

<b>Taxon:</b> <i>Chamaemelum nobile</i> (L.) All.	<b>Family:</b> Asteraceae
<b>Common Name(s):</b> chamomile common chamomile corn chamomile English chamomile garden chamomile noble chamomile Roman chamomile Russian chamomile sweet chamomile	<b>Synonym(s):</b> Anthemis nobilis L. Ormenis nobilis (L.) J. Gay ex Coss. &

<b>Assessor:</b> Chuck Chimera	<b>Status:</b> Assessor Approved	<b>End Date:</b> 13 Apr 2023
<b>WRA Score:</b> 2.0	<b>Designation:</b> EVALUATE	<b>Rating:</b> Evaluate

**Keywords:** Perennial Herb, Naturalized Elsewhere, Herbal Tea, Self-Incompatible, Spreads Vegetatively

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	y
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		
303	Agricultural/forestry/horticultural weed		
304	Environmental weed		
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		
403	Parasitic	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
404	Unpalatable to grazing animals	y=1, n=-1	y
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		
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		
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	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		
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	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	2
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
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	n
801	Prolific seed production (>1000/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	y
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
	Ravindran, P. N. (2017). The Encyclopedia of Herbs and Spices. CABI, Wallingford, UK	[Long history of cultivation, but not documented to be heavily domesticated] "Roman chamomile is also known as English chamomile. It is a perennial herb, the native home is the Iberian Peninsula and southern France. However, now it is found growing all over Europe, the Mediterranean region, North Africa, south-west Asia, and also in many countries in South and North America. The plant is also called true chamomile and common chamomile, and it has been in use for centuries as a medicinal herb, especially known for its powers to cure ague, a type of chronic fever. In the Middle Ages, Roman chamomile was in use as a strewing herb, in order to create a fragrant ambience for royalty and celebrities. At that time it was also used in beer making. Now it is cultivated mainly for the purpose of distilling aromatic oil from its leaves. The essential oil produced in the UK is considered to be the best quality (Lyth, 2001)."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2023). 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
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	" <i>C. nobile</i> belongs to the Sub-oceanic Southern Temperate biogeographical element (Preston & Hill 1997), and is often referred to as having an 'Atlantic' distribution. It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012)."

Qsn #	Question	Answer
202	Quality of climate match data	High
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	" <i>C. nobile</i> belongs to the Sub-oceanic Southern Temperate biogeographical element (Preston & Hill 1997), and is often referred to as having an 'Atlantic' distribution. It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012)."

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	" <i>C. nobile</i> belongs to the Sub-oceanic Southern Temperate biogeographical element (Preston & Hill 1997), and is often referred to as having an 'Atlantic' distribution. It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012)."
	Small, E. (2000). <i>Culinary Herbs</i> . NRC Research Press, Ottawa, Canada	"Climate: A sunny, open situation should be provided, although slight shade can be tolerated. This perennial species has been rated as capable of growing in regions with minimum temperatures as low as -15 °C (Huxley et al. 1992). According to Foster (1992/1993), Roman chamomile does not tolerate hot, dry weather."
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 6 Apr 2023]	[5+ hardiness zones in temperate regions] "USDA Plant Hardiness Zone: 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b, 8a, 8b, 9a, 9b"

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes

Qsn #	Question	Answer
	<p>USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a>. [Accessed 6 Apr 2023]</p>	<p>"Adventive Europe MIDDLE EUROPE: Belgium, Switzerland, Czech Republic, Germany, Slovakia Naturalized Africa MACARONESIA: Portugal [Madeira Islands] Australasia AUSTRALIA: Australia [Tasmania, South Australia (s.e.), Victoria] NEW ZEALAND: New Zealand Europe MIDDLE EUROPE: Austria EASTERN EUROPE: Belarus, Moldova, Ukraine (incl. Krym) SOUTHEASTERN EUROPE: Bulgaria, Italy, Serbia Northern America NORTHEASTERN U.S.A.: United States [Connecticut, Indiana, New Jersey, New York, Ohio] NORTH-CENTRAL U.S.A.: United States [Illinois, Wisconsin] SOUTHEASTERN U.S.A.: United States [Delaware, Maryland, North Carolina] SOUTHWESTERN U.S.A.: United States [California]"</p>
	<p>Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.</p>	<p>"<i>C. nobile</i> belongs to the Sub-oceanic Southern Temperate biogeographical element (Preston &amp; Hill 1997), and is often referred to as having an 'Atlantic' distribution. It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship &amp; Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker &amp; de Salas 2012)."</p>

