

Family: *Verbenaceae*

Taxon: *Aloysia citrodora*

Synonym: *Aloysia triphylla* (L'Hér.) Britton
Lippia citrodora Kunth
Lippia triphylla (L'Hér.) Kuntze
Verbena triphylla L'Hér.
Zappania citrodora Lam.

Common Name: lemon verbena
Zitronenstrauch
cidrão
cedrón
verveine citronelle

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score 0
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	y
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	
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	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	n

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	
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	>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	
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	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
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: L		WRA Score 0	

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	2011. WRA Specialist. Personal Communication.	NA
103	2011. 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] "Lemon-verbena is apparently native to Uruguay and northern Argentina and is widely cultivated and naturalized in many warm countries."
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] "Lemon-verbena is apparently native to Uruguay and northern Argentina and is widely cultivated and naturalized in many warm countries."
203	2011. Missouri Botanical Garden. Kemper Center for Home Gardening PlantFinder - <i>Aloysia triphylla</i> . http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=C962	[Broad climate suitability (environmental versatility)? No] "Winter hardy to USDA Zone 8-10 where it is best grown in moist, light, well-drained fertile loams in full sun."
204	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Sparingly spontaneous after cultivation, PR; native to South America, widely cultivated in tropical regions both for the flowers and the aromatic leaves."
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] "Lemon-verbena is apparently native to Uruguay and northern Argentina and is widely cultivated and naturalized in many warm countries."
205	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Does the species have a history of repeated introductions outside its natural range?? Yes] "widely cultivated in tropical regions both for the flowers and the aromatic leaves."
301	1992. Verdcourt, B.. Flora of Tropical East Africa - Verbenaceae. A.A. Balkema, Rotterdam, Netherlands	[Naturalized beyond native range? No in East Africa] " <i>Aloysia triphylla</i> ...The 'sweet-scented or lemon-scented Verbena' has been cultivated in East Africa." [no evidence of naturalization]
301	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Naturalized beyond native range? Yes] "Sparingly spontaneous after cultivation, PR; native to South America, widely cultivated in tropical regions both for the flowers and the aromatic leaves."
301	2010. Arianoutsou, M./Bazos, I./Delipetrou, P./Kokkoris, Y.. The alien flora of Greece: taxonomy, life traits and habitat preferences. Biological Invasions. 12: 3525–3549.	[Naturalized beyond native range? Unknown in Greece] "Table 5 Checklist of alien plant species recorded in Greece" [<i>Aloysia citrodora</i> = U alien of unknown naturalisation status]

