

Weed Risk Assessment: *Oenanthe pimpinelloides*

1. Plant Details

Taxonomy: *Oenanthe pimpinelloides* L. Synonyms: *O. thracica* Griseb, *O. gallaecica* Pau & Merino, *O. incrassans* Bory & Chaub, *O. angulosa* Griseb. Family Apiaceae.

Common names: meadow parsley, water-dropwort, carrot weed.

Origins: Native to Africa (Morocco), Temperate Asia (Georgia, Israel, Jordan, Lebanon, Syria, Turkey), Europe (Ukraine, Albania, Belgium, Bulgaria, Greece, Italy, Netherlands, Yugoslavia, France, Portugal, Spain, United Kingdom) (GRIN database).

Naturalised Distribution: Naturalised in New Zealand (North Island), Ireland (west and south) and Australia (South Australia, Mt Lofty Ranges) (Cunningham et al. 2003).

Description: *O. pimpinelloides* is an erect, glabrous, perennial, branched herb growing to 1.5m. It produces a rosette from which a solid, strongly grooved stem arises. The stem is leafless until summer. Lower leaves are bi-pinnate with a long petiole, upper leaves are pinnate with a blade as long as the petiole. Flowers are small, white and are arranged in umbels of 2-5cm diameter which form a larger umbrella-like structure. Bracts are 1-5, linear and unequal. Fruit is small at 3.5mm and cylindrical. Seeds have two hooks at one end. The root is a mass of large ovoid tubers which form away from the base of the stem (Cunningham et al. 2003, spookspring.com website).

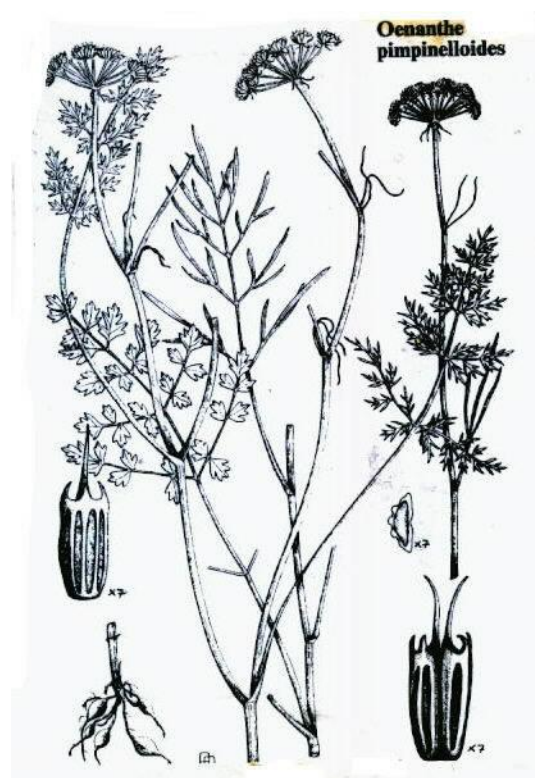


Biology and ecology:

Habitat. *O. pimpinelloides* occurs in dry or damp grassland, ditches or ponds and may also be found in poorly drained pastures. In Ireland, sparse infestations are occasionally found on well-drained soils. In New Zealand it is an aggressive and persistent weed of pastures and *Eucalyptus* plantations (McKenzie et al. 1998, Cunningham et al. 2003).

Life cycle. *O. pimpinelloides* begins as a rosette which puts out a flowering stem in spring. Flowering occurs in late spring to summer. Seeds germinate in autumn.

Reproduction and dispersal. Reproduction occurs via seeds and root tubers. Flowers are hermaphroditic, self-fertile and pollination is effected by insects. Seeds are hooked and may spread on the coats of animals or on water or in contaminated fodder or machinery. The plant also



reproduces vegetatively via tubers formed along the roots.

Hybridisation. There is limited information about hybridisation of *O. pimpinelloides*.

Competition. *O. pimpinelloides* is described as an aggressive and persistent weed in pastures and plantation forests in New Zealand (Mc Kenzie et al., 1998). This may be a function of its large, underground tubers that can sustain the plant for long periods and also allow it to recover from grazing. In Australia, it is known to replace pastures by out-competing desirable plants (Cunningham et al. 2003).

Harmful properties. *O. pimpinelloides* is grazed by sheep without apparent ill effect however many species in this genus are poisonous and a single report suggests *O. pimpinelloides* contains myristicine, a psychotropic substance (Plants for a Future Database).

Economic benefit: *O. pimpinelloides* has little economic benefit. The tubers are occasionally eaten for their starchy flavour.

