

## Mini data sheet on *Delairea odorata* (Asteraceae)

Added in 2009 - Deleted in 2012

### Reasons for deletion:

*Delairea odorata* was added to the EPPO Alert List in 2009 and transferred to the List of Invasive Alien Plants in 2012.

### Why

*Delairea odorata* (Asteraceae, Cape ivy, syn: *Senecio mikanioides*) is a perennial evergreen vine originating from South Africa which is used as an ornamental plant, particularly for groundcover. Within the EPPO region, its distribution is still limited. Because this plant has shown invasive behaviour in North America and in Australia and is of limited distribution in the EPPO region, it can be considered an emerging invader in Europe.

### Geographical distribution

**EPPO region:** France, Ireland, Italy, Portugal (incl. Azores, Madeira), Spain (incl. Islas Canarias), United Kingdom.

**North America:** USA (invasive) (California, Hawaii, Montana, Oregon).

**Africa:** South Africa (native).

**Oceania:** Australia (invasive) (New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia), Federal States of Micronesia, New Zealand (invasive).

Note: the species is also recorded in North Africa, but no precise data could be found. There is a record of the species in Denmark, but its status is unknown.

### Morphology

*D. odorata* is a fleshy, perennial, evergreen vine, woody at the base, the stem can reach 3 to 6 m long. Roots can be 90 cm deep in the ground. Leaves are green, glabrous, alternate, broadly deltate to "ivy-shaped", 3-10 cm long, 3.6 cm wide with 3 to 10 lobes. Both leaves and stems store water. Flowers are yellow, grouped on terminal and axillary cymes, disk florets 4-5 mm long arranged in clusters, ray flowers absent. Fruits are achenes about 2 mm long, often with a pappus or a crown of hairs.

### Biology and ecology

*D. odorata* reproduces both vegetatively or through seed production. Vegetative reproduction can occur at any time when the nodes of the stem, stolon, or leaf petiole are in contact with the soil. Small fragmented pieces of 1.3 cm can root easily and quickly. *D. odorata* can also produce 40 000 seeds per plant which are dispersed by the wind, water and soil movement. Nevertheless this seed production has only been observed in South Africa and Australia, no viable seed is produced in species that have invaded the coasts of California (USA). It is thought that because the flowers of *D. odorata* are self-compatible, only a few genetic lines have been introduced, which inhibits viable seed production.

*D. odorata* is tolerant to drought and freezing. It can grow in full sun or in shade and can establish in dry as well as in moderately wet sites. It is usually found in fertile and high pH soils.

*D. odorata* has a rapid vegetative growth between the months of February and June and tends to dieback during dry periods when there is a lack of available water. The species spreads quite rapidly: in the Golden Gate National Recreation Area (California), the species colonized 3.6 ha in 1987, and expanded to 27.7 ha in 1996. In California, it now covers more than 200 000 ha.

### Habitats

In South Africa, *D. odorata* grows in moist mountain forests. Where it naturalized, it extended its habitat range and is found in coastal areas, riparian zones and wetlands, dry forests and moist forests, shrublands and ruderal habitats, and grows very well in early successional forests. Typically found below 200 m elevation, it prefers shady, disturbed sites with year-round moisture. According to the Corine Land Cover nomenclature, these habitats correspond to: natural grassland, mixed forests, broad-leaved forests, sclerophyllous vegetation (e.g. garrigue, maquis), inland wetlands (marshes,

peat bogs), continental waters (water courses, water bodies), banks of continental water, riverbanks/canalsides (dry river beds), road and rail networks and associated land, and other artificial surfaces (wastelands).

### Impacts

*D. odorata* can form dense vegetative groundcover mats that can prevent seeding of native plants. It can also smother native vegetation and affect regeneration, forming stands of over 75% cover and competing with other plants for water and nutrients. Native plant species richness can be reduced about 50 percent, with greater impact on annual than on woody perennial species. The weight of large masses of climbing vines can bring down trees. Higher trophic levels can also be affected, like several sensitive species of insects and predators. The dense vegetation can also displace burrowing shorebirds like little penguins (e.g. *Eudyptula minor*) by taking available space used for nesting. Furthermore, flood control function along streams is impacted by *D. odorata*. In riparian communities, it can increase soil erosion along watercourses due to its shallow root system not capable of holding soil. *D. odorata* also contains substances toxic to humans, mammals, and particularly to aquatic organisms, decreasing survival of fish and aquatic insects. When the plant is present in pastures, it also reduces forage quality.

### Control

Mechanical removal of *D. odorata* is difficult and time consuming and difficult since the vine can resprout from any node that is not disposed off properly. When using mechanical control, the species has to be dug out, a containment zone should be established to prevent further spread and all plant debris should be removed. Chemical control of *D. odorata* depends on location of the infestation, sensitivity of the associated species, and the surface covered by the plant. Application of chemicals at times when the plant is actively growing is recommended. Glyphosate and triclopyr are both effective in controlling the plant. Two applications every four months for several years are recommended to ensure proper control or eradication. Chemical control is therefore considered difficult. Research is currently being conducted between the USA and South Africa on a biological control program for *D. odorata*.

Considering the areas where this species is invasive (California, Australia), and its ecology, this plant is thought to have the potential to become invasive in the Mediterranean and Atlantic areas of the EPP0 region.

### Sources

Australia's Virtual Herbarium. <http://www.rbg.vic.gov.au/>

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Global Invasive Species Database. <http://www.issg.org/database/species/ecology.asp?si=1187&fr=1&sts=&lang=EN>

