

Taxon: <i>Lavandula stoechas</i> L.	Family: Lamiaceae
Common Name(s): French lavender Italian lavender Spanish lavender topped lavender wild lavender	Synonym(s): <i>Stoechas officinarum</i> Mill.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 8 Dec 2021
WRA Score: 14.5	Designation: H(HPWRA)	Rating: High Risk

Keywords: Perennial Shrub, Invasive (Australia), Flammable, Dense Cover, Persistent Seedbank

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
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)	Low
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	n
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)	y
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	y
305	Congeneric weed		
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
408	Creates a fire hazard in natural ecosystems	y=1, n=0	y
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	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	y
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		
604	Self-compatible or apomictic	y=1, n=-1	y
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	2
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	y
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	y
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	y
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/m ²)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
803	Well controlled by herbicides		
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)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	"The species is indigenous to northwestern Africa (i.e. Algeria, Morocco and Tunisia), the Madeira Islands, the Canary Islands, southern Europe (i.e. Greece, Italy, France, Portugal and Spain) and Western Asia (i.e. Cyprus, Israel, Lebanon, Syria and Turkey). It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	Low
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Dec 2021]	"Native Africa MACARONESIA: Spain [Canarias], Portugal [Madeira Islands] NORTHERN AFRICA: Algeria, Morocco, Tunisia Asia-Temperate WESTERN ASIA: Cyprus, Israel, Lebanon, Syria, Turkey Europe SOUTHEASTERN EUROPE: Greece (incl. Crete), Italy (incl. Sardinia, Sicily) SOUTHWESTERN EUROPE: Spain (incl. Balears), France (incl. Corsica), Portugal"
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	"The species is indigenous to northwestern Africa (i.e. Algeria, Morocco and Tunisia), the Madeira Islands, the Canary Islands, southern Europe (i.e. Greece, Italy, France, Portugal and Spain) and Western Asia (i.e. Cyprus, Israel, Lebanon, Syria and Turkey). It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."

Qsn #	Question	Answer
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Dec 2021]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Humid and subhumid warm-temperate regions usually with a winter-dominant rainfall."
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	"It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."
	Plants for a Future. (2021). <i>Lavandula stoechas</i> . https://pfaf.org/user/Plant.aspx?LatinName=Lavandula+stoechas . [Accessed 6 Dec 2021]	"USDA hardiness 7-10"

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Topped lavender, a native of the Mediterranean region, has been widely distributed throughout the world as an ornamental species. It rarely becomes naturalised but is established as a weed in parts of Victoria and South Australia."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence in the Hawaiian Islands

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	"It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."

301	Naturalized beyond native range	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Dec 2021]	"Naturalized Australasia AUSTRALIA: Australia NEW ZEALAND: New Zealand"

Qsn #	Question	Answer
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Topped lavender, a native of the Mediterranean region, has been widely distributed throughout the world as an ornamental species. It rarely becomes naturalised but is established as a weed in parts of Victoria and South Australia."
	Queensland Government. (2021). Weeds of Australia. <i>Lavandula stoechas</i> . https://keyserver.lucidcentral.org/weeds . [Accessed 7 Dec 2021]	"Widely naturalised in southern Australia (i.e. in some parts of central and southern New South Wales, in the ACT and Victoria, in eastern South Australia and in south-western Western Australia). Also naturalised in New Zealand and south-western USA (i.e. California)."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence in the Hawaiian Islands

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Impacts agriculture and the environment

303	Agricultural/forestry/horticultural weed	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"In Australia, it occurs as a weed of neglected areas and poor pastures on a range of soils in areas of moderate rainfall." ... "As a weed it forms dense patches which eliminate most other vegetation and, because it is not eaten by stock, the loss of production can be considerable. Dense patches also provide harbour for rabbits."

