

Family: *Acanthaceae*

Taxon: *Justicia spicigera*

Synonym: *Jacobinia spicigera* (Schlechtendal) L.H. Bail
Justicia ghiesbreghtiana (Misapplied)

Common Name: Mexican indigo
 Yaxan
 Mohintli
 Mexican honeysuckle
 Firecracker bush

Questionnaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** H(HPWRA)
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 8**

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)	y
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	
405	Toxic to animals	y=1, n=0	
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	
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	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	
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	
605	Requires specialist pollinators	y=-1, n=0	y
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
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	
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	
705	Propagules water dispersed	y=1, n=-1	
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	
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	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score 8

Supporting Data:

101	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Species suited to tropical or subtropical climate(s) 2-High] "Native from Mexico southward to Colombia..."
202	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Quality of climate match data? 2-High] "Native from Mexico southward to Colombia..."
203	2012. Dave's Gardern. PlantFiles: Firecracker Plant, Mexican Honeysuckle, Orange Plume Flower - <i>Justicia spicigera</i> . http://davesgarden.com/guides/pf/go/1335/	[Broad climate suitability (environmental versatility)? Yes] "Hardiness: USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
203	2012. My Gardener Says.... Mexican Honeysuckle–Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spicigera/	[Broad climate suitability (environmental versatility)? Yes] "Most years, if there's a deep enough freeze, this fabulous herbaceous perennial dies to the ground and returns from its roots once temperatures warm. Then in mid to late summer, it begins its bloom cycle. It will bloom, sporadically, until it succumbs to the next significant freeze. During this mild winter (in Austin) in which there was no hard freeze (mid-twenties or lower), these gorgeous plants didn't die to their roots. Mine suffered slight freeze damage on some of the foliage, but that was all."
204	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native from Mexico southward to Colombia..."
205	2004. Daniel, T.F.. Acanthaceae of Sonora: taxonomy and phytogeography. Proceedings of the California Academy of Sciences. 55: 690-805.	[Does the species have a history of repeated introductions outside its natural range? Yes] "Three species of Acanthaceae that have been collected in Sonora are likely not native to the state: <i>Justicia spicigera</i> , <i>Odontonema cuspidatum</i> , and <i>Ruellia malacosperma</i> . All of these are widely cultivated, have been collected in gardens in the state, and are elsewhere known to either escape from or persist after cultivation."
205	2012. My Gardener Says.... Mexican Honeysuckle–Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spicigera/	[Does the species have a history of repeated introductions outside its natural range? Yes] "Native to Mexico and all the way south to Columbia, it's naturalized in parts of South Texas."
205	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai'i & Hawai'i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/supplement.htm	[Does the species have a history of repeated introductions outside its natural range? Yes] "newly naturalized (O'ahu, Moloka'i)"
301	2002. Staples, G.W./Imada, C.T./Herbst, D.R.. New Hawaiian plant records for 2000. Bishop Museum Occasional Papers. 68: 3–18.	[Naturalized beyond native range? Yes] "The following specimens document this Central American species as naturalized in the Hawaiian Islands. It was formerly known only in cultivation as an ornamental plant. It is likely that it has escaped on other islands as well. Mexican indigo is a shrub to 6' tall with opposite leaves, the blades oblong lanceolate to ovate, up to 7" long; inflorescences are few-flowered, one-sided racemes composed of 1.5" long, orange or red, 2-lipped flowers, the lower lip recurved. Material examined. O'AHU: Honolulu, lower Round Top in disturbed dry forest along roadside above stream, near 2010 Round Top Drive, elev. ca. 61 m, 25 Mar 1998, G. Ray & E. Gibney 100. MOLOKA'I: Hälawa Valley, naturalized in areas along road, elev. ca. 100 ft, 9 Jul 1983, K. Nagata 2671."
301	2012. My Gardener Says.... Mexican Honeysuckle–Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spicigera/	[Naturalized beyond native range? Yes] "Native to Mexico and all the way south to Columbia, it's naturalized in parts of South Texas."