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	<p>USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a>. [Accessed 6 Apr 2023]</p>	<p>"Cultivated (widely cult.)"</p>
	<p>State Herbarium of South Australia. (2023). Electronic Flora of South Australia species Fact Sheet. <i>Chamaemelum nobile</i>. <a href="http://www.flora.sa.gov.au">http://www.flora.sa.gov.au</a>. [Accessed 6 Apr 2023]</p>	<p>"Uses: Widely cultivated as a medicinal herb and a lawn plant, and naturalised in many parts of the world."</p>

301	Naturalized beyond native range	y
	Source(s)	Notes
	<p>Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.</p>	<p>"It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker &amp; de Salas 2012)."</p>

Qsn #	Question	Answer
	<p>USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a>. [Accessed 6 Apr 2023]</p>	<p>"Naturalized Africa MACARONESIA: Portugal [Madeira Islands] Australasia AUSTRALIA: Australia [Tasmania, South Australia (s.e.), Victoria] NEW ZEALAND: New Zealand Europe MIDDLE EUROPE: Austria EASTERN EUROPE: Belarus, Moldova, Ukraine (incl. Krym) SOUTHEASTERN EUROPE: Bulgaria, Italy, Serbia Northern America NORTHEASTERN U.S.A.: United States [Connecticut, Indiana, New Jersey, New York, Ohio] NORTH-CENTRAL U.S.A.: United States [Illinois, Wisconsin] SOUTHEASTERN U.S.A.: United States [Delaware, Maryland, North Carolina] SOUTHWESTERN U.S.A.: United States [California]"</p>
	<p>State Herbarium of South Australia. (2023). Electronic Flora of South Australia species Fact Sheet. <i>Chamaemelum nobile</i>. <a href="http://www.flora.sa.gov.au">http://www.flora.sa.gov.au</a>. [Accessed 6 Apr 2023]</p>	<p>"Uses: Widely cultivated as a medicinal herb and a lawn plant, and naturalised in many parts of the world."</p>
	<p>Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., &amp; Walvoord, N. (2020). Plants of Hawai'i. <a href="http://www.plantsofhawaii.org.">http://www.plantsofhawaii.org.</a> [Accessed 6 Apr 2023]</p>	<p>No evidence in the Hawaiian Island to date</p>

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	<p>Australian Biological Resources Study. (2015). Flora of Australia Volume 37, Asteraceae 1. CSIRO Publishing, Melbourne</p>	<p>"Grows in roadsides, waste areas and lawns."</p>
	<p>Dave's Garden. (2023). Chamomile Lawn, Roman Chamomile - <i>Chamaemelum nobile</i>. <a href="https://davesgarden.com/guides/pf/go/32272/">https://davesgarden.com/guides/pf/go/32272/</a>. [Accessed 13 Apr 2023]</p>	<p>[May be a lawn weed] "On Feb 27, 2012, herbella from Albuquerque, NM wrote: Few things are invasive in this High Desert region of New Mexico where water is so scarce, but once you plant this herb, it shows up in the lawn and everywhere. However, it smells so nice, has such pretty flowers in spring, has low water requirements, and looks so green in January through March (when nothing else does) that I have decided to let it take over the front lawn. "</p>
	<p>Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.</p>	<p>[Thrives in disturbed areas, but impacts are generally minor, or not documented] "A prolonged cessation in grazing or cutting regimes will result in the growth and eventual dominance of tall, rank vegetation and the eventual loss of <i>C. nobile</i>, as will excessive drainage of grasslands leading to the loss of bare areas in the spring and early summer months."</p>