304	Environmental weed	y
	Source(s)	Notes
	Weber, E. (2017). Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"A native of the Mediterranean region, bush lavender has become invasive in Australia. The shrub forms dense patches eliminating most other plants including smaller shrubs. In woodlands bush lavender severely impedes regeneration of woody plants (Muyt, 2001). Pastures infested by this weed have a reduced productivity. Patches of <i>Lavandula stoechas</i> also provide hiding sites for rabbits (Muyt, 2001; Parsons and Cuthbertson, 2001)."

Qsn #	Question	Answer
	<p>Queensland Government. (2021). Weeds of Australia. <i>Lavandula stoechas</i>. https://keyserver.lucidcentral.org/weeds. [Accessed 7 Dec 2021]</p>	<p>"Topped lavender (<i>Lavandula stoechas</i>) is regarded as a significant environmental weed in South Australia, and as an environmental weed in Victoria and Western Australia. It is also listed as a priority environmental weed in at least one Natural Resource Management region. This species invades mallee scrublands, lowland grasslands and disturbed grassy woodlands in the temperate regions of Australia. It can form dense stands in these habitats that eliminate all other ground flora, while also severely impeding the regeneration of the over-storey vegetation. Topped lavender (<i>Lavandula stoechas</i>) is a common environmental weed of the Greater Adelaide and Mount Lofty Ranges region, and is a serious problem in the Clare Valley, in south-eastern South Australia. It has been recorded in several conservation areas in this state (e.g. Ferguson Conservation Park, Greenhill Recreation Park, Belair Reserve and Cleland Conservation Park) and has also invaded remnant habitats where the few remaining colonies of the endangered white beauty spider orchid (<i>Caladenia argocalla</i>) are known to occur. In Victoria, topped lavender (<i>Lavandula stoechas</i>) is listed as an environmental weed in several local authority areas (e.g. in Knox City, Kingston City and Hume City). In Western Australia it is often found on roadsides, in wasteland, and along creeks and drainage lines between Perth and Manjimup, but also invades grassland, open woodlands and disturbed natural vegetation."</p>

305	Congeneric weed	
	Source(s)	Notes
	<p>Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall</p>	<p>Several species listed as naturalized and/or weeds, but evidence of serious detrimental impacts to agriculture or the natural environment have not been corroborated</p>

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	<p>Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht</p>	<p>"A low-growing, erect, evergreen, perennial shrub 0.3–1 m high with quadrangular, pubescent stems becoming woody and rough with age. Leaves are sessile, opposite, greyish-green, pubescent, small, linear or lanceolate 11–30 mm by 2–5 mm with obtuse or acute tips, entire margin and recurved"</p>

402	Allelopathic	
	Source(s)	Notes

Qsn #	Question	Answer
	Pereira, I. P., Dias, L. S., & Dias, A. S. (2018). Ranking Mediterranean-type shrubs and trees by their allelopathic activity is not independent of how extract concentration is expressed. <i>Current Science</i> , 115(5): 904-909	[Extracts show negative allelopathic effects] "Germination of control was 91.0% ± 3.0%. Effects ranged between -80.6% ± 2.2% and 7.7% ± 0%. Positive effects were found in 47% of bioassays, including all concentrations of <i>Arbutus</i> Figure 2. Expected and observed effects of extracts corrected for pH and osmotic pressure on germination of <i>L. sativa</i> cv. 'Rainha de Maio' (means ± SE). Extract concentrations are expressed as (a) PFW, (b) PDW and (c) EDW. Concentrations were normed so that the highest value was unity. Open circles, <i>Foeniculum vulgare</i> ; filled circles, <i>Cistus ladanifer</i> ; open squares, <i>Cistus monspeliensis</i> ; filled squares, <i>Calicotome villosa</i> ; open diamonds, <i>Lavandula stoechas</i> and filled diamonds, <i>Daphne gnidium</i> . <i>unedo</i> and <i>Q. suber</i> , while negative effects were found in 53% of bioassays, including all concentrations of <i>Cistus ladanifer</i> , <i>C. villosa</i> , <i>Lavandula stoechas</i> , <i>P. angustifolia</i> and <i>Daphne gnidium</i> ."
	Sánchez, A. M., & Peco, B. (2002). Dispersal mechanisms in <i>Lavandula stoechas</i> subsp. <i>pedunculata</i> : autochory and endozoochory by sheep. <i>Seed Science Research</i> , 12(2), 101-111	[Suspected to possibly be allelopathic] "Lavandula populations are dense formations, with rarely more than 1 m between individual plants (Dfaz-Barradas et al., 1999). Moreover, similar allelopathic effects to those described for other labiate thickets cannot be dismissed (Vokou and Margaris, 1986; Vokou, 1992; Murray, 1998)."

