous], Northern Mariana Islands, Palau, Southwestern Pacific, Vanuatu [perhaps indigenous]. 2.b. Naturalized: Pacific: North-Central Pacific: United States (Hawaii); South-Central Pacific: French Polynesia; Southwestern Pacific: Solomon Islands [perhaps indigenous]. 2.c. Cultivated throughout the tropics. 3. Prefers a hot (temperature 20—40°C) climate. 4.a. The wild, seeded, ancestral form of breadfruit, <i>Artocarpus camansi</i> Blanco, or breadnut, is native to New Guinea, and possibly the Moluccas (Indonesia) and Philippines. Breadfruit, both seeded and seedless forms, does not naturally occur in the Pacific islands, although long-abandoned plantings are sometimes mistaken for wild trees. 4.b. Cultivated on most Pacific islands, and is now pantropical in distribution. Seedless varieties were introduced from Tahiti to Jamaica and St. Vincent in the late 1700s; a Tongan variety was introduced to Martinique and Cayenne via Mauritius. These Polynesian varieties were then spread throughout the Caribbean and to Central and South America, Africa, India, Southeast Asia, Madagascar, the Maldives, the Seychelles, Indonesia, Sri Lanka, and northern Australia. Breadfruit is also found in south Florida.
2.02		No computer analysis was performed. Native range is well known; refer to 2.01 source data.
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013.	1. Distribution in the native and cultivated ranges occurs in at least 2, possibly 3 climatic groups (Af & Am, [Aw?]). 2. Prefers a hot (temperature 20—40°C) climate. The latitudinal limits are approximately 17°N and S; the maritime climate of small islands allows growth to 20—23°N. The tree is occasionally found in the highlands (even up to 1500 m) and at higher latitudes, but yield and fruit quality suffer in cooler conditions; tree is more at home in the equatorial lowlands (below 600 m).

2.04	<p>1. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html. Accessed 04 December 2013. 2. Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte, 2013: Online Rainfall Atlas of Hawai'i. <i>Bull. Amer. Meteor. Soc.</i> 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1. 2. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 09-Dec-2013. 4. Morton, J. 1987. Breadfruit. p. 50–58. In: <i>Fruits of warm climates</i>. Julia F. Morton, Miami, FL. Accessed via http://www.hort.purdue.edu/newcrop/morton/breadfruit.html, 11 December 2013.</p>	<p>1. Native and naturalized areas: 1475 mm-7474 mm (58.2"-294.3"). 2. Hawaii: 204-10,271 mm (8.0"-404.4"). 3. Prefers a humid (rainfall 2000—3000 mm [78.7"-118.1"], relative humidity 70—90%) climate. 4. It has been reported that it requires an annual rainfall of 80"-100" (2030-2540 mm), and a relative humidity of 70 to 80%.</p>
2.05	<p>1.a-b.USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013). 2. USDA, NRCS. 2013. The PLANTS Database (http://plants.usda.gov, 9 December 2013). National Plant Data Team, Greensboro, NC 27401-4901 USA.</p>	<p>1. Cultivated throughout the tropics. 2. Introduced to Puerto Rico and Virgin Islands. 3. Cultivated on most Pacific islands, and is now pantropical in distribution. Seedless varieties were introduced from Tahiti to Jamaica and St. Vincent in the late 1700s; a Tongan variety was introduced to Martinique and Cayenne via Mauritius. These Polynesian varieties were then spread throughout the Caribbean and to Central and South America, Africa, India, Southeast Asia, Madagascar, the Maldives, the Seychelles, Indonesia, Sri Lanka, and northern Australia. Breadfruit is also found in south Florida.</p>
3.01	<p>1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013).</p>	<p>1. Naturalized: Pacific: North-Central Pacific: United States (Hawaii); South-Central Pacific: French Polynesia; [Southwestern Pacific: Solomon Islands, perhaps indigenous].</p>
3.02	<p>1. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) <i>Species Profiles for Pacific Island Agroforestry</i>. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. <http://www.traditionaltree.org>.</p>	<p>1. Invasive potential: very little potential for invasiveness. Most varieties are seedless and must be propagated vegetatively with the assistance of humans to distribute and spread the species. Breadfruit does produce root shoots, so clonal offsprings spread a limited distance from the original tree. Seeds that are produced by seeded varieties lose viability quickly and are not readily spread.</p>
3.03	<p>1. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) <i>Species Profiles for Pacific Island Agroforestry</i>. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. <http://www.traditionaltree.org>.</p>	<p>1. Invasive potential: very little potential for invasiveness. Most varieties are seedless and must be propagated vegetatively with the assistance of humans to distribute and spread the species. Breadfruit does produce root shoots, so clonal offsprings spread a limited distance from the original tree. Seeds that are produced by seeded varieties lose viability quickly and are not readily spread.</p>
3.04	<p>1. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) <i>Species Profiles for Pacific Island Agroforestry</i>. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. <http://www.traditionaltree.org>.</p>	<p>1. Invasive potential: very little potential for invasiveness. Most varieties are seedless and must be propagated vegetatively with the assistance of humans to distribute and spread the species. Breadfruit does produce root shoots, so clonal offsprings spread a limited distance from the original tree. Seeds that are produced by seeded varieties lose viability quickly and are not readily spread.</p>
3.05		No evidence.
4.01		These structures are not included in the description of this species.
4.02		