301	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai'i & Hawai'i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/supplement.htm	[Naturalized beyond native range? Yes] "newly naturalized (O'ahu, Moloka'i)"
302	2007. Randall, R.P.. Global Compendium of Weeds - <i>Justicia spicigera</i> [Online Database]. http://www.hear.org/gcw/species/justicia_spicigera/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - <i>Justicia spicigera</i> [Online Database]. http://www.hear.org/gcw/species/justicia_spicigera/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - <i>Justicia spicigera</i> [Online Database]. http://www.hear.org/gcw/species/justicia_spicigera/	[Environmental weed? No] No evidence
305	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Congeneric weed? Yes] "Most, if not all, alien plant species of the family Acanthaceae (acanthus) found in tropical islands were intentionally introduced as garden ornamentals, because of their showy coloured flowers, bracts or leaves. Some have 'escaped' gardens and have naturalized in human disturbed areas as weeds, adventives, or ruderal species. A few species have successfully invaded secondary and relatively undisturbed native wet forests." ... "We recorded eight major invasive species: the erect herbs or shrubs <i>Justicia carnea</i> , <i>Odontonema strictum</i> , <i>Phlogacanthus turgidus</i> , <i>Sanchezia speciosa</i> and <i>Strobilanthes hamiltonianus</i> form dense monospecific thickets in the understorey of wet forests;" ... "However, as shown on 'The Global Compendium of Weeds' website (www.hear.org/gcw), the Acanthaceae can be recognized as a weedy family with 218 reported taxa of which 190 are legitimate names belonging to 51 different genera, the largest being <i>Justicia</i> with 21 weedy taxa"
401	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Produces spines, thorns or burrs? No] "Shrubs to 6' tall; stem 4-angles. Lvses petiolate; blades oblong-lanceolate to ovate, to 7" long."
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Parasitic? No] "Shrubs to 6' tall;" [Acanthaceae]
404	2004. Crescent Bloom. <i>Justicia spicigera</i> . http://www.crescentbloom.com/plants/Specimen/JU/Justicia%20spicigera.htm	[Unpalatable to grazing animals? Possibly No] "Deer resistant: no "
404	2012. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2004. Crescent Bloom. <i>Justicia spicigera</i> . http://www.crescentbloom.com/plants/Specimen/JU/Justicia%20spicigera.htm	[Toxic to animals? No evidence] "Livestock poison: no "
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? Unknown] No species of <i>Justicia</i> listed as toxic
406	2011. Martin, C.A.. <i>Justicia spicigera</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/justiciaspicigera.html	[Host for recognized pests and pathogens? No] "Disease and pests: White flies, root rot,and more white flies." [Common pests of many plants]
406	2012. Top Tropicals. <i>Justicia spicigera</i> . Top Tropicals Botanical Garden, http://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=JUSTICIA_SPICIGERA	[Host for recognized pests and pathogens? No] "...has few insect pests..."
407	2004. Daniel, T.F.. Acanthaceae of Sonora: taxonomy and phylogeography. Proceedings of the California Academy of Sciences. 55: 690-805.	[Causes allergies or is otherwise toxic to humans? Possibly No] "Use. Leaves are boiled with cinnamon to yield a clear, red tea that is taken for stomach pain."

407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? Possibly No] No species of <i>Justicia</i> listed as toxic
407	2009. Sepulveda-Jimenez, G./Reyna-Aquino, C./Chaires-Martinez, L./Bermudez-Torres, K./Rodriguez-Monroy, M.. Antioxidant Activity and Content of Phenolic Compounds and Flavonoids from <i>Justicia spicigera</i> . Journal of Biological Sciences. 9(6): 629-632.	[Causes allergies or is otherwise toxic to humans? Possibly at incorrect dosage] "This is the first study describing the antioxidant activity from <i>J. spicigera</i> . Phenolic compounds and flavonoids contribute to this activity. The results suggest that <i>J. spicigera</i> is a source of antioxidant and support its use as an anti-inflammatory for the treatment of uterine cancer and against various free radical related disorders."
407	2009. Vega-Avila, E./Espejo-Serna, A./Alarcón-Aguilar, F./Velasco-Lezama, R.. Cytotoxic Activity of Four Mexican Medicinal Plants. Proc.West. Pharmacol. Soc.. 52: 78-82.	[Causes allergies or is otherwise toxic to humans? No evidence, but medicinal properties may be toxic at certain dosage]"Ethanolic extract from <i>J. spicigera</i> presented the best cytotoxic effect. The cytotoxic activity of <i>J. spicigera</i> correlated with one of the popular uses, the treatment of cancer." ... " <i>J. spicigera</i> is a shrub which is native to Mexico [9], and it is used since prehispanic time to treat scabies as documented by Francisco Hernández. [10]. This plant is still used to treat various illnesses"
408	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Creates a fire hazard in natural ecosystems? No] "Found along stream banks in thickets and forests of Mexico and Central America..." [No evidence of increased fire risk in natural ecosystems]
408	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Creates a fire hazard in natural ecosystems? No] No evidence that naturalized <i>Justicia</i> species increase fire risks
409	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is a shade tolerant plant at some stage of its life cycle? Yes] "In Hawaii, Mexican-indigo is occasionally used as a hedge or screening plant or in mixed shrub borders, preferably in a shady location on fertile, well-drained soil; this species is not salt tolerant."
409	2007. Miller, G.O.. Landscaping with Native Plants of the Southwest. Voyageur Press, St. Paul, MN	[Is a shade tolerant plant at some stage of its life cycle? Yes] "The widely used Mexican honeysuckle, <i>Justicia spicigera</i> , is shade tolerant and has orange flower."
409	2011. Martin, C.A.. <i>Justicia spicigera</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/justiciaspicigera.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Light: Full sun to partial shade, no full shade."
409	2012. Top Tropicals. <i>Justicia spicigera</i> . Top Tropicals Botanical Garden, http://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=JUSTICIA_SPICIGERA	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Most shade tolerant of the other species."
410	1998. Riffle, R.L.. The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR	[Tolerates a wide range of soil conditions? Yes] "...is not fussy about soil, and is fairly drought tolerant."
410	2012. My Gardener Says.... Mexican Honeysuckle–Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spicigera/	[Tolerates a wide range of soil conditions? Yes] "It's not too fussy about soil type and it does well in a dappled shade situation."
410	2012. Top Tropicals. <i>Justicia spicigera</i> . Top Tropicals Botanical Garden, http://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=JUSTICIA_SPICIGERA	[Tolerates a wide range of soil conditions? Yes] "It is adaptable to various soils, requires little fertilization, withstands extreme heat,..."
411	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Climbing or smothering growth habit? No] "Shrubs to 6' tall;" [Acanthaceae]
412	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Forms dense thickets? Possibly] "Found along stream banks in thickets and forests of Mexico and Central America, this plant is often cultivated for use as laundry bluing and in some areas as a dye." [Unclear whether plant forms thickets, or is a component of thicket vegetation]
501	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Aquatic? No] "Shrubs to 6' tall;" [Acanthaceae]

