

Family: *Solanaceae*

Taxon: *Brunfelsia latifolia*

Synonym: *Franciscea latifolia* Pohl (*basionym*)
Brunfelsia bonodora (Vell.) J.F. Macbr.

Common Name: Yesterday, Today and Tomorrow
Kiss Me Quick

Questionnaire : Status:	current 20090513 Assessor Approved	Assessor: Data Entry Person:	Chuck Chimera Chuck Chimera	Designation: L WRA Score -3
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)	n
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	y
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	y
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	
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	
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	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	
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	n
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/m ²)	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	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: L

WRA Score -3

Supporting Data:

101	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii 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	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Species suited to tropical or subtropical climate(s) 2-high] "from tropical America..."
201	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Species suited to tropical or subtropical climate(s) 2-high] "latifolia. Brunfelsia latifolia is a diminutive shrub endemic to the state of Rio de Janeiro in Brazil, in the environs of the city of Rio de Janeiro."
202	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Quality of climate match data? 2-high] "from tropical America..."
203	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Broad climate suitability (environmental versatility)? No] "The South American species of section Franciscea are primarily shrubs or small trees of the understory of humid tropical rain forests; those species that have adapted to other environments are considered more specialized. This group grows primarily in mountainous regions, up to about 2,000 m of altitude. Exceptions are found in several species that appear to be restricted to very low elevations (B. australis, B. imatacana Plowman, B. latifolia, B. macrocarpa)..." [restricted to low elevations]
203	2011. Dave's Gardern. PlantFiles: Yesterday, Today and Tomorrow, Kiss Me Quick - Brunfelsia latifolia. http://davesgarden.com/guides/pf/go/56222/	[Broad climate suitability (environmental versatility)? No] "Hardiness: 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)"
204	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Native or naturalized in regions with tropical or subtropical climates? Yes] "from tropical America..."
205	2011. Dave's Gardern. PlantFiles: Yesterday, Today and Tomorrow, Kiss Me Quick - Brunfelsia latifolia. http://davesgarden.com/guides/pf/go/56222/	[Does the species have a history of repeated introductions outside its natural range? Yes] "This plant has been said to grow in the following regions: Benicia, California Concord, California Greenbrae, California Irvine, California Joshua Tree, California Los Angeles, California Mission Viejo, California Sacramento, California Stanford, California Walnut Creek, California Aripeka, Florida Asbury Lake, Florida Big Coppitt Key, Florida Big Pine Key, Florida Biscayne Park, Florida Black Diamond, Florida Citrus Hills, Florida Dade City, Florida Gulfport, Florida Hollywood, Florida Indian Harbour Beach, Florida Inverness, Florida Jacksonville, Florida Kings Point, Florida Lakewood Park, Florida Largo, Florida Lauderdale-by-the-sea, Florida Masaryktown, Florida Melrose Park, Florida Ocoee, Florida Orange Park, Florida Orangetree, Florida Orlando, Florida Port St Lucie, Florida Sebastian, Florida Tildenville, Florida Vero Beach, Florida Zephyrhills, Florida Ainaloa, Hawaii Haliimaile, Hawaii Belle Chasse, Louisiana Estelle, Louisiana Independence, Louisiana Lafayette, Louisiana Old Jefferson, Louisiana (2 reports) Prairieville, Louisiana Saint Helena Island, South Carolina Atascocita, Texas Brenham, Texas Cameron, Texas Cedar Park, Texas Cut And Shoot, Texas El Lago, Texas Fulton, Texas High Island, Texas Hill Country Village, Texas Houston, Texas (3 reports) Porter Heights, Texas Redwood, Texas Silsbee, Texas"
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
302	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence

305	2007. Randall, R.P.. Global Compendium of Weeds - <i>Brunfelsia calycina</i> [Online Database]. http://www.hear.org/gcw/species/brunfelsia_calycina/	[Congeneric weed? No] <i>Brunfelsia calycina</i> listed as a weed, but no evidence of impacts or control found
305	2007. Randall, R.P.. Global Compendium of Weeds - <i>Brunfelsia nitida</i> [Online Database]. http://www.hear.org/gcw/species/brunfelsia_nitida/	[Congeneric weed? No] <i>Brunfelsia nitida</i> listed as a weed, but no evidence of impacts or control found
305	2007. Randall, R.P.. Global Compendium of Weeds - <i>Brunfelsia pauciflora</i> [Online Database]. http://www.hear.org/gcw/species/brunfelsia_pauciflora/	[Congeneric weed? No] <i>Brunfelsia pauciflora</i> listed as a weed, but no evidence of impacts or control found
401	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Produces spines, thorns or burrs? No] "A spreading, woody, evergreen shrub that grows to about 8 feet in height in a loose crown of irregular branches." [No evidence]
402	2011. WRA Specialist. Personal Communication.	[Allelopathic? No] No evidence of allelopathy mentioned for this popular ornamental
403	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Parasitic? No] Solanaceae [Not known to be parasitic]
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2008. Khan, S.A.. Toxicology Brief: <i>Brunfelsia</i> species: Beautiful but deadly. Veterinary Medicine. http://veterinarymedicine.dvm360.com/vetmed/article/articleDetail.jsp?id=503045&sk=&date=&pageID=2	[Toxic to animals? Yes] "A search of the ASPCA APCC database AnTox for <i>Brunfelsia</i> species exposures from November 2001 to November 2006 revealed 38 cases involving 42 dogs (three cases involved more than one dog). ⁴ No cases were reported in any other animal species. The most commonly involved breeds were Labrador retrievers (n=5) and golden retrievers (n=4). The age range of exposed dogs was from 1 month to 8 years. Weights ranged from 6 to 75 lb (2.7 to 34 kg). Evidence of chewed <i>Brunfelsia</i> species was found in 25 cases, and in six cases, someone observed the dogs' exposure to <i>Brunfelsia</i> species. The quantity of ingested plant was known in four cases: One dog ingested two leaves, and three dogs ingested 15, 20, and 30 seeds, respectively. ⁴ The <i>Brunfelsia</i> species involved in these cases were <i>Brunfelsia calycina</i> var. <i>floribunda</i> (n=19), <i>Brunfelsia australis</i> (n=7), <i>Brunfelsia pauciflora</i> (n=7), <i>Brunfelsia americana</i> (n=2), nonspecific <i>Brunfelsia</i> species (n=2), and <i>Brunfelsia latifolia</i> (n=1). Although most of the reported cases were from California (n=29), there were also cases from Texas (n=4), Oregon (n=3), Connecticut (n=1), and New Jersey (n=1). The gastrointestinal tract and central nervous system (CNS) were most commonly affected. The outcome of 19 dogs is known: Thirteen dogs recovered with supportive care, two dogs died, two dogs developed sequelae (occasional seizure episodes), one dog was euthanized, and one dog had a continuation of clinical signs (lethargy) at follow-up...There are case reports of <i>Brunfelsia</i> species toxicosis in cattle, dogs, rats, and mice. ^{1-3,5-7} Several of these cases were fatal, with nonspecific necropsy findings. Although only a few <i>Brunfelsia</i> species (<i>B. calycina</i> var. <i>floribunda</i> , <i>B. pauciflora</i> , <i>B. australis</i> , <i>B. bonodora</i>) have been implicated in animal poisoning cases, all species and all parts of the plant (flowers, leaves, berries, and seeds) should be considered toxic to animals. Dogs appear to be particularly attracted to the berries and seeds. Four reports of <i>Brunfelsia</i> species toxicosis in dogs have been published—two in Australia ^{5,6} and two in the United States. ^{2,7} "
405	2009. Harrison, M.. Flowering Shrubs and Small Trees for the South. Pineapple Press Inc, Sarasota, FL	[Toxic to animals? Yes] "Like many members of the nightshade family, <i>Brunfelsia</i> contains poisonous substances. The berries are extremely toxic, and all parts of the plant (flowers, leaves, berries and seeds) should be considered toxic to animals. Dogs appear to be particularly attracted to the berries and seeds."