2. Weed Risk

World weed status

O. pimpinelloides is naturalised in Ireland but is not described as a serious weed in the latter. In New Zealand it is known as a troublesome weed of pasture and plantation forestry.

Australian weed status

O. pimpinelloides is naturalised in SA. It was first recorded from a single paddock near the township of Meadows in 1971. A decade later it covered 8ha and by 1993 200 ha within 17km downstream of the original site were found to support the plant. It is not regulated in any state or territory and is permitted entry to Australia. *O. pimpinelloides* is listed by Cunningham et al. (2003) as one of 17 significant Australian agricultural weeds for which eradication is feasible at this time. Groves et al., (2003) note it as primarily a weed of agriculture or a ruderal weed.

Weed potential in Tasmania.

O. pimpinelloides is not naturalised in Tasmania.

Climate matching indicates the plant is likely to grow well in a range of Tasmanian environments, The following analyses describe the weed potential of *O. pimpinelloides* in Tasmania.

Weed risk assessment

Weed risk assessment undertaken by DPIWE involves use of a point scoring system devised by Pheloung (1996). *O. pimpinelloides* scores 23 on a scale that is positively correlated to weediness. The nominal score for rejection of a plant on this scale is 7 or greater (see Appendix 1 for risk assessment scoring).

Potential distribution of
Oenanthe pimpinelloides
in Australia using
CLIMATE (Pheloung,
1995)

3. Weed Impact Assessment

Weed impact assessment is based on the DPIWE scoring system designed for that *O. pimpinelloides* scores 4 points on a scale where 4 points or more indicates a plant has significant potential impact. The impact scoring system requires that questions be answered with a particular land use and likely density in mind. *O. pimpinelloides* was assessed for its potential impacts upon agriculture at medium density.

Economic impact. The economic impact of *O. pimpinelloides* in Tasmania is mostly relevant to agriculture, grazing enterprises in particular. Cunningham et al. (2003) estimate over \$8 000 million in production value is threatened by this plant. New Zealand data suggest the plant may also become a significant weed of Tasmanian eucalypt plantations (McKenzie et al., 1998).

Environmental impact: *O. pimpinelloides* is unlikely to become a significant environmental weed in Tasmania. Groves et al. (2003) describe it as primarily an agricultural weed.

Social impact. *O. pimpinelloides* is unlikely to have significant social impacts in Tasmania.

4. Management Feasibility.

Since *O. pimpinelloides* is not naturalised in Tasmania at this time, management feasibility is not an issue. However, maintaining freedom from *O. pimpinelloides* is highly dependent upon effective import prohibition, early detection and reporting of any occurrences and, community and industry education.

5. Declaration Recommendation.

O. pimpinelloides appears to have potential to establish, reach moderate densities and affect carrying capacity in Tasmanian grazing areas, particularly in wetter situations. It may also become a weed of eucalypt plantations and roadsides. Therefore it should be nominated for declaration

under the *Weed Management Act 1999*. This will support import prohibition and timely eradication of infestations. It will also assist national efforts to reduce the extent of this plant.

6. References.

Cunningham, D.C, Woldendorp, G, Burgess, M.B. and Barry, S.C., 2003, *Prioritising sleeper weeds for eradication: Selection of species based on potential impacts on agriculture and feasibility of eradication*. Bureau of Rural Sciences, Canberra.

Groves, R.H. (Convenor), Hosking, J.R., Batianoff, G.N., Cooke, D.A., Cowie, I.D., Johnson, R.W., Keighery, G.J., Lepschi, B.J., Mitchell, A.A., Moerkerk, M., Randall, R.P., Rozefelds, A.C., Walsh, N.G. and Waterhouse, B.M., 2003, *Weed categories for natural and agricultural ecosystem management*. Bureau of Rural Sciences, Canberra.

McKenzie, H., Davenhill, N., Gifford, H. and Hawke, A., 1998, Growth of *Eucalyptus nitens* after application of herbicide to control parsley dropwort. *Proceedings of the 51st New Zealand Plant Protection Conference*, pp. 241-244. New Zealand Plant Protection Society Incorporated.

Pheloung, P.C., 1995, *Determining the weed potential of new plant introductions to Australia*. A report commissioned by the Australian Weeds Committee. Agriculture Western Australia.

Pheloung, P.C., 1996, *Climate. A system to predict the distribution of an organism based on climate preference*. Agriculture Western Australia.

Plants for a future database at www.scs.leeds.ac.uk

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN), online database at www.ars.grin.gov/cgi-bin/ngps/html, National Germplasm Resources Laboratory, Beltsville, Maryland.

www.spookspring.com

Weeds Australia Database at www.weeds.org.au