301	2010. Marco, A./Lavergne, S./Dutoit, T./Bertaudiere-Montes, V.. From the backyard to the backcountry: how ecological and biological traits explain the escape of garden plants into Mediterranean old fields. <i>Biological Invasions</i> . 12: 761–779.	[Naturalized beyond native range? Not in French Mediterranean] "Abstract To explain current ornamental plant invasions, or predict future ones, it is necessary to determine which factors increase the probability of an alien species becoming invasive. Here, we focused on the early phases of ornamental plant invasion in order to identify which plant features and cultivation practices may favor the escape of ornamental plants from domestic gardens to abandoned agricultural land sites in the Mediterranean Region. We used an original approach which consisted in visiting 120 private gardens in an urbanizing rural area of the French Mediterranean backcountry, and then visited surrounding old fields to determine which planted species had escaped out of the gardens. We built a database of 407 perennial ornamental alien species (most of which were animal dispersed), and determined nineteen features that depicted the strength of species' propagule pressure within gardens, the match between species requirements and local physical environment, and each species' reproductive characteristics. Using standard and phylogenetic logistic regression, we found that ornamental alien plants were more likely to have escaped if they were planted in gardens' margins, if they had a preference for dry soil, were tolerant to high-pH or pH-indifferent, and if they showed a capacity for clonal growth. Focusing only on animal-dispersed plants, we found that alien plants were more likely to have escaped if they were abundant in gardens and showed preference for dry soil. This suggests that gardening practices have a primary impact on the probability of a species to escape from cultivation, along with species pre-adaptation to local soil conditions, and capacity of asexual reproduction. Our results may have important implications for the implementation of management practices and awareness campaigns in order to limit ornamental plants to becoming invasive species in Mediterranean landscapes....Table 5. List of the perennial alien plant species escaped (=1) and not escaped (=0) in abandoned agricultural lands of Lauris village." [Aloysia triphylla = 0, not escaped in the French Mediterranean region]
301	2011. eHow. Is Lemon Verbena Invasive?. http://www.ehow.com/facts_6020378_lemon-verbena-invasive_.html	[Naturalized beyond native range? Yes] "Lemon verbena has become an invasive species in Europe and the Americas. It grows only where the weather is warm and moist, however, so it hasn't become an overwhelming problem."
301	2011. Gardener, M./Guézou, A./Atkinson, R./Buddenhagen, C.. CDF Checklist of Galapagos Introduced Plants. In: Bungartz, F. et al. (eds.). Charles Darwin Foundation Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www .	[Naturalized beyond native range? No in Galapagos]"Aloysia triphylla...Origin: Introduced, Cultivated. Galapagos Distribution: Santa Cruz"
301	2011. Plants for a Future Database. Aloysia triphylla. PFAF, http://www.pfaf.org/user/Plant.aspx?LatinName=Aloysia%20triphylla	[Naturalized beyond native range? Yes but lacking further details] "Locally naturalized in the Mediterranean"
302	2000. Staples, G.W./Herbst, D.R./Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	[Garden/amenity/disturbance weed? Unknown] "Table 2. Annotated checklist of invasive or potentially invasive cultivated plants in Hawai'i with dispersal syndrome" [listed as a potential environmental weed, but there is no evidence in the Hawaiian Islands, to date, that this species has naturalized or become invasive]
302	2010. Gasso, N./Basnou, C./Vila, M.. Predicting plant invaders in the Mediterranean through a weed risk assessment system. <i>Biological Invasions</i> . 12: 463–476.	[Garden/amenity/disturbance weed? Unknown] "Table 4. Species used to test if the Australian weed risk assessment system (WRA) of Pheloung et al. (1999) was suitable to predict (A) 100 invasive (A) and (B) 97 casual species in Spain. The final WRA score is given" [Aloysia citrodora is listed as a casual species, and scores a 7 in the WRA]
302	2011. eHow. Is Lemon Verbena Invasive?. http://www.ehow.com/facts_6020378_lemon-verbena-invasive_.html	[Garden/amenity/disturbance weed? Unknown] "Lemon verbena, or Aloysia triphylla is, indeed, an invasive species in some parts of the world. However, it has not become an overwhelming problem, and is usually only present in gardens as an intended plant and not as a weed." [evidence is inconclusive and anecdotal]
303	2007. Randall, R.P.. Global Compendium of Weeds - Aloysia citrodora [Online Database]. http://www.hear.org/gcw/species/aloyisia_citriodor a/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2000. Staples, G.W./Herbst, D.R./Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	[Environmental weed? No] "Table 2. Annotated checklist of invasive or potentially invasive cultivated plants in Hawai'i with dispersal syndrome" [listed as a potential environmental weed, but there is no evidence in the Hawaiian Islands, to date, that this species has naturalized or become invasive]