4.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013).	1. Family: Moraceae (not a parasitic family).
4.04	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Morton, J. 1987. Breadfruit. p. 50–58. In: <i>Fruits of warm climates</i> . Julia F. Morton, Miami, FL. Accessed via http://www.hort.purdue.edu/newcrop/morton/breadfruit.html , 11 December 2013.	1. Leaves and fallen fruits make good animal feed. 2. Breadfruit leaves are eagerly eaten by domestic livestock. In India, they are fed to cattle and goats; in Guam, to cattle, horses and pigs. Horses are apt to eat the bark of young trees as well, so new plantings must be protected from them.
4.05	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Morton, J. 1987. Breadfruit. p. 50–58. In: <i>Fruits of warm climates</i> . Julia F. Morton, Miami, FL. Accessed via http://www.hort.purdue.edu/newcrop/morton/breadfruit.html , 11 December 2013.	1. Leaves and fallen fruits make good animal feed. 2. Breadfruit leaves are eagerly eaten by domestic livestock. In India, they are fed to cattle and goats; in Guam, to cattle, horses and pigs. Horses are apt to eat the bark of young trees as well, so new plantings must be protected from them.
4.06	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013.	1. Main pests include <i>Bactrocera dorsalis</i> , <i>B. papaya</i> , <i>B. passiflorae</i> , <i>B. umbrosa</i> , <i>B. xanthodes</i> , <i>Miphaecoccus nipae</i> , & <i>Rastrococcus invadens</i> . 2. In the Pacific outbreaks of Pingelap disease have caused dieback and death of trees on a large scale since the 1950s; it was estimated that only 20% of the trees survived an outbreak in Guam in 1964. The causal organism is not known and there is no cure. Typically the top branches die back first; after a while the lower branches also wilt and the tree eventually dies. Other diseases of the breadfruit are dieback (<i>Fusarium</i> , <i>Pythium</i> and <i>Rosellinia</i>), pink disease (<i>Corticium</i> and <i>Pseudocercospora</i>) soft rot of fruit (<i>Phytophthora palmivora</i>), fruit rot (<i>Phytophthora</i> , <i>Phyllosticta</i> , <i>Rhizopus</i>), stem-end rot (<i>Phomopsis</i> , <i>Dothiorella</i> and <i>Phylospora</i>), leaf blotch (<i>Phyllosticta artocarpicola</i>), leaf spot (<i>Pseudocercospora</i> and <i>Cercospora</i>), leaf rust (<i>Uredo artocarpi</i>) and root rot (<i>Phillinus noxius</i>).
4.07		No evidence.
4.08		
4.09	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. Young trees grow better under shade but later full sun is required.