405	2011. Dave's Gardern. PlantFiles: Yesterday, Today and Tomorrow, Kiss Me Quick - Brunfelsia latifolia. http://davesgarden.com/guides/pf/go/56222/	[Toxic to animals? Yes] "On Apr 11, 2008, GPGruver14 from Hayward, CA wrote: A WORD OF WARNING TO GARDENERS WHO ALSO HAVE DOGS. I have never actually grown this plant, but the ASPCA has noted that it is toxic to dogs. To quote their recent article "According to a recently published study by Dr. Safdar Khan, veterinary toxicologist for the ASPCA Animal Poison Control Center (APCC), dogs seem to be particularly attracted to the seeds and berries of the Brunfelsia plant, also known as "morning, noon and night" and "yesterday, today and tomorrow." In fact, canines are most susceptible to poisoning by this gardener's favorite, aptly named for its fragrant flowers that bloom in vivid purple and gradually change to lavender before fading to white. From 2001 to 2006, the APCC treated 38 cases of Brunfelsia poisoning involving 42 dogs. One California hound experienced stiff limbs and excessive drooling after ingesting several seeds from the plant. A terrier puppy from Florida developed life-threatening seizures after consuming another part of the plant. With help from the APCC and the services of a local emergency veterinarian, the puppy eventually made a full recovery. However, three of the cases proved fatal."
406	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Host for recognized pests and pathogens? No] "Insects/Diseases: For scale, apply malathion or summer oil. For thrips, use diazanon or malathion."
407	2011. Dave's Gardern. PlantFiles: Yesterday, Today and Tomorrow, Kiss Me Quick - Brunfelsia latifolia. http://davesgarden.com/guides/pf/go/56222/	[Causes allergies or is otherwise toxic to humans? Yes] "Danger: Seed is poisonous if ingested Parts of plant are poisonous if ingested"
408	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Creates a fire hazard in natural ecosystems? No] No evidence
408	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2011. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems? No] No evidence that plant is a fire hazard
409	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Is a shade tolerant plant at some stage of its life cycle? Yes] "The shade-loving Brunfelsia latifolia, from tropical America, has flowers that are blue-violet when they open, then fade to lavender, and finally to white on succeeding days."
410	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Tolerates a wide range of soil conditions? Unknown] "requires rich, well-drained, well-watered soil."
410	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Tolerates a wide range of soil conditions? Unknown] "A number of species of section Franciscea have become specialized in their ecological requirements. Brunfelsia latifolia grows only on sandy restingas, a maritime formation of low shrubs on the coast of southeastern Brazil."
410	2011. Dave's Gardern. PlantFiles: Yesterday, Today and Tomorrow, Kiss Me Quick - Brunfelsia latifolia. http://davesgarden.com/guides/pf/go/56222/	[Tolerates a wide range of soil conditions? Unknown] "Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
411	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Climbing or smothering growth habit? No] "A spreading, woody, evergreen shrub that grows to about 8 feet in height in a loose crown of irregular branches."
412	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Forms dense thickets? No] "Brunfelsia latifolia is the most diminutive species, often flowering when only 30 cm tall and rarely reaching 1 m in height. " [Diminutive species. No evidence that it forms thickets]
501	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Aquatic? No] "A spreading, woody, evergreen shrub..." [Terrestrial]
502	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Solanaceae

503	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant y=1, n=0? No] Solanaceae
504	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "A spreading, woody, evergreen shrub that grows to about 8 feet in height in a loose crown of irregular branches."
601	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Evidence of substantial reproductive failure in native habitat? Possibly] "Certain species of sections Franciscea and Guianenses are of such local occurrence that they may also be considered endangered. This is particularly true of <i>B. latifolia</i> , which is precariously restricted to the region around the city of Rio de Janeiro, and of <i>B. dwyeri</i> , on the upper slopes of Cerro Jefe in central Panama. Both of these areas are rapidly being developed for housing and farming, respectively. A large portion of Cerro Jefe has already been decimated for building poultry farms. Little is known of the effect of human activities on other South American species because they have not been studied in the field. The danger of their extinction is less serious, however, than for the West Indian species because of the usually wider distribution of the continental species."
602	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Produces viable seed? Yes] "Grown from seeds or cuttings"
603	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Hybridizes naturally? Unknown] " <i>Brunfelsia latifolia</i> is distinguished by its low habit; the rather small, elliptic leaves; and small, pale violet flowers. It seems to be most closely related to <i>B. bonodora</i> , an equally rare, erect-growing shrub of the mountains near Rio de Janeiro. This species has narrower, lanceolate leaves and larger flowers than <i>B. latifolia</i> . Some specimens (Mikan s.n.) are somewhat intermediate between these two species and indicate a close relationship and possibly hybridization. However, this remains to be determined when additional material is available."
604	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Self-compatible or apomictic? No] "...no viable seed was produced from any of the self-pollinated individuals, indicating that these species are self-incompatible."
605	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Requires specialist pollinators? No] "In section Franciscea the flowers are smaller and have a shorter tube with a purple limb and a white eye at the center. They are usually not fragrant and are pollinated by day-flying butterflies from several different families."
606	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Reproduction by vegetative fragmentation? Unknown] "Vegetative reproduction may also occur to a limited extent by the rooting of broken branches on the forest floor. This has been observed in <i>B. chiricaspi</i> " [some species of <i>Brunfelsia</i> can spread vegetatively, but unknown for <i>B. latifolia</i>]
607	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Minimum generative time (years)? Unknown] "A spreading, woody, evergreen shrub...Moderate growth rate..." [Woody shrub. Probably 2 or more years to maturity]
701	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Propagules likely to be dispersed unintentionally? No] "Capsule enclosed by persistent calyx, 11-13 mm long, 8-10 mm in diameter, ovoid, apiculate at apex, smooth, glabrous, dark green, pericarp thin-walled, dry at maturity, crustaceous, sparingly dehiscent. Seeds 10-12, 5-6 mm long, 3 mm in diameter, oblong ellipsoid, angular, dark brown, reticulate-pitted." [No evidence, and no means of external attachment]
702	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Propagules dispersed intentionally by people? Yes] "Having little medicinal or economic value, it is grown primarily for its beauty." [ornamental]
703	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Propagules likely to disperse as a produce contaminant? No] No evidence [Popular ornamental. No reports of produce contamination]
703	1998. Plowman, T.C.. A revision of the South American species of Brunfelsia (Solanaceae). Fieldiana Botany. 39: 1-135.	[Propagules likely to disperse as a produce contaminant? No] No evidence
704	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Propagules adapted to wind dispersal? No] "Small, orange, single, 1/2-inch berries sometimes follow the bloom." [Fleshy-fruited; No adaptations for wind dispersal]

