

**Australia/New Zealand Weed Risk Assessment adapted for Florida.**

**Data used for analysis published in: Gordon, D.R., D.A. Onderdonk, A.M. Fox, R.K. Stocker, and C. Gantz. 2008. Predicting Invasive Plants in Florida using the Australian Weed Risk Assessment. Invasive Plant Science and Management 1: 178-195.**

<i>Pouteria sapota (mamey sapote)</i>			
Question number	Question	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 Florida's USDA climate 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 in habitats with periodic inundation	n	0
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	?	
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	n	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	?	
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	?	
4.1	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils)	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	n	0
5.01	Aquatic	n	0

5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte		
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		
6.05	Requires specialist pollinators	n?	0
6.06	Reproduction by vegetative fragmentation	n	-1
6.07	Minimum generative time (years)	6	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
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	?	
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	y	1
8.01	Prolific seed production	n	-1
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		
8.05	Effective natural enemies present in Florida, or east of the continental divide		
<b>Total Score</b>			<b>-3</b>

<b>Outcome</b>	<b>Accept*</b>
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\*Used secondary screen from: Daehler, C. C., J.L. Denslow, S. Ansari, and H. Kuo. 2004. A risk assessment system for screening out harmful invasive pest plants from Hawaii's and other Pacific islands. *Conserv. Biol.* 18: 360-368.

section	# questions answered	satisfy minimum?
A	6	yes
B	9	yes
C	15	yes
total	30	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		widely cultivated, but selection has likely been for more fruits
1.02		
1.03		
2.01	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	1. "The mamey sapote is best adapted to the lowland humid tropics with a fairly even distribution of rainfall. It requires a hot climate, but mature trees tolerate occasional, very light frost." 2. "The sapote tree is limited to tropical or near-tropical climates."
2.02		
2.03		
2.04	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Balerdi, CF, JH Crane, and I Maguire (2005) Mamey sapote growing in the Florida home landscape. University of Florida, IFAS Extension, FC-30 ( <a href="http://edis.ifas.ufl.edu/pdf/files/MG/MG33100.pdf">http://edis.ifas.ufl.edu/pdf/files/MG/MG33100.pdf</a> ).	1. "Waterlogging is not tolerated." 2. "Mamey sapote are intolerant of constantly wet or flooded soil conditions."
2.05	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"The mamey sapote occurs wild in the humid lowlands of Central America and southern Mexico...It is now widely cultivated from Mexico to northern South America and the West Indies. It was taken at an early date to the Philippines and later to Indonesia, Malaysia and Vietnam."
3.01	Liogier, HA (1995) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 4. Editorial de la Universidad de Puerto Rico.	"persistent" in Puerto Rico
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	no description of these traits
4.02		no evidence

4.03	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	no description of this
4.04		
4.05		no evidence, but apparently toxic to humans
4.06	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Gould, WP and G. Hallman (2001) Host status of mamey sapote to Caribbean fruit fly (Diptera: Tephritidae). Florida Entomologist 84: 370-375.	1. "Few diseases and insects attack the mamey sapote and damage is rarely significant." 2. In lab testing, some fruit fly larvae were found in mamey sapote fruit, but none were found in field tests.
4.07	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	1. "The smooth, slightly chewy flesh of the fruit is eaten fresh out of the hand." BUT "The milky sap from the bark and green fruit is irritant to the eyes, and caustic and vesicant to the skin." 2. "The leaves are reportedly poisonous."
4.08		no evidence
4.09	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Balerdi, CF, JH Crane, and I Maguire (2005) Mamey sapote growing in the Florida home landscape. University of Florida, IFAS Extension, FC-30 ( <a href="http://edis.ifas.ufl.edu/pdf/files/MG/MG33100.pdf">http://edis.ifas.ufl.edu/pdf/files/MG/MG33100.pdf</a> ).	1. "Initial shade, mulch and a cover crop are beneficial." BUT 2. "In general, mamey sapote trees should be planted in full sun for best growth and fruit production."
4.1	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	"The tree makes its best growth on the heavy soils - deep clay and clay loam - of Guatemala but it does well on a wide range of soil types, even infertile, porous sand."
4.11	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"erect evergreen or deciduous tree, 7-20(-40) m tall"
4.12		no evidence
5.01		terrestrial
5.02	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Sapotaceae
5.03	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Sapotaceae
5.04		
6.01		
6.02	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"The mamey sapote is mostly grown from seed which takes 3-5 weeks to germinate."
6.03		
6.04		

6.05	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	"The nectar of the flowers is gathered by honeybees."
6.06	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"Vegetative propagation - by grafting - is difficult" [so even artificial means of vegetative propagation are difficult]
6.07	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	1. "The mamey sapote is a slow growing tree, coming into production 6-8 years after planting when raised from seed." 2. "Normally seedlings will not bear until they are 8 to 10 years old".
7.01		
7.02	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"It is now widely cultivated from Mexico to northern South America and the West Indies. It was taken at an early date to the Philippines and later to Indonesia, Malaysia and Vietnam."
7.03		no evidence
7.04	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"Fruit a globose, ovoid or ellipsoid berry, 8-20 cm long, often bluntly pointed at apex, weighing 0.25-2.5 kg". [no evidence of adaptations for wind dispersal]
7.05		no evidence
7.06		fleshy fruit, but possibly too large for birds
7.07	Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia.	"Fruit a globose, ovoid or ellipsoid berry, 8-20 cm long, often bluntly pointed at apex, weighing 0.25-2.5 kg". [no evidence of any means of attachment]
7.08	Brewer, SW and M Rejmanek (1999) Small rodents as significant dispersers of tree seeds in a Neotropical forest. Journal of Vegetation Science 10: 165-174.	Agoutis moved and buried seeds of <i>Pouteria</i> , some of which were retrieved and eaten, but some of which remained buried. [this is not internal dispersal, but <i>Pouteria</i> is a large, fleshy fruit, and is likely consumed and dispersed by large frugivores]
8.01	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Balerdi, CF, JH Crane, and I Maguire (2005) Mamey sapote growing in the Florida home landscape. University of Florida, IFAS Extension, FC-30 ( <a href="http://edis.ifas.ufl.edu/pdffiles/MG/MG33100.pdf">http://edis.ifas.ufl.edu/pdffiles/MG/MG33100.pdf</a> ).	1. seeds 1(-4) 2. "Mature trees may bear 200 to 500 fruit per year. Twice this amount may be obtained from large trees." [with typically 1 seed per fruit, on a large tree, this would not meet criteria for prolific seed production of >500/m <sup>2</sup> /year]
8.02	1. Verheij and Coronel, eds. (1992) Plant Resources of South-East Asia. No. 2. Edible Fruits and Nuts. Prosea, Bogor, Indonesia. 2. Balerdi, CF, JH Crane, and I Maguire (2005) Mamey sapote growing in the Florida home landscape. University of Florida, IFAS Extension, FC-30 ( <a href="http://edis.ifas.ufl.edu/pdffiles/MG/MG33100.pdf">http://edis.ifas.ufl.edu/pdffiles/MG/MG33100.pdf</a> ).	1. "Seeds lose viability quickly and must be planted soon after removal from the fruit." 2. "its short-lived seeds"; "Seeds lose viability within 7 to 14 days and there is no good method for storing seeds."

8.03		
8.04		
8.05		