403	Parasitic	n
	Source(s)	Notes
	Lim, T.K. (2014). <i>Edible Medicinal And Non-Medicinal Plants</i> . Volume 8, Flowers. Springer, Dordrecht	"A low-growing, erect, evergreen, perennial shrub 0.3–1 m high with quadrangular, pubescent stems becoming woody and rough with age." [No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Bartolomé, J., Franch, J., Plaixats, J., & Seligman, N. G. (1998). Diet selection by sheep and goats on Mediterranean heath-woodland range. <i>Journal of Range Management</i> , 51(4), 383–391	"Table 2. Average annual species composition of epidermal fragments in feces of 3 mixed herds of sheep and goats grazing in 3 farms in the Montseny Biosphere Reserve, Catalunya, Spain (1989/90)." [<i>Lavandula stoechas</i> consumed by goats and sheep]
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	[Unpalatable to cattle] "As a weed it forms dense patches which eliminate most other vegetation and, because it is not eaten by stock, the loss of production can be considerable."

405	Toxic to animals	n
	Source(s)	Notes
	Plants for a Future. (2021). <i>Lavandula stoechas</i> . https://pfaf.org/user/Plant.aspx?LatinName=Lavandula+stoechas . [Accessed 7 Dec 2021]	"Known Hazards - None known"
	Gardenersworld.com (2021). <i>Lavandula stoechas</i> . https://www.gardenersworld.com/plants/lavandula-stoechas/ . [Accessed 7 Dec 2021]	<p><i>Lavandula stoechas</i> can be toxic.</p> <p>Toxic to Cats</p> <p>Toxic to Dogs.</p> <p>No reported toxicity to Birds</p> <p>No reported toxicity to Horses</p> <p>No reported toxicity to Livestock</p> <p>No reported toxicity to People</p>

Qsn #	Question	Answer
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Organic Crop Protectants. (2021). Lavender. https://www.ecoorganicgarden.com.au/gardening-tips/how-to-grow-lavender/ . [Accessed 7 Dec 2021]	"Pests and Disease of Lavender. When grown in ideal conditions (full sun, free-draining calcium rich soil and low summer humidity) they are generally trouble free. In conditions other than this fungal problems usually appear. Commonly it will be root rot and death of lower foliage making bushes look very scraggy. These fungal problems will be more apparent in older, less vigorous plants. Regular applications of eco-seaweed may help stave off fungal problems. Ultimately though you should aim to improve the growing conditions or replace older plants with younger plants periodically. Lavenders are seldom attacked by pests however whitefly and aphids can sometimes be a problem. Treat with a couple of sprays of eco-oil for easy control."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Plants for a Future. (2021). <i>Lavandula stoechas</i> . https://pfaf.org/user/Plant.aspx?LatinName=Lavandula+stoechas . [Accessed 7 Dec 2021]	Known Hazards None known
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Gardenersworld.com (2021). <i>Lavandula stoechas</i> . https://www.gardenersworld.com/plants/lavandula-stoechas/ . [Accessed 7 Dec 2021]	No reported toxicity to People

408	Creates a fire hazard in natural ecosystems	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Fire response. Hot fire may kill adult plants and destroy some soil stored seed. Plants will resprout following cooler fires. Prolific seed germination can follow fire. "