705	1998. Plowman, T.C.. A revision of the South American species of <i>Brunfelsia</i> (Solanaceae). <i>Fieldiana Botany</i> . 39: 1–135.	[Propagules water dispersed? No] "In section <i>Franciscea</i> the fruit is usually a relatively small capsule that is green or brown and has a coriaceous pericarp that becomes thin and brittle on drying. The persistent calyx encloses the fruit, at least in part. These capsules may split open at maturity, but only sparingly. It may be that many species are completely indehiscent and their seeds are released only upon rotting on the forest floor...Capsule enclosed by persistent calyx, 11-13 mm long, 8-10 mm in diameter, ovoid, apiculate at apex, smooth, glabrous, dark green, pericarp thin-walled, dry at maturity, crustaceous, sparingly dehiscent." [No evidence of adaptations for water dispersal]
706	1998. Plowman, T.C.. A revision of the South American species of <i>Brunfelsia</i> (Solanaceae). <i>Fieldiana Botany</i> . 39: 1–135.	[Propagules bird dispersed? Unknown] "In section <i>Franciscea</i> the fruit is usually a relatively small capsule that is green or brown and has a coriaceous pericarp that becomes thin and brittle on drying. The persistent calyx encloses the fruit, at least in part. These capsules may split open at maturity, but only sparingly. It may be that many species are completely indehiscent and their seeds are released only upon rotting on the forest floor...Capsule enclosed by persistent calyx, 11-13 mm long, 8-10 mm in diameter, ovoid, apiculate at apex, smooth, glabrous, dark green, pericarp thin-walled, dry at maturity, crustaceous, sparingly dehiscent." [Not really fleshy-fruited]
707	1998. Plowman, T.C.. A revision of the South American species of <i>Brunfelsia</i> (Solanaceae). <i>Fieldiana Botany</i> . 39: 1–135.	[Propagules dispersed by other animals (externally)? No] "In section <i>Franciscea</i> the fruit is usually a relatively small capsule that is green or brown and has a coriaceous pericarp that becomes thin and brittle on drying. The persistent calyx encloses the fruit, at least in part. These capsules may split open at maturity, but only sparingly. It may be that many species are completely indehiscent and their seeds are released only upon rotting on the forest floor...Capsule enclosed by persistent calyx, 11-13 mm long, 8-10 mm in diameter, ovoid, apiculate at apex, smooth, glabrous, dark green, pericarp thin-walled, dry at maturity, crustaceous, sparingly dehiscent." [No evidence, and no means of external attachment]
708	1987. Clay, H.F./Hubbard, J.C.. <i>The Hawaii Garden: Tropical Shrubs</i> . University of Hawaii Press, Honolulu, HI	[Propagules survive passage through the gut? Yes] "Small, orange, single, 1/2-inch berries sometimes follow the bloom." [Fleshy-fruited, presumably adapted to survive passage through gut]
801	1998. Plowman, T.C.. A revision of the South American species of <i>Brunfelsia</i> (Solanaceae). <i>Fieldiana Botany</i> . 39: 1–135.	[Prolific seed production (>1000/m ²)? No] "Capsule enclosed by persistent calyx, 11-13 mm long, 8-10 mm in diameter, ovoid, apiculate at apex, smooth, glabrous, dark green, pericarp thin-walled, dry at maturity, crustaceous, sparingly dehiscent. Seeds 10-12, 5-6 mm long, 3 mm in diameter, oblong ellipsoid, angular, dark brown, reticulate pitted.... <i>Brunfelsia latifolia</i> is a diminutive shrub endemic to the state of Rio de Janeiro in Brazil ... " [small shrub unlikely to produce such high seed densities]
802	1998. Plowman, T.C.. A revision of the South American species of <i>Brunfelsia</i> (Solanaceae). <i>Fieldiana Botany</i> . 39: 1–135.	[Evidence that a persistent propagule bank is formed (>1 yr)? No] No evidence
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information found on herbicide efficacy or chemical control of this species
804	1987. Clay, H.F./Hubbard, J.C.. <i>The Hawaii Garden: Tropical Shrubs</i> . University of Hawaii Press, Honolulu, HI	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "May be drastically pruned to desired form or to reduce size; plant is naturally loose-growing, should not be maintained as a topiary form; pruning after flowering induces new growth and vigorous blooming during the following season."
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]