502	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Grass? No] "Shrubs to 6' tall;" [Acanthaceae]
503	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Nitrogen fixing woody plant? No] "Shrubs to 6' tall;" [Acanthaceae]
504	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Shrubs to 6' tall; stem 4-angles. Lvs petiolate; blades oblong-lanceolate to ovate, to 7" long."
601	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Produces viable seed? Possibly No in Costa Rica] "Only one collection of this plant, Skutch 4809 (F, MO, NY), has been made in Costa Rica, in the Rio General basin in March. It had abundant flowers, but no fruits."
602	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Produces viable seed? Yes, but rare] "Frt rare in Hawai'i."
602	2012. Dave's Gardern. PlantFiles: Firecracker Plant, Mexican Honeysuckle, Orange Plume Flower - <i>Justicia spicigera</i> . http://davesgarden.com/guides/pf/go/1335/	[Produces viable seed? Yes] "Bag seedheads to capture ripening seed; Allow pods to dry on plant; break open to collect seeds; Properly cleaned, seed can be successfully stored"
603	2012. Kartuz Greenhouses. <i>Justicia spicigera</i> 'Sidicaro'. http://www.kartuz.com/p/69144/Justicia+spicigera+Sidicaro.html	[Hybridizes naturally? Unknown] " <i>Justicia spicigera</i> 'Sidicaro' ... "With an abundance of flaming bright orange flowers, this unusual shrimp plant blooms continuously from early spring through fall. A fast growing upright tropical growing to 30 inches in height in ground or in container, 5 to 6 feet in the tropics. Full or partial sun. Unknown origin. It's thought to be a hybrid of <i>Justicia spicigera</i> . Hardiness is also unknown. The common <i>Justicia spicigera</i> species is somewhat hardy but this cultivar looks to be more tropical in nature."
604	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Self-compatible or apomictic? Unknown for <i>J. spicigera</i>] " <i>Justicia</i> is more or less self compatible but most species are allogamous, and the major pollinators being large bees or hummingbirds;"
605	2000. Manktelow, M.. The filament curtain: a structure important to systematics and pollination biology in the Acanthaceae. BofunicalJournal of the Linnean Society. 133: 129-160.	[Requires specialist pollinators? Yes] "The filament curtain is a complex structure found in Acanthaceae inside the corolla. It usually divides the corolla into two compartments, enclosing the main nectar bulk behind two adjacent filament bands." ... "The evolutionary origin of the filament curtain is probably connected with its functions in pollination biology, which are proposed to be those of restricted nectar access, prevention of nectar evaporation, lever arm function facilitating dorsal pollen deposition, and stabilizing of posticcous position of anthers and style." ... "Similar geniculate corolla lobe traces were also found in several genera in tribe Justiceae, <i>Justicia spicigera</i> Schltr.,"
605	2002. Staples, G.W./Imada, C.T./Herbst, D.R.. New Hawaiian plant records for 2000. Bishop Museum Occasional Papers. 68: 3-18.	[Requires specialist pollinators? Yes] "inflorescences are few-flowered, one-sided racemes composed of 1.5" long, orange or red, 2-lipped flowers, the lower lip recurved." [Tubular structure adapted for hummingbirds]
605	2011. Martin, C.A.. <i>Justicia spicigera</i> . Arizona State University, http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/justiciaspicigera.html	[Requires specialist pollinators? Yes] "Hummingbirds frequent firecracker plant intensely when in flower. Firecracker plant is an oasis or mesic shrub substitute for chuparosa (<i>J. californica</i>) when hummingbirds are wanted in the landscape."
605	2012. My Gardener Says.... Mexican Honeysuckle-Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spigera/	[Requires specialist pollinators? Yes] "It's reportedly a hummingbird plant and that makes sense given the shape and color of the bloom. I've never seen any hummingbirds feeding at the blooms, though. And it may well be that the pollinators native to this plant aren't normally in this geographic area."
606	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? Yes] "Drooping branches will take root at nodes producing large clumps."
607	2012. My Gardener Says.... Mexican Honeysuckle-Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spigera/	[Minimum generative time (years)? 1-2] "Be patient if you've planted Mexican Honeysuckle recently. It can take a year or so before it demonstrates what a great addition to the garden it is. Just give it a little room and let it go."