4.10	1. United States Department of Agriculture, Natural Resources Conservation Service. Global Soil Regions Map. September, 2005. http://soils.usda.gov/use/worldsoils/mapindex/order.html . Accessed 10 December 2013. 2. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 3. Morton, J. 1987. Breadfruit. p. 50–58. In: Fruits of warm climates. Julia F. Morton, Miami, FL. Accessed via http://www.hort.purdue.edu/newcrop/morton/breadfruit.html , 11 December 2013.	1. The natural distribution of <i>A. altilis</i> grows largely on Inceptisols, and Ultisols. These soil types make up >5% cover in the U.S.. 2. Tree growth is best in deep, well-drained, moist alluvial soils rich in humus. The trees also grow on shallow coralline soils of the atolls, and in New Guinea they are found at the forest edge in floodplains and swamps. 3. According to many reports, the breadfruit tree must have deep, fertile, well-drained soil. But some of the best authorities on South Pacific plants point out that the seedless breadfruit does well on sandy coral soils, and seeded types grow naturally on "coraline limestone" islands in Micronesia.
4.11	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. Monoecious tree, evergreen, up to 30 m tall. Trunk straight, 5–8 m tall, 0.6–1.8 m in diameter, often buttressed. trunk of clonally propagated trees branched low; twigs spreading, very thick
4.12	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. Trunk often buttressed, of clonally propagated trees branched low; twigs spreading, very thick.
5.01	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013).	1. Family: Moraceae
5.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013).	1. Family: Moraceae
5.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (4 January 2013).	1. Family: Moraceae
5.04		No evidence of these features in the description of this species.
6.01		
6.02	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2.	1. Seeded breadfruit is usually propagated by seed. Fresh seeds germinate readily giving 90–95% germination. Seeds germinate about 2 weeks after sowing. 2. Breadfruit exhibit great morphological variability, ranging from true seedless varieties to those with several small aborted seeds, or one to a few viable seeds, to varieties with numerous viable seeds.
6.03		
6.04	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg [Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. The male inflorescences reach anthesis 10–15 days after emergence and well before the female inflorescences on the same tree, thus limiting self-pollination. 2. It is cross-pollinated, but pollination is not required for the fruit to form (flowers fuse together and develop into the fleshy, edible portion of the fruit).

6.05	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. If tapped at anthesis the male inflorescences release clouds of pollen, indicating that pollination is largely by wind
6.06	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. (Natural vegetative spread is not noted in this reference). Seedless breadfruit is traditionally propagated from root suckers, which can be separated when adventitious roots have been formed. The more common propagation method is by root cuttings. 2. Breadfruit does produce root shoots, so clonal offsprings spread a limited distance from the original tree.
6.07	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013	1. Seedlings tend to grow slowly, but they respond well to better growing conditions and may start flowering in 4—10 years. Asexually propagated seedless forms start flowering after 3—4 years.
7.01	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. No adaptations that would suggest propagules could be dispersed unintentionally. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).
7.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?4319 (04 December 2013)	1. Economic importance: human food (fruit, seeds, starch, vegetable); materials (latex/rubber).
7.03	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).
7.04	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. No adaptations that would suggest propagules could be dispersed unintentionally. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).

7.05	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. No adaptations that would suggest propagules could be dispersed unintentionally. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).
7.06	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. No adaptations that would suggest propagules could be dispersed unintentionally. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).
7.07	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. No adaptations that would suggest propagules could be dispersed unintentionally. Fruit a syncarp formed from the entire inflorescence, cylindrical to globose, 10—30 cm in diameter. 2. Fruits are variable in shape, size, and surface; usually round, oval, or oblong ranging from 9-20 cm (3.6"-8") wide and more than 30 cm (12") long, weighing 0.25-6 kg (0.5-13 lb).
7.08	1. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. Seeds are distributed by flying foxes, where they occur.
8.01	1. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. Fruits contain none to many seeds, depending on the variety. Seeded varieties are most common in the southwestern Pacific; seedless varieties are most common in Micronesia and the eastern islands of Polynesia (all varieties elsewhere in the tropics are seedless).
8.02	1. Rajendran, R., 1991. <i>Artocarpus altilis</i> (Parkinson) Fosberg[Internet] Record from Proseabase. Verheij, E.W.M. and Coronel, R.E. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org . Accessed from Internet: 09-Dec-2013. 2. Ragone, D. 2006. <i>Artocarpus altilis</i> (breadfruit), ver. 2.1. In: Elevitch, C.R. (ed.) Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. < http://www.traditionaltree.org >.	1. Fresh seeds germinate readily giving 90—95% germination. The seeds lose viability within a few weeks and cannot be stored in a refrigerator. 2. Seeds have no period of dormancy; they germinate immediately and are unable to withstand desiccation.
8.03		
8.04	1. Morton, J. 1987. Breadfruit. p. 50—58. In: Fruits of warm climates. Julia F. Morton, Miami, FL. Accessed via http://www.hort.purdue.edu/newcrop/morton/breadfruit.html , 11 December 2013.	1. One can deliberately induce suckers by uncovering and injuring a root. Pruning the parent tree will increase the number of suckers, and root pruning each sucker several times over a period of months before taking it up will contribute to its survival when transplanted.
8.05		