305	1995. Cordo, H.A./Deloach, C.J.. Natural Enemies of the Rangeland Weed Whitebrush (<i>Aloysia gratissima</i> : Verbenaceae) in South-America: Potential for Biological Control in the United States. Biological Control.	[Congeneric weed? Yes] "Abstract Whitebrush, <i>Aloysia gratissima</i> (Gill. And Hook.) Troncoso (Verbenaceae), is a weed of rangelands in the southwestern United States. The genus <i>Aloysia</i> probably originated in southern South America, with the center of evolution in Argentina; <i>A. gratissima</i> is also native there. We traveled 81,550 km in Argentina, Paraguay, and Brazil over a 6 year period searching for natural enemies that could be introduced into North America for biological control of <i>A. gratissima</i> and other weeds of rangelands. We found 82 species of insects and four plant pathogens on various species of <i>Aloysia</i> , in addition to the 36 species of insects previously reported from the plant genus. Promising candidates for further research for introduction included a new species of rust fungus, <i>Prospodium tumefaciens</i> Lindquist that produces stem galls, a probable new species of buprestid stem-boring beetle in the tribe Agrilini, a large crown-boring cerambycid beetle probably in the genus <i>Calocosmus</i> , a scale in the genus <i>Cerococcus</i> , an oecophorid moth <i>Timocratica</i> sp. that feeds on bark, and a twig girdling cerambycid near the genus <i>Arenicia</i> . Only the rust fungus was abundant enough in South America to cause much damage, but the other species might cause greater damage in North America if their own parasites were eliminated before release."
401	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Produces spines, thorns or burrs? No] "Shrub to 3 m tall, the stem roughish-puberulent above, the branches slender, striate; leaves in whorls or 3 or 4, lanceolate, thin, resinous-dotted beneath, short-petioled, entire or toothed at the middle, glabrous, lemon-scented, 4-7 cm long, acuminate at apex, narrowed at base..."
402	2011. WRA Specialist. Personal Communication.	[Allelopathic? No] Well-studied, widely utilized plant with no evidence of allelopathy.
403	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Parasitic? No] Verbenaceae
404	2004. Crescent Bloom. <i>Aloysia citriodora</i> . http://www.crescentbloom.com/Plants/Specimen/AI/Aloysia%20citriodora.htm	[Unpalatable to grazing animals? Unknown] "Deer resistant: no" [Suggests plant is palatable to deer]
404	2008. Plants for Use. Verbenaceae - <i>Aloysia</i> . http://plantsforuse.com/index.php?page=1&id=3041	[Unpalatable to grazing animals? Unknown] " <i>Aloysia citriodora</i> ...Fresh lvs. are most prized for herb tea. Also as a garnish, to flavor cold drinks, fruit cups, salads, jellies, desserts. Verbena oil formerly distilled from the lvs. for use as perfumes and to flavor soft drinks & liqueurs. Expensive, now largely replaced by lemongrass... <i>Aloysia gratissima</i> ...Sheep & goats thrived on a Whitebrush diet for 3 months or more. A calf became emaciated in 3 months, an ass became emaciated & died in 3.5 months. Only horses showed nervous symptoms as well as emaciation. In a month and a half, ataxia, weakness, paralysis, prostration; death a week after onset of nervous symptoms. Various changes on post mortem. Poisonous principle unknown, but present in water extracts" [related species palatable, but possibly toxic, to animals. Palatability of <i>A. citriodora</i> to animals unknown]
405	2004. Crescent Bloom. <i>Aloysia citriodora</i> . http://www.crescentbloom.com/Plants/Specimen/AI/Aloysia%20citriodora.htm	[Toxic to animals? No] "Internal poison: no, Dermatologic poison: no, Livestock poison: no "
405	2008. Plants for Use. Verbenaceae - <i>Aloysia</i> . http://plantsforuse.com/index.php?page=1&id=3041	[Toxic to animals? No] " <i>Aloysia citriodora</i> ... Fresh lvs. are most prized for herb tea. Also as a garnish, to flavor cold drinks, fruit cups, salads, jellies, desserts. Verbena oil formerly distilled from the lvs. for use as perfumes and to flavor soft drinks & liqueurs. Expensive, now largely replaced by lemongrass" [No evidence of toxicity to humans, or animals]
405	2011. eHow. Is Lemon Verbena Toxic for Horses?. http://www.ehow.com/facts_5783720_lemon-verbena-toxic-horses_.html	[Toxic to animals? No] "Lemon verbena is grown for its hardy nature and strong citrus smell. A popular herb for flavorings and medicinal uses, this plant has a variety of uses for both humans and horses. Lemon verbena is completely non-toxic to horses."
406	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	[Host for recognized pests and pathogens? No] "It is susceptible to several fungal infections, and its leaves are eaten by caterpillars."
406	2011. Missouri Botanical Garden. Kemper Center for Home Gardening PlantFinder - <i>Aloysia triphylla</i> . http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=C962	[Host for recognized pests and pathogens? No] "No serious insect or disease problems. Aphids, whiteflies, mealy bugs and spider mites may appear."

