

**Family:** *Malvaceae*

**Taxon:** *Thespesia grandiflora*

**Synonym:** *Montezuma grandiflora* DC.  
*Maga grandiflora* (DC.) Urban  
*Montezuma speciosissima* DC.

**Common Name:** Flor de Maga  
maga

<b>Questionnaire :</b>	current 20090513	<b>Assessor:</b>	Chuck Chimera	<b>Designation:</b> L(Hawai'i)
<b>Status:</b>	Assessor Approved	<b>Data Entry Person:</b>	Chuck Chimera	<b>WRA Score</b> -4
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	n
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0	y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs		y=1, n=0	n
402	Allelopathic		y=1, n=0	n
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	
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	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0	n

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	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	
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	>3
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	n
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	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	n
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: L(Hawai'i)

WRA Score -4

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**Supporting Data:**

101	2010. WRA Specialist. Personal Communication.	No evidence that <i>Thespesia grandiflora</i> is highly domesticated
102	2010. WRA Specialist. Personal Communication.	NA
103	2010. WRA Specialist. Personal Communication.	NA
201	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"a small to medium-sized tree with a straight stem that is endemic to Puerto Rico" [Species suited to tropical or subtropical climate(s)]
202	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"endemic to Puerto Rico" [native range well known]
203	2010. Dave's Garden. PlantFiles: Flor Maga, Maga Tree, Maga, Flor de Maga [ <i>Thespesia grandiflora</i> ]. <a href="http://davesgarden.com/guides/pt/go/104178/">http://davesgarden.com/guides/pt/go/104178/</a>	Hardiness: USDA Zone 11: above 4.5 °C (40 °F)
204	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"endemic to Puerto Rico"
205	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"Maga is planted as an ornamental in Florida, Hawaii, Puerto Rico, and several other locations (Little and Wadsworth 1964; Neal 1965)."
301	1999. Acevedo-Rodriguez, P./Axelrod, F.S.. Annotated Checklist for the Tracheophytes of Ri'o Abajo Forest Reserve, Puerto Rico. Caribbean Journal of Science. 35(3-4): 265-285.	" <i>Thespesia grandiflora</i> DC.; endemic, occasional to common, planted and naturalized." [listed as naturalized in Puerto Rico, where it is an endemic species]
301	2007. Randall, R.P.. Global Compendium of Weeds - <i>Thespesia grandiflora</i> . <a href="http://www.hear.org/gcw/species/thespesia_grandiflora/">http://www.hear.org/gcw/species/thespesia_grandiflora/</a>	Listed as naturalized in Puerto Rico [where <i>Thespesia grandiflora</i> is native; otherwise no evidence of naturalization outside native range]
302	2007. Randall, R.P.. Global Compendium of Weeds - <i>Thespesia grandiflora</i> . <a href="http://www.hear.org/gcw/species/thespesia_grandiflora/">http://www.hear.org/gcw/species/thespesia_grandiflora/</a>	No evidence as a Garden, amenity or disturbance weed
303	2007. Randall, R.P.. Global Compendium of Weeds - <i>Thespesia grandiflora</i> . <a href="http://www.hear.org/gcw/species/thespesia_grandiflora/">http://www.hear.org/gcw/species/thespesia_grandiflora/</a>	No evidence as a weed of agriculture, forestry or horticulture.
304	2007. Randall, R.P.. Global Compendium of Weeds - <i>Thespesia grandiflora</i> . <a href="http://www.hear.org/gcw/species/thespesia_grandiflora/">http://www.hear.org/gcw/species/thespesia_grandiflora/</a>	No evidence as an environmental weed
305	2006. Friday, J. B./Okano, D.. Species Profiles for Pacific Island Agroforestry (ver. 2.1) - <i>Thespesia populnea</i> (milo). <a href="http://www.traditionaltree.org">www.traditionaltree.org</a>	"Milo has the potential to become an invasive weed and should not be introduced into areas where it is not already present. The tree has naturalized in Florida and the Caribbean, where it was introduced as an ornamental. In Florida it is considered a problem weed both in natural areas and in cultivated landscapes. The tree seeds prolifically, and seeds are easily dispersed by ocean currents. It grows in dense thickets that tend to exclude other plants but do not produce trees of a size that would make harvesting attractive. The tree has taken over beaches used by nesting sea turtles in the West Indies."
401	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"Tree to 15 m. tall; young branches stout, lepidote-stellate-pubescent; stipules linear subulate, 3-4 mm. long, deciduous; leaves orbicular-ovate, 5-25 cm. long (4) 8-19 cm. broad, apex acuminate or acute, base cordate rarely subtruneate, the lobes often overlapping, margin entire to undulate, sparsely lepidote-stellate on both sides when young, especially at the base of the blade; palmately 5-7-nerved; petioles 3-18 cm. long, lepidote-stellate; peduncles 6-25 cm. long, lepidote-stellate," [no spines, thorns or burrs]