Qsn #	Question	Answer
	Henaoui, S. E. A., Bouazza, M., & Amara, M. (2013). The fire risk of the plant groupings with <i>Cistus</i> in the area of Tlemcen (Western Algeria). <i>European Scientific Journal</i> , 9 (29): 84-103	"Table 1: Classification of plant species according to note of flammability" [High flammability - <i>Lavandula stoechas</i>] ... "For the entire study area, taxa that have a short ignition delay and a short or long burning (<i>Erica arborea</i> , <i>Arbutus unedo</i> , <i>Ceratonia siliqua</i> , <i>Lavandula stoechas</i> , <i>Ulex parviflorus</i> , <i>Thymus ciliatus</i> , <i>Lonicera implexa</i> , <i>Cytisus triflorus</i> , <i>Juniperus oxycedrus</i> , <i>Quercus faginea</i> subsp. <i>tlemceniensis</i> , <i>Quercus suber</i> , <i>Pinus halepensis</i> , <i>Cistus ladaniferus</i> subsp. <i>africanus</i> , <i>Calycotome intermedia</i> , <i>Crataegus oxyacantha</i> , <i>Cistus monspeliensis</i> , <i>lavandula dentata</i> , <i>Globularia alypum</i> , <i>Galium verum</i> , <i>Asparagus stipularis</i> , <i>Asparagus albus</i> , <i>Tetraclinis articulata</i> , <i>Olea europaea</i> and <i>Chamaerops humilis</i>). These plants remain extremely susceptible to fire characterizing vegetation degraded with <i>Quercus suber</i> , <i>Quercus faginea</i> subsp. <i>tlemceniensis</i> and <i>Tetraclinis articulata</i> (Mountains of Tlemcen and Mountains Traras)."

409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	Notes
	Gardenersworld.com (2021). <i>Lavandula stoechas</i> . https://www.gardenersworld.com/plants/lavandula-stoechas/ . [Accessed 7 Dec 2021]	"For best results, grow <i>Lavandula stoechas</i> in well-drained soil in full sun."
	Plants for a Future. (2021). <i>Lavandula stoechas</i> . https://pfaf.org/user/Plant.aspx?LatinName=Lavandula+stoechas . [Accessed 7 Dec 2021]	"It cannot grow in the shade." ... "Prefers a sunny position in a neutral to alkaline soil[1, 200], growing well on chalk[11]."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"In Australia, it occurs as a weed of neglected areas and poor pastures on a range of soils in areas of moderate rainfall."
	Gardenersworld.com (2021). <i>Lavandula stoechas</i> . https://www.gardenersworld.com/plants/lavandula-stoechas/ . [Accessed 7 Dec 2021]	"Soil type: Acidic / chalky / alkaline / well drained / light / sandy"
	Plants for a Future. (2021). <i>Lavandula stoechas</i> . https://pfaf.org/user/Plant.aspx?LatinName=Lavandula+stoechas . [Accessed 7 Dec 2021]	"Succeeds in almost any soil so long as it is well-drained and not too acid[1, 200]."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Lim, T.K. (2014). <i>Edible Medicinal And Non-Medicinal Plants</i> . Volume 8, Flowers. Springer, Dordrecht	"A low-growing, erect, evergreen, perennial shrub 0.3–1 m high with quadrangular, pubescent stems becoming woody and rough with age."

412	Forms dense thickets	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"As a weed it forms dense patches which eliminate most other vegetation and, because it is not eaten by stock, the loss of production can be considerable. Dense patches also provide harbour for rabbits."

501	Aquatic	n
	Source(s)	Notes
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	[Terrestrial] "In its native range, it thrives in full sun in dry hills, garrigue, maquis shrubland or open woodlands and on well-drained limestone or granite soils. It requires dry or moist soil and is drought resistant."

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Dec 2021]	Family: Lamiaceae (alt. Labiatae) Subfamily: Nepetoideae Tribe: Ocimeae Subtribe: Lavandulinae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Dec 2021]	Family: Lamiaceae (alt. Labiatae) Subfamily: Nepetoideae Tribe: Ocimeae Subtribe: Lavandulinae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Root. Woody, spreading and shallow."