406	2011. Shoot Gardening. <i>Aloysia triphylla</i> (Lemon verbena). http://www.shootgardening.co.uk/plant/aloysia-triphylla	[Host for recognized pests and pathogens? No] "Pests: Generally pest free; Diseases: Generally disease free"
407	2011. Plants for a Future Database. <i>Aloysia triphylla</i> . PFAF, http://www.pfaf.org/user/Plant.aspx?LatinName=Aloysia%20triphylla	[Causes allergies or is otherwise toxic to humans? No] "The essential oil from the plant might sensitise the skin to sunlight...Leaves - occasionally cooked as a spinach[177] but more commonly used as a flavouring in salads, fruit salads etc [14, 21, 104, 183]. A delicious lemon-like flavour, it is adored by most people who try it[K]. A delicious and refreshing tea is made from the leaves[14, 21, 103, 183]. The dried leaves will retain their lemon aroma for many years[4]." [no evidence from regular contact with plant]
408	1992. Verdcourt, B.. Flora of Tropical East Africa - Verbenaceae. A.A. Balkema, Rotterdam, Netherlands	[Creates a fire hazard in natural ecosystems? No] No evidence
408	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Creates a fire hazard in natural ecosystems? No] No evidence
408	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	[Creates a fire hazard in natural ecosystems? No] No evidence
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? No] "Requirements include full sun and a well-drained, loamy soil with water as needed to keep the soil moist but not soggy."
409	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Is a shade tolerant plant at some stage of its life cycle? No] "Lemon verbena prefers a near-neutral garden loam and full sun if grown outside..."
409	2011. Dave's Garden. PlantFiles: Lemon Verbena, Verveine Odorante - <i>Aloysia triphylla</i> . http://davesgarden.com/guides/pf/go/279/	[Is a shade tolerant plant at some stage of its life cycle? No] "Sun Exposure: Full Sun"
410	2004. Hanson, B.. Designing an herb garden. Brooklyn Botanic Garden, Brooklyn, NY	[Tolerates a wide range of soil conditions? No] "Lemon verbena requires full sun and a porous, loamy soil."
410	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Tolerates a wide range of soil conditions? No] "Lemon verbena prefers a near-neutral garden loam and full sun if grown outside..."
410	2011. Dave's Garden. PlantFiles: Lemon Verbena, Verveine Odorante - <i>Aloysia triphylla</i> . http://davesgarden.com/guides/pf/go/279/	[Tolerates a wide range of soil conditions? No] "Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral) 7.6 to 7.8 (mildly alkaline)" [tolerates a narrow range of soil pH]
410	2011. Learn 2 Grow. Plant Search - <i>Aloysia triphylla</i> . http://www.learn2grow.com/plants/aloysia-triphylla/	[[Tolerates a wide range of soil conditions? Possibly] "Lemon verbena grows best on well-drained, slightly poor alkaline soil but tolerates a range of average soils."
411	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Climbing or smothering growth habit? No] "Shrub to 3 m tall..."
412	1992. Verdcourt, B.. Flora of Tropical East Africa - Verbenaceae. A.A. Balkema, Rotterdam, Netherlands	[Forms dense thickets? No evidence]
412	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Forms dense thickets? No evidence]
412	1995. Cordo, H.A./Deloach, C.J.. Natural Enemies of the Rangeland Weed Whitebrush (<i>Aloysia gratissima</i> : Verbenaceae) in South-America: Potential for Biological Control in the United States. Biological Control.	[Forms dense thickets? No evidence] "We have seen <i>A. wrightii</i> growing in dense stands on mountain slopes in Mexico but only in scattered stands in the United States...In addition, two South America species, <i>Aloysia triphylla</i> ...and <i>Aloysia virgata</i> ...are occasionally cultivated in the United States, Mexico, and other countries for their aromatic flowers and attractive foliage..." [No evidence that <i>A. citrodora</i> (syn. <i>A. triphylla</i>) forms dense thickets]

501	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Aquatic? No] "Shrub to 3 m tall..."
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] Verbenaceae
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] Verbenaceae
504	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Shrub to 3 m tall, the stem roughish-puberulent above, the branches slender, striate; leaves in whorls or 3 or 4, lanceolate, thin, resinous-dotted beneath, short-petioled, entire or toothed at the middle, glabrous, lemon-scented, 4-7 cm long, acuminate at apex, narrowed at base..."
601	2011. WRA Specialist. Personal Communication.	[Evidence of substantial reproductive failure in native habitat? No] No evidence
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] "Lemon-verbena may be propagated by woody cuttings or from seed..."
602	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Produces viable seed? Yes] "Lemon verbena is best propagated by cuttings from new growth, although it may also be grown from layers or seeds (in cooler climates, seeds do not always fully ripen)...Fruits/seeds: The fruit is dry, becoming two separate nutlets."
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2003. Morales, C.L./Galetto, L.. Influence of Compatibility System and Life Form on Plant Reproductive Success. Plant Biology. 5(5): 567-573.	[Self-compatible or apomictic? Unknown] "Table 1. Breeding system and natural fruit set of a sample of 32 species growing in the Chaco Serrano forests..." [related species, <i>Aloysia gratissima</i> , listed as self-compatible. Unknown for <i>A. citriodora</i>]
604	2011. Learn 2 Grow. Plant Search - <i>Aloysia triphylla</i> . http://www.learn2grow.com/plants/aloyisia-triphylla/	[Self-compatible or apomictic? Unknown] "Self-Sowing: No"
605	2009. Pawelek, J.C./Frankie, G.W./Thorp, R.W./Przybylski, M.. Modification of a Community Garden to Attract Native Bee Pollinators in Urban San Luis Obispo, California. Cities and the Environment. 2(1): 1-21. http://escholarship.bc.edu/cate/vol2/iss1/7 .	[Requires specialist pollinators? No] "Gardens have become increasingly important places for growing nutritional food, for conserving biodiversity, for biological and ecological research and education, and for community gathering. Gardens can also be designed with the goal of attracting specific wildlife, like birds and butterflies, but pollinators, like bees, can also be drawn to specially planned and modified gardens. A community garden in San Luis Obispo, California provided the setting for modification with the goal of attracting native bee pollinators by planting known bee attractive plants. The local gardeners participated in a survey questionnaire and focused interviews to provide their input and interest in such a project. Presentations on our work with native bees in urban environments and gardening to attract bees were also given to interested gardeners. Work of this type also benefited from a lead gardener who managed donated bee plants and kept up momentum of the project. Modification of the garden and monitoring of native bees started in 2007 and continued through the growing season of 2009. Diversity of collected and observed native bees has increased each year since 2007. To date, 40 species in 17 genera of mostly native bees has been recorded from the garden, and this number is expected to increase through time."
605	2011. Plants for a Future Database. <i>Aloysia triphylla</i> . PFAF, http://www.pfaf.org/user/Plant.aspx?LatinName=Aloysia%20triphylla	[Requires specialist pollinators? No] "The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects."
606	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	[Reproduction by vegetative fragmentation? No] "Lemon-verbena may be propagated by woody cuttings or from seed..."