Qsn #	Question	Answer
303	<b>Agricultural/forestry/horticultural weed</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Cereals" [Impacts to cereal crops unclear]

304	<b>Environmental weed</b>	
	<b>Source(s)</b>	<b>Notes</b>
	White, M., Cheal, D., Carr, G. W., Adair, R., Blood, K. and Meagher, D. (2018). Advisory list of environmental weeds in Victoria. Arthur Rylah Institute for Environmental Research Technical Report Series No. 287. Department of Environment, Land, Water and Planning, Heidelberg, Victoria	[Classified as an environmental weed of rarely significant impacts] "Advisory list of environmental weeds in Victoria Appendix 1- Advisory list of environmental weeds in Victoria" [Chamaemelum nobile - Weed status in Victoria = Environmental weed; Impact on natural systems = Rarely significant; Area of potential distribution remaining = Extensive potential for further spread]

305	<b>Congeneric weed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Fernandes, J. D. (1989). Weed control in faba bean. In Proceedings of the 4th EWRS symposium on weed problems in Mediterranean climates. Vol. 2. Problems of weed control in fruit, horticultural crops and rice. (pp. 83-88)	[Chamaemelum fuscatum] "Abstract : In field trials in Corunche, Portugal in 1984-86, where the dominant weeds were Chamaemelum fuscatum, Lamium amplexicaule, Raphanus raphanistrum, Spargula arvensis, Stellaria media and Urtica urens, control with alachlor at 1.92 kg/ha, linuron at 0.5 kg, methabenzthiazuron at 2.45 kg, pendimethalin at 1.65 kg, simazine at 0.5 kg and terbutryn at 2.0 kg pre-em. ranged from 79.9 to 99.7%. In 1985 the efficacy decreased to levels between 69.0% and 78.2%, probably due to heavy rainfall. Yield losses of faba beans in the unweeded control as compared with the mean of all herbicide-treated plots and the hand-hoed control varied between 29.1% and 33.6%."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Chamaemelum fuscatum] "Weed of: Cereals, Grapevines, Orchards & Plantations"

401	<b>Produces spines, thorns or burrs</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). Chamaemelum nobile (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	[No evidence] "Chamaemelum nobile has alternately arranged, linear-subulate (tapering to a fine point) leaves with a 'feathery' appearance, 2-3 times pinnate and with sparsely hairy leaflet lobes (2.5-4 × 0.5 mm) that are a greyish-green colour (Poland & Clement 2010). Crushing of the leaves will produce a fresh apple scent, a particularly useful character if the location where the plant grows is under heavy grazing pressure. Solitary flower heads are 18-25 mm across, and have oblong-acuminate papery receptacular scales at the base of the white ray petals (Stace 2010). There is also a noticeable swelling at the base of the corolla tubes that cover the top of achenes in a 'hood' (Rose 2006)."

402	<b>Allelopathic</b>	
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Qsn #	Question	Answer
	Source(s)	Notes
	Shiraishi, S., Watanabe, I., Kuno, K., & Fujii, Y. (2002). Allelopathic activity of leaching from dry leaves and exudate from roots of ground cover plants assayed on agar. <i>Weed Biology and Management</i> , 2(3), 133-142	[Possible allelopathic effects from extracts] "The effects of leaches from dry leaves of 71 ground cover plant species on lettuce were tested at the first screening. The inhibitory effects on radicle and hypocotyl elongations of lettuce varied with the different species of cover plants that were used. Eight species of <i>Oxalis</i> showed strong inhibitions (4–27% of untreated control on radicle elongation). Inhibitory activities of seven species of cover plants on three weed species, live amaranth ( <i>Amaranthus lividus</i> ), southern crabgrass ( <i>Digitaria ciliaris</i> ) and common lambsquarters ( <i>Chenopodium album</i> ), were tested at the second screening. Moss pink ( <i>Phlox subulata</i> ), trefoil ( <i>Oxalis brasiliensis</i> ), red spiderlily ( <i>Lycoris radiata</i> ), creeping thyme ( <i>Thymus serpyllum</i> ), European pennyroyal ( <i>Mentha pulegium</i> ), roman chamomile ( <i>Chamaemelum nobile</i> ) and star-of-Bethlehem ( <i>Ornithogalum umbellatum</i> ) were selected as donor plants because of their high inhibitory effects on lettuce growth and their usefulness as ornamental ground cover plants. Effects of leaches from dry leaves and exudates from the roots of these species were assayed on agar. Radicle elongations of all tested weed species were inhibited by leaches from trefoil and red spiderlily (8–31% and 14–24% of untreated control, respectively) and exudates from moss pink, trefoil and creeping thyme (11–43%, 31–74% and 22–67% of untreated control, respectively)."