Qsn #	Question	Answer
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lim, T.K. (2014). Edible Medicinal And Non-Medicinal Plants. Volume 8, Flowers. Springer, Dordrecht	[No evidence] "The species is indigenous to northwestern Africa (i.e. Algeria, Morocco and Tunisia), the Madeira Islands, the Canary Islands, southern Europe (i.e. Greece, Italy, France, Portugal and Spain) and Western Asia (i.e. Cyprus, Israel, Lebanon, Syria and Turkey). It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."

602	Produces viable seed	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Seeds germinate at most times of the year"
	Sánchez, A. M., & Peco, B. (2002). Dispersal mechanisms in <i>Lavandula stoechas</i> subsp. <i>pedunculata</i> : autochory and endozoochory by sheep. <i>Seed Science Research</i> , 12(2), 101-111	"The recorded seed rain was 2544 seeds m ⁻² inside the <i>Lavandula</i> patches, with an aggregated distribution. Autochory around the mother plant fitted a negative exponential distribution, with 90.5% concentrated in a 0-30 cm radius and a maximum distance of 1 m. Viable <i>Lavandula</i> seeds were found in 73% of the examined dung samples, with an average of 5.5 seeds per sample (6 g) and a high inter- and intra-annual variation. This high seed content, together with the daily sheep movements over several kilometres, make the species highly dispersible, possibly explaining its clear pioneer nature."

603	Hybridizes naturally	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence found

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Herrera, F. J. (1997). The role of colored accessory bracts in the reproductive biology of <i>Lavandula stoechas</i> . <i>Ecology</i> , 78 (2), 494-504	"This study investigates the role played by showy structures in the reproduction of <i>Lavandula stoechas</i> L. (Lamiaceae), a self-compatible Mediterranean shrub with compact, head-like inflorescences that are terminated by a tuft of conspicuous pink bracts."

Qsn #	Question	Answer
605	Requires specialist pollinators	n
	Source(s)	Notes
	Roubik, D.W. (1995). Pollination of cultivated plants in the tropics. FAO Services Bulletin 118. FAO, Rome, Italy	"Appendix I" [<i>Lavandula stoechas</i> - Pollinators = bee, <i>Bombus</i> , <i>Apis</i>]
	Herrera, F. J. (1997). The role of colored accessory bracts in the reproductive biology of <i>Lavandula stoechas</i> . <i>Ecology</i> , 78 (2), 494-504	"Sites also differ in the abundance and diversity of the flower-visiting insect array: at Dofiana, <i>Apis mellifera</i> accounts for nearly 90% of visits (Herrera 1988), whereas at Aznalcazar a varied assemblage of solitary bees is found in addition to honey bees."
606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Reproduction. Seed. Dispersal. Wind, water, birds, soil movement, garden refuse. Time to first flowering. 2 to 3 years. Vegetative regeneration strategy. Resprouts from the crown."
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"The perennial roots and crowns are dragged by cultivation equipment and road graders to clean areas where they establish new colonies."
607	Minimum generative time (years)	2
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"Seeds germinate at most times of the year; early growth is slow, and plants are at least 2 years old before flowering."
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Time to first flowering. 2 to 3 years."
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"The perennial roots and crowns are dragged by cultivation equipment and road graders to clean areas where they establish new colonies. Spread in road gravel taken from infested creeks has been the most important means of dispersal in north-eastern Victoria."
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Lim, T.K. (2014). <i>Edible Medicinal And Non-Medicinal Plants</i> . Volume 8, Flowers. Springer, Dordrecht	"It has been introduced throughout Europe and to temperate/subtemperate areas in the Americas, Asia and Australia."
703	Propagules likely to disperse as a produce contaminant	y

Qsn #	Question	Answer
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Contaminant, Crop, Herbal, Ornamental Dispersed by: Humans, Animals, Vehicles, Escapee"
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Reproduction. Seed. Dispersal. Wind, water, birds, soil movement, garden refuse."

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Most spread nowadays is through the movement of seed, largely by water and wind but some also by birds."

705	Propagules water dispersed	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Most spread nowadays is through the movement of seed, largely by water and wind but some also by birds."