402	2010. Sagebud. Maga ( <i>Thespesia Grandiflora</i> ). <a href="http://www.sagebud.com/maga-thespesia-grandiflora/">http://www.sagebud.com/maga-thespesia-grandiflora/</a>	Allelopath: No
403	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"Tree to 15 m. tall;" [not parasitic]
404	2010. WRA Specialist. Personal Communication.	Unknown
405	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	No toxic properties mentioned for species
405	2010. WRA Specialist. Personal Communication.	No evidence of toxicity
406	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	host for important cotton pest ( <i>Pectinsphora gossypiella</i> )
407	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	No evidence of toxicity or allergenic properties
408	2010. WRA Specialist. Personal Communication.	No evidence that <i>T. grandiflora</i> creates a fire hazard in natural ecosystems [unlikely, it is a small tree of open forest]
409	2010. Dave's Garden. PlantFiles: Flor Maga, Maga Tree, Maga, Flor de Maga [ <i>Thespesia grandiflora</i> ]. <a href="http://davesgarden.com/guides/pf/go/104178/">http://davesgarden.com/guides/pf/go/104178/</a>	Sun Exposure: Sun to Partial Shade
409	2010. Sagebud. Maga ( <i>Thespesia Grandiflora</i> ). <a href="http://www.sagebud.com/maga-thespesia-grandiflora/">http://www.sagebud.com/maga-thespesia-grandiflora/</a>	Shade Tolerance: Tolerant
410	2008. Bonner, F.T./Karrfalt, R.P. (eds.). The Woody Plant Seed Manual. USDA FS Agriculture Handbook 727. Government Printing Office, Washington, D.C.	"Maga requires fertile soils and does not tolerate compaction."
410	2010. Sagebud. Maga ( <i>Thespesia Grandiflora</i> ). <a href="http://www.sagebud.com/maga-thespesia-grandiflora/">http://www.sagebud.com/maga-thespesia-grandiflora/</a>	# Adapted to Coarse Textured Soils: Yes # Adapted to Fine Textured Soils: No # Adapted to Medium Textured Soils: Yes
411	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"Tree to 15 m. tall;"
412	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	No evidence of forming dense thickets in native range
501	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	Terrestrial tree
502	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	Malvaceae [not a grass]
503	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	Malvaceae [not a nitrogen fixing woody plant]
504	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"Tree to 15 m. tall;"