403	Parasitic	n
	Source(s)	Notes
	Flora of North America. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.efloras.org">http://www.efloras.org</a> . [Accessed 13 Apr 2023]	[No evidence] "Perennials, 10–20(–30) cm across. Stems mostly prostrate (much branched, often forming mats), ± strigoso-sericeous to villous. Leaves sessile; blades oblong, 1–3(–5) cm, 2–3-pinnately lobed. Involucres 4–6 × 7–10+ mm. Phyllaries: margins and apices greenish or lacking pigment, abaxial faces ± villous. Paleae 3–4+ mm, margins greenish or lacking pigment. Ray florets usually 13–21+, rarely 0; laminae 7–10+ mm. Disc corollas 2–3 mm. Cypselae 1–1.5 mm. 2n = 18."

404	Unpalatable to grazing animals	y
	Source(s)	Notes
	Singer, C. (2009). <i>Deer in My Garden, Volume 2: Groundcovers &amp; Edgers</i> . Garden Wisdom Press, Grass Valley, CA	"This genus, a member of the Compositae family (daisies), includes several wonderful species and cultivars that are deer-resistant."
	WhyFarmIt. (2023). Is Chamomile Deer Resistant? [+Tips for Keeping Deer Away]. <a href="https://whyfarmit.com/is-chamomile-deer-resistant/">https://whyfarmit.com/is-chamomile-deer-resistant/</a> . [Accessed 13 Apr 2023]	[Unpalatable due to strong scent] " <i>Chamaemelum nobile</i> , otherwise known as Roman chamomile, is a short, perennial plant that can be used as lawn or ground cover. It is also commonly called English chamomile as its often found growing in British gardens as lawn or edging. Its strong scent and aromatic flavor are too intense for the taste buds of deer, and therefore it is deer resistant."

405	Toxic to animals	y
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	GlobalPETS. (2023). Herbs that calm and soothe. <a href="https://globalpetindustry.com/article/herbs-calm-and-soothe">https://globalpetindustry.com/article/herbs-calm-and-soothe</a> . [Accessed 13 Apr 2023]	"Perhaps surprisingly, chamomile ( <i>Chamaemelum nobile</i> ) is less safe for dogs and cats, since its components – volatile oil bisabolol, chamazulene, anthemic and tannic acid – can cause poisoning. According to the American Society for the Prevention of Cruelty to Animals (ASPCA), symptoms include contact dermatitis, allergic reactions, vomiting, diarrhea and anorexia, while long-term use can lead to bleeding tendencies."
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	"Problems: Problem for Cats Problem for Dogs Problem for Horses"

406	Host for recognized pests and pathogens	n
	<b>Source(s)</b>	<b>Notes</b>
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	"Consider using this problem free plant as a groundcover in a children's grade, cottage garden or near a rock wall as it has a meandering habit."
	Missouri Botanical Garden. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.missouribotanicalgarden.org">http://www.missouribotanicalgarden.org</a> . [Accessed 13 Apr 2023]	"No serious insect or disease problems. Watch for possible spread."