706	Propagules bird dispersed	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Most spread nowadays is through the movement of seed, largely by water and wind but some also by birds."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	"Most spread nowadays is through the movement of seed, largely by water and wind but some also by birds."

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Sánchez, A. M., & Peco, B. (2002). Dispersal mechanisms in <i>Lavandula stoechas</i> subsp. <i>pedunculata</i> : autochory and endozoochory by sheep. <i>Seed Science Research</i> , 12(2), 101-111	"Viable <i>Lavandula</i> seeds were found in 73% of the examined dung samples, with an average of 5.5 seeds per sample (6 g) and a high inter and intra-annual variation. This high seed content, together with the daily sheep movements over several kilometers, make the species highly dispersible, possibly explaining its clear pioneer nature. Moreover, available data suggest that seeds in sheep dung can germinate and establish under natural conditions, and that dung addition has a positive effect on species establishment."

801	Prolific seed production (>1000/m ²)	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Sánchez, A. M., & Peco, B. (2002). Dispersal mechanisms in <i>Lavandula stoechas</i> subsp. <i>pedunculata</i> : autochory and endozoochory by sheep. <i>Seed Science Research</i> , 12(2), 101-111	"The recorded seed rain was 2544 seeds m ⁻² inside the <i>Lavandula</i> patches, with an aggregated distribution. Autochory around the mother plant fitted a negative exponential distribution, with 90.5% concentrated in a 0-30 cm radius and a maximum distance of 1 m."

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"Seed is long lived in the soil and, therefore, control practices must be continued for several years."
	Sanchez, A. M., & Peco, B. (2007). Lack of recruitment in <i>Lavandula stoechas</i> subsp. <i>pedunculata</i> : a case of safe-site limitation. <i>Acta Oecologica</i> , 31(1), 32-39	"The seeds do not present any particular dormancy as around 75% of seeds, collected directly from the plant, germinate in a few days when sown in near-natural conditions (Sanchez, 2001). Nevertheless, this species can form short-term persistent seed banks as viable seeds have been found in deep soil layers (5–10 cm depth) although in low numbers (Traba, 2000)."

803	Well controlled by herbicides	
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"Topped lavender is not susceptible to normal aqueous herbicide solutions and the most effective treatment is a mixture of ester 2,4-D and diesel oil. Unfortunately, the newer herbicides have not been assessed against this weed."
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Try cut and paint with 50% glyphosate. Spray regrowth in spring. Read the manufacturers' labels and material safety data sheets before using herbicides." [No information on efficacy]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2021). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 7 Dec 2021]	"Fire response. Hot fire may kill adult plants and destroy some soil stored seed. Plants will resprout following cooler fires. Prolific seed germination can follow fire. "
	Parsons, W.T. & Cuthbertson, E.G. (2001). <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	"Slashing and mowing of mature plants are not effective because the plant regrows readily from the woody base."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Naturalized in Australia and New Zealand (but no evidence in the Hawaiian Islands to date)
- Regarded as an agricultural and environmental weed in parts of Australia
- Unpalatable to cattle and possibly other grazing animals (but browsed by sheep and goats)
- Potentially toxic to dogs and cats
- Highly flammable and may increase fire risk in fire prone areas
- Tolerates many soil types
- Forms dense patches which eliminate most other vegetation
- Reproduces by prolific seed production
- Self-compatible
- Reaches maturity in 2-3 years
- Roots and crowns can be spread by cultivation equipment and road graders
- Seeds dispersed by wind, water, birds, in the droppings of animals, soil movement, garden refuse, and intentional cultivation
- Prolific seed production
- Forms a persistent seed bank
- Able to resprout after cutting and low intensity fires

Low Risk Traits

- A species of temperate to Mediterranean climates that may only be a risk in cooler, higher elevation areas in the tropics
- Unarmed (no spines, thorns, or burrs)
- Palatable to goats and sheep (but not cattle and some other animals)
- Thrives in high light environments (dense shade may inhibit spread)
- Not reported to spread vegetatively
- Certain herbicides may provide effective control