701	2002. Staples, G.W./Imada, C.T./Herbst, D.R.. New Hawaiian plant records for 2000. Bishop Museum Occasional Papers. 68: 3–18.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Potentially] "The following specimens document this Central American species as naturalized in the Hawaiian Islands. It was formerly known only in cultivation as an ornamental plant. It is likely that it has escaped on other islands as well. Mexican indigo is a shrub to 6' tall with opposite leaves, the blades oblong lanceolate to ovate, up to 7" long; inflorescences are few flowered, one-sided racemes composed of 1.5" long, orange or red, 2-lipped flowers, the lower lip recurved. Material examined. O'AHU: Honolulu, lower Round Top in disturbed dry forest along roadside above stream, near 2010 Round Top Drive, elev. ca. 61 m, 25 Mar 1998, G. Ray & E. Gibney 100. MOLOKA'I: Hālawā Valley, naturalized in areas along road, elev. ca. 100 ft, 9 Jul 1983, K. Nagata 2671." [Distribution along roadside suggests propagules, either seeds or vegetative material, may be inadvertently dispersed along well trafficked corridors]
702	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Propagules dispersed intentionally by people? Yes] "Justicia spicigera is recognized by its frequently darkened, ovate leaves, axillary spicate panicles with secund flowers, and orange corollas (3.5 to 4.4 cm long) which are fusiform when unopened. It is easily confused with J. tinctoria, which is also cultivated for the same purposes, but can be distinguished from it by its fusiform corollas (vs. narrowly funnelliform) and its larger, ovate leaves (6.5 to 1.7 cm long vs. elliptic leaves 4.5 to 14 cm long)."
702	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Propagules dispersed intentionally by people? Yes] "In Hawaii, Mexican-indigo is occasionally used as a hedge or screening plant or in mixed shrub borders, preferably in a shady location on fertile, well-drained soil; this species is not salt tolerant. The flowers are sometimes used in leis."
703	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Propagules likely to disperse as a produce contaminant? No] "Frt rare in Hawai'i." [Unlikely, given limited seed production in Hawaiian Islands]
704	1994. Zomlefer, W.B.. Guide to Flowering Plant Families. The University of North Carolina Press, Chapel Hill & London	[Propagules adapted to wind dispersal? Possibly for short distances] "Most genera of the Acanthaceae are characterized by a bilocular capsule ... that splits elastically, leaving a persistent central column." [Family Description]
705	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Propagules water dispersed? Possibly] "Found along stream banks in thickets and forests of Mexico and Central America..."
706	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Propagules bird dispersed? No] "Fruits a capsule, clavate, 4- seeded." [Not fleshy fruited]
707	2012. WRA Specialist. Personal Communication.	[Propagules dispersed by other animals (externally)? Unlikely] Capsules, and seeds, when produced, lack a means of external attachment but may adhere to mud or fur
708	2012. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown] Capsules and seeds, when produced, are not adapted for consumption and internal dispersal
801	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Prolific seed production (>1000/m ²)? No] "Frt rare in Hawai'i."
802	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] "Frt rare in Hawai'i."
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown]
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information found on herbicide efficacy or chemical control of this species.
804	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Hard pruning is required after blooming to maintain a compact growth form."
804	2012. My Gardener Says.... Mexican Honeysuckle–Spring Show-Off. http://mygardenersays.wordpress.com/category/justicia-spicigera/	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Most years, if there's a deep enough freeze, this fabulous herbaceous perennial dies to the ground and returns from its roots once temperatures warm. Then in mid to late summer, it begins its bloom cycle."