407	Causes allergies or is otherwise toxic to humans	
	<b>Source(s)</b>	<b>Notes</b>
	Crosby, D.G. (2004). <i>The Poisoned Weed: Plants Toxic to Skin</i> . Oxford University Press, New York, New York	"Its close relative, <i>Anthemis nobilis</i> (Roman chamomile, now renamed <i>Chamaemelum nobile</i> ) has been used in folk medicine since medieval times, but both poultices and tea made from chamomile (sometimes spelled camomile) cause ACD because of the lactone nobilin." [ACD = allergic contact dermatitis]
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	[Possibly to susceptible individuals] "Poisonous to Humans: Poison Severity: Low Poison Symptoms: Contact dermatitis, vomiting, diarrhea, anorexia, allergic reactions. Long term use can lead to bleeding tendencies. Poison Toxic Principle: Volatile oil; bisabolol, chamazulene, anthemic acid, tannic acid Causes Contact Dermatitis: Yes Poison Part: Leaves"
	Fuller, T.C. & McClintock, E.M. (1986). <i>Poisonous plants of California: Issue 53 of California natural history guides</i> . University of California Press, Berkeley and Los Angeles, CA	[Tea may be allergenic to some people] "Tea made from this species has caused inflammation of the mucous membranes of the nose and even anaphylactic shock in persons known to be allergic to ragweed pollen."

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August." [No evidence. Does not occur in fire prone areas or live long enough to contribute to fuel load]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August."
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	"Light: Full sun (6 or more hours of direct sunlight a day) Partial Shade (Direct sunlight only part of the day, 2-6 hours)"
	Missouri Botanical Garden. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.missouribotanicalgarden.org">http://www.missouribotanicalgarden.org</a> . [Accessed 13 Apr 2023]	"Sun: Full sun to part shade"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	" <i>C. nobile</i> is found in moderately acid, unimproved and seasonally winter-wet lowland grasslands on dry, sandy or gleyed soils (Winship & Chatters 1994)." ... "A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August."
	Get Busy Gardening. (2023). How To Grow Chamomile At Home. <a href="https://getbusygardening.com/growing-chamomile/">https://getbusygardening.com/growing-chamomile/</a> . [Accessed 13 Apr 2023]	"Chamomile thrives in a wide variety of conditions. It can tolerate full sun to partial shade, and many different soil types."
	Missouri Botanical Garden. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.missouribotanicalgarden.org">http://www.missouribotanicalgarden.org</a> . [Accessed 13 Apr 2023]	"Easily grown in average, medium, well-drained soils in full sun to part shade. Best in well-drained sandy soils."
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	"Soil Texture: Loam (Silt) Sand Soil pH: Acid (<6.0) Alkaline (>8.0) Neutral (6.0-8.0) Soil Drainage: Good Drainage Moist Occasionally Dry"

411	Climbing or smothering growth habit	n
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Flora of North America. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.efloras.org">http://www.efloras.org</a> . [Accessed 13 Apr 2023]	"Perennials, 10–20(–30) cm across. Stems mostly prostrate (much branched, often forming mats), ± strigoso-sericeous to villous. Leaves sessile; blades oblong, 1–3(–5) cm, 2–3-pinnately lobed."

412	Forms dense thickets	n
	<b>Source(s)</b>	<b>Notes</b>
	Australian Biological Resources Study. (2015). Flora of Australia Volume 37, Asteraceae 1. CSIRO Publishing, Melbourne	"Native to south-western Europe. Naturalised near Adelaide in SE S.A., in southern Vic. and in eastern Tas. Grows in roadsides, waste areas and lawns. Flowers late spring–autumn." [No evidence]
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	[Outcompeted when other vegetation is not cut or grazed] "A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August." ... "A prolonged cessation in grazing or cutting regimes will result in the growth and eventual dominance of tall, rank vegetation and the eventual loss of <i>C. nobile</i> , as will excessive drainage of grasslands leading to the loss of bare areas in the spring and early summer months."

501	Aquatic	n
	<b>Source(s)</b>	<b>Notes</b>
	Flora of North America. (2023). <i>Chamaemelum nobile</i> . <a href="http://www.efloras.org">http://www.efloras.org</a> . [Accessed 13 Apr 2023]	"Disturbed sites; 10–300 m"
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	[Terrestrial] " <i>C. nobile</i> is found in moderately acid, unimproved and seasonally winter-wet lowland grasslands on dry, sandy or gleyed soils (Winship & Chatters 1994). Habitats include sandy heaths, cricket pitches, playing fields, mown or grazed commons, old village greens, open woodland glades and on coastal winter-wet acid grassland where salt spray, exposure or trampling maintain a short sward (Killick 2002; Rand & Mundell 2011)."