606	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? No] "Lemon verbena is best propagated by cuttings from new growth, although it may also be grown from layers or seeds..." [No evidence]
607	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Minimum generative time (years)? >4 years] "Shrub to 3 m tall..."
607	2011. Shoot Gardening. Aloysia triphylla (Lemon verbena). http://www.shootgardening.co.uk/plant/aloyasia-triphylla	[Minimum generative time (years)? >4 years] "□-10 years to maturity"
701	2000. Staples, G.W./Herbst, D.R/Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	[Propagules likely to be dispersed unintentionally? No] "Table 2. Annotated checklist of invasive or potentially invasive cultivated plants in Hawai'i with dispersal syndrome" [Aloysia citriodora dispersal syndrome U = Unknown, but no evidence of unintentional dispersal or propagation in heavily trafficked areas]
702	1994. Liogier, H.A.. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta, Volume III. Cyrillaceae to Myrtaceae. La Editorial, UPR, San Juan, Puerto Rico	[Propagules dispersed intentionally by people? Yes] "...widely cultivated in tropical regions both for the flowers and the aromatic leaves."
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] "...widely cultivated and naturalized in many warm countries...Lemon-verbena was grown in Hawaii before 1890, when it was first collected by W.T. Brigham. The flowers are sometimes used in leis, and wapine is often mentioned in Hawaiian poetic literature."
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? Unknown] No evidence, but possibility if grown as an herb
704	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Propagules adapted to wind dispersal? No] "Fruits/seeds: The fruit is dry, becoming two separate nutlets." [no apparent adaptations for wind dispersal, although may be dispersed short distances by wind]
705	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Propagules water dispersed? No] "Fruits/seeds: The fruit is dry, becoming two separate nutlets." [No evidence of dispersal by water]
706	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Propagules bird dispersed? No] "Fruits/seeds: The fruit is dry, becoming two separate nutlets." [not fleshy-fruited]
707	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Propagules dispersed by other animals (externally)? No] "Fruits/seeds: The fruit is dry, becoming two separate nutlets." [No evidence, and no means of external attachment]
708	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Propagules survive passage through the gut? Unknown] "Fruits/seeds: The fruit is dry, becoming two separate nutlets." [Seeds unlikely to be ingested]
801	2009. Tucker, A.O./DeBaggio, T.. The encyclopedia of herbs: a comprehensive reference to herbs of flavor and fragrance. Timber Press, Portland, OR	[Prolific seed production (>1000/m2)? Unlikely] "...it may also be grown from layers or seeds (in cooler climates, seeds do not always fully ripen)...Fruits/seeds: The fruit is dry, becoming two separate nutlets." [No evidence that such high seed numbers are produced]
801	2011. Learn 2 Grow. Plant Search - Aloysia triphylla. http://www.learn2grow.com/plants/aloyasia-triphylla/	[Prolific seed production (>1000/m2)? Unlikely] "Self-Sowing" No"
802	2011. WRA Specialist. Personal Communication.	[Evidence that a persistent propagule bank is formed? Unknown]
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on control of this species
804	2004. Hanson, B.. Designing an herb garden. Brooklyn Botanic Garden, Brooklyn, NY	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "...prune judiciously during the growing season. Remove about a third of the total plant, pruning smaller branches back to older growth. Lemon verbena drops its leaves when cold weather arrives." [tolerates pruning & cold]

805 2000. Staples, G.W./Herbst, D.R/Imada, C.T.. [Effective natural enemies present locally? Unknown]
Survey of invasive or potentially invasive
cultivated plants in Hawai'i. Bishop Museum
Occasional Papers. 65: 1-35.