601	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	No evidence of substantial reproductive failure in native habitat
602	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted"
603	2010. WRA Specialist. Personal Communication.	Ability to hybridize unknown
604	2005. Sambamurty, A.V.S.S.. Taxonomy of Angiosperms. I. K. International Pvt Ltd, New Delhi, India	"In <i>Thespesia</i> , honey-guides are present at the base of the corolla. Self-pollination is prevented by protrandry." [genus description]
605	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"in flower, truncate at the apex, minutely lepidote- stellate outside, densely long tomentose inside, the hairs usually clustered; petals obliquely triangular-obovate, 7-11 cm. long, 5-7.5 cm. broad, deep rose shading to crimson inside, orange or tan outside, with black dots or lines along the veins in the center of the petal, densely lepidote-stellate to tomentose outside, glabrous inside; staminal column 4.5-7 cm. long, shorter to rarely equaling the petals, column irregularly dentate at the apex, filaments 2-4 mm. long, usually in pairs and arranged in 5 vertical rows; ovary sessile, ovate to conical, glabrous, 5-loculed, ovules about 5 in each locule" [pollinators unknown]
606	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	Propagation by seed [no evidence of reproduction by vegetative fragmentation]
607	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"Open-grown maga are reported to begin flowering when 5 to 10 years old (Francis 1989)"
701	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted" [no evidence of unintentional dispersal, and seeds without any means of external attachment]
702	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"sometimes planted for shade and as an ornamental; endemic; introduced elsewhere as an ornamental."
703	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted" [no evidence that seeds contaminate produce, unlikely as seeds are fairly large]
704	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"capsule ovoid, 3-5 cm. diameter, apparently fleshy when fresh becoming woody when dry, walls thick; seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted." [no adaptations for wind dispersal]
705	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"capsule ovoid, 3-5 cm. diameter, apparently fleshy when fresh becoming woody when dry, walls thick; seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted...The plants are native in Puerto Rico growing in woods and on hillsides away from the coast." [distribution suggests seeds are not dispersed by water]
705	2009. van der Valk, A. (ed.). Forest Ecology: Recent Advances in Plant Ecology. Springer, New York, NY	"Appendix A... <i>Thespesia grandiflora</i> ...Mode of dispersal = gravity"
706	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"Maga depends upon fruit bats and birds for dispersal"
706	2010. Abelleira Martinez, O.J.. Invasion by native tree species prevents biotic homogenization in novel forests of Puerto Rico. Plant Ecology. 211: 49-64.	"Seeds and juvenile trees of <i>A. inermis</i> , <i>Calophyllum calaba</i> , <i>Meliococcus bijugatus</i> , <i>Terminalia catappa</i> , <i>Thespesia grandiflora</i> , and <i>Syzygium jambos</i> were usually found in clumps on the ground and far from parent trees. These were probably dropped by roosting common fruit bats ( <i>Artibeus jamaicensis</i> ) which disperse some of these species locally (Rodríguez-Durán 2005)."

707	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"capsule ovoid, 3-5 cm. diameter, apparently fleshy when fresh becoming woody when dry, walls thick; seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted." [fruits and seeds without any means of external attachment, no evidence of external animal dispersal]
708	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"Maga depends upon fruit bats and birds for dispersal...Because bats and birds drop the seeds as they consume the fruits, seeds can be collected from the ground under bearing trees or beneath nearby perch trees." [adapted for bird and bat dispersal, so some seeds probably survive passage through gut]
801	1949. Howard, R.A.. <i>Atkinsia</i> Gen. Nov., <i>Thespesia</i> , and Related West Indian Genera of the Malvaceae. Bulletin of the Torrey Botanical Club. 76(2): 89-100.	"5-loculed, ovules about 5 in each locule; capsule ovoid, 3-5 cm. diameter, apparently fleshy when fresh becoming woody when dry, walls thick; seeds 3-5 in each locule, obovoid, 1.2-1.3 cm. long, 7-9 mm. broad, glabrous, black, cotyledons black dotted." [fairly large fruits & seeds]
802	1989. Francis, J.K.. <i>Thespesia grandiflora</i> (DC.) Urban, maga.. Res. Note SO-ITF-SM-21.: .USDA Forest Service, Southern Forest Experiment Station., New Orleans, LA	"The seeds of maga are highly recalcitrant. The folded cotyledons (figure 2) are active and turn green within the seed as germination begins. The seeds begin germinating 5 to 7 days after the fruit ripens (Francis 1989). Many of the seeds picked up from the ground, either loose or within rotting fruits, already have the radicle exposed. It is best to place moist paper towels or other moistened material in the collection container and sow the seeds as soon as possible. Viability of maga seeds can be extended to nearly 4 months by drying to 62.5% moisture and storing at 2 to 4 EC (Marrero 1942)."
803	2010. WRA Specialist. Personal Communication.	Unknown [no information on control with herbicides]
804	2010. Sagebud. Maga ( <i>Thespesia Grandiflora</i> ). <a href="http://www.sagebud.com/maga-thespesia-grandiflora/">http://www.sagebud.com/maga-thespesia-grandiflora/</a>	Coppice Potential: No; Resprout Ability: No
805	2010. WRA Specialist. Personal Communication.	Unknown [no information found on natural enemies]