502	Grass	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a> . [Accessed 13 Apr 2023]	"Family: Asteraceae (alt. Compositae) Subfamily: Asteroideae Tribe: Anthemideae Subtribe: Santolininae"

Qsn #	Question	Answer
503	<b>Nitrogen fixing woody plant</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a> . [Accessed 13 Apr 2023]	"Family: Asteraceae (alt. Compositae) Subfamily: Asteroideae Tribe: Anthemideae Subtribe: Santolininae"

504	<b>Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	NC State Extension. (2023). <i>Chamaemelum nobile</i> . <a href="https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/">https://plants.ces.ncsu.edu/plants/chamaemelum-nobile/</a> . [Accessed 13 Apr 2023]	"Roman chamomile is a low growing perennial in the Asteraceae (daisy) family. It is native to Europe and western Asia. Its roots are creeping and sturdy which allows it to spread and keep a firm foundation."

601	<b>Evidence of substantial reproductive failure in native habitat</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	[No evidence] "It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012)."
	Ravindran, P. N. (2017). The Encyclopedia of Herbs and Spices. CABI, Wallingford, UK	[No evidence] "Roman chamomile is also known as English chamomile. It is a perennial herb, the native home is the Iberian Peninsula and southern France. However, now it is found growing all over Europe, the Mediterranean region, North Africa, south-west Asia, and also in many countries in South and North America."

602	<b>Produces viable seed</b>	y
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"Flowers are visited by small muscid and syrphids flies (Kay & John 1993), and although plants are capable of reproduction by seed, flower-heads in large clonal and monomorphic colonies rarely do so and consequently depend on vegetative spread. Seed-set does appear to be much higher in genetically varied populations (Kay & John 1993), if given the chance to flower. When seed-set is high, seed viability is also high, with germination requirements consisting of a complex arrangement of alternating temperature and high light levels (Kay & John 1993)."

603	<b>Hybridizes naturally</b>	
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	McKenzie, R. J. (2001). Intergeneric hybridisation in New Zealand Gnaphalieae (Compositae). PhD Dissertation. University of Canterbury, Christchurch	[Experimental hybrids possible] "Intergeneric hybridisation in the Anthemis group (tribe Anthemideae) has also been investigated experimentally. Natural intergeneric hybrids between Anthemis, Matricaria and Tripleurospermum Sch.Bip. are recorded in Europe (Rothmaler, 1963; Kay, 1971a; Kay, 1971b; Mitsuoka and Ehrendorfer 1972; Stace, 1975). Mitsuoka and Ehrendorfer (1972) undertook a cytogenetic investigation of artificial intergeneric hybrids to evaluate intrageneric and intergeneric relationships and evolutionary mechanisms in the group. Their results supported the belief that the northern-hemisphere genera Anthemis, Chamaemelum, Matricaria and Tripleurospermum form a closely related group, but the results were not always consistent with other evidence. Reciprocal F 1 hybrids between Anthemis cotula and Chamaemelum nobile, for example, possessed a high level of chromosome pairing and pollen fertility, and backcross hybrids with the maternal parent were produced, suggesting the species have a close phylogenetic affinity; embryological, morphological and phytochemical evidence, however, suggests Chamaemelum is more closely related to Matricaria (Mitsuoka and Ehrendorfer, 1972; Heywood and Humphries, 1977)."

604	Self-compatible or apomictic	n
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"In the first year of growth, plants produce shoots that normally form a rosette of leaves which subsequently flower in the second year. <i>C. nobile</i> appears to be strongly self-incompatible."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"Flowers are visited by small muscid and syrphids flies (Kay & John 1993), and although plants are capable of reproduction by seed, flower-heads in large clonal and monomorphic colonies rarely do so and consequently depend on vegetative spread. Seed-set does appear to be much higher in genetically varied populations (Kay & John 1993), if given the chance to flower."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"Its primary mechanism of growth is by clonal spread, extensively creeping and rooting at the nodes (Hill et al. 2004), with vegetative spread measured at 10–15 cm per year or more (Kay & John 1993)."

Qsn #	Question	Answer
607	Minimum generative time (years)	2
	Source(s)	Notes
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"In the first year of growth, plants produce shoots that normally form a rosette of leaves which subsequently flower in the second year."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Australian Biological Resources Study. (2015). Flora of Australia Volume 37, Asteraceae 1. CSIRO Publishing, Melbourne	"Achenes obovoid, 1–1.5 mm long, with 3 slender pale ribs, grey-brown." ... "Grows in roadsides, waste areas and lawns." [Possibly. Thrives and occurs in heavily trafficked areas, although seeds lack means of external attachment]
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Dispersión: anemocoria"

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Small, E. (2000). <i>Culinary Herbs</i> . NRC Research Press, Ottawa, Canada	"Chamomile (both Roman and German collectively) has been ranked as one of the top selling five herbs in the US (Duke 1985)."
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012)."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	[Possibly seed contaminant of other crops. No direct evidence found to corroborate this classification] "Major Pathway/s: Contaminant, Crop, Herbal, Ornamental Dispersed by: Humans, Escapee"

Qsn #	Question	Answer
704	<b>Propagules adapted to wind dispersal</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Tabla 2. Especie, familia, densidad promedio (semilla.m-2) en cada humedal, origen, dispersión, ciclo de vida, tamaño de la semilla y propagación de las especies del BSG de los humedales Tibanica y La Vaca, Bogotá (Colombia). Origen: adventicia (ad), cultivada (cu), nativa (nv), naturalizada (nz). Dispersión: anemocoria (a), barocoria (b), explosión (e), hidrocoria (h). Ciclo de vida: anual (a), perenne (p). Propagación: semilla (s), vegetativa (v)." [Chamaemelum nobile - Dispersió = anemocoria (a)]

705	<b>Propagules water dispersed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August." [Not a riparian species]
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Dispersión: anemocoria"

706	<b>Propagules bird dispersed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Australian Biological Resources Study. (2015). <i>Flora of Australia</i> Volume 37, Asteraceae 1. CSIRO Publishing, Melbourne	"Achenes obovoid, 1–1.5 mm long, with 3 slender pale ribs, grey-brown." [Not fleshy-fruited]
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Dispersión: anemocoria"

707	<b>Propagules dispersed by other animals (externally)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Australian Biological Resources Study. (2015). <i>Flora of Australia</i> Volume 37, Asteraceae 1. CSIRO Publishing, Melbourne	"Achenes obovoid, 1–1.5 mm long, with 3 slender pale ribs, grey-brown." [No means of external attachment, although small size may facilitate adhesion to fur or in mud]
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Dispersión: anemocoria"

Qsn #	Question	Answer
708	<b>Propagules survive passage through the gut</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[Wind-dispersed] "Dispersión: anemocoria"

801	<b>Prolific seed production (&gt;1000/m2)</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"Flowers are visited by small muscid and syrphids flies (Kay & John 1993), and although plants are capable of reproduction by seed, flower-heads in large clonal and monomorphic colonies rarely do so and consequently depend on vegetative spread. Seed-set does appear to be much higher in genetically varied populations (Kay & John 1993), if given the chance to flower. When seed-set is high, seed viability is also high, with germination requirements consisting of a complex arrangement of alternating temperature and high light levels (Kay & John"
	Muñoz Romero, D. S., Morales Pisco, A. F., & González Pinto, A. L. (2017). Germinable seed bank in the terrestrial environment of two urban wetlands. <i>Colombia Forestal</i> , 20(1), 31-44	[16 ± 48 seeds/m2 recorded in this study] "Tabla 2. Especie, familia, densidad promedio (semilla.m-2) en cada humedal, origen, dispersión, ciclo de vida, tamaño de la semilla y propagación de las especies del BSG de los humedales Tibanica y La Vaca, Bogotá (Colombia)." [Chamaemelum nobile - Densidad (semillas.m-2) = 16 ± 48]

802	<b>Evidence that a persistent propagule bank is formed (&gt;1 yr)</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	"Common or garden seed bank experiments using soil taken from sites in Wales with large populations of <i>C. nobile</i> detected no germination, inferring a transient seed bank (Kay & John 1993)."

803	<b>Well controlled by herbicides</b>	y
	<b>Source(s)</b>	<b>Notes</b>
	U.S. Department of the Interior Bureau of Land Management. (1985). Northwest Area Noxious Weed Control Program Environmental Impact Statement. Oregon State Office Bureau of Land Management, Portland, Oregon	[Well controlled by Dicamba and Glyphosate] "Appendix E Susceptibility of Common Plants to Control by 2,4- D, Dicamba, Picloram, and Glyphosate Herbicides" [ <i>Chamaemelum nobile</i> - Dicamba = Good (G). One treatment per year maintains 85 to 94 percent suppression of top growth, or more than 95 percent of the plant species population is killed by two or three treatments. Plant is susceptible to the chemical; Glyphosate = Excellent (E). Over 95 percent of the plant species population is killed by a single treatment. Plant is highly susceptible to the chemical]

804	<b>Tolerates, or benefits from, mutilation, cultivation, or fire</b>	y
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Stroh, P.A. (2015). <i>Chamaemelum nobile</i> (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.	[Thrives and persists in heavily mowed, or grazed habitats] "Its semi-prostrate habit means that it is capable of persisting vegetatively in heavily grazed or mown swards, provided that artificial fertilisers are not applied, and in such situations it is not uncommon for it to comprise more than 50% of the vegetation cover."

<b>805</b>	<b>Effective natural enemies present locally (e.g. introduced biocontrol agents)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. (2023). Personal Communication	Unknown

**Summary of Risk Traits:**

*Chamaemelum nobile*, commonly known as chamomile, is a low perennial plant found in dry fields and around gardens and cultivated grounds in Europe, North America, and South America. It is a mat-forming perennial boasting finely divided, aromatic leaves and masses of small daisy-like flowers throughout the summer and into early fall. The feathery foliage exudes a ripe apple scent when bruised. It has become naturalized, and a potential weed in a number of locations, and could pose a moderate risk to higher elevation, open habitats in tropical island ecosystems, although specific impacts are unclear.

**High Risk / Undesirable Traits**

- Broad climate suitability in temperate regions
- Naturalized elsewhere (but no evidence in the Hawaiian Islands to date)
- A potential weed of disturbed areas, certain crops, and the natural environment, although specific impacts have not been reported.
- Other *Chamaemelum* species are invasive weeds.
- Potentially allelopathic
- Unpalatable to deer, and likely other browsing animals
- Toxic to dogs and cats if ingested.
- Tolerates many soil types.
- May cause allergic contact dermatitis to susceptible individuals.
- Reproduces by seeds and vegetatively by rooting at nodes.
- Reaches maturity in second growing season.
- Seeds dispersed by winds, possibly as a contaminant, and through intentional cultivation.
- Tolerates mowing and heavily grazed habitats.

**Low Risk Traits**

- Primarily a temperate species that may only be a risk at cooler, higher elevations in tropical island ecosystems.
- Although naturalized, and reported to be weedy, it is generally valued and intentionally cultivated as an herb.
- Unarmed (no spines, thorns, or burrs)
- Grows best in high light environments (dense shade may inhibit spread)
- Self-incompatible.
- Seeds not reported to form a persistent seed bank.
- Herbicides may provide effective control if necessary.

**Second Screening Results for Herbs or Low Stature Shrubby Life Forms**

(A) Reported as a weed of cultivated lands? Possibly. Evidence inconclusive.

(B) Unpalatable to grazers or known to form dense stands? Unpalatable to deer. Not reported to form dense stands.

Outcome = Evaluate

**TAXON:** *Chamaemelum nobile* (L.)  
*All.*

**SCORE:** 2.0

**RATING:** *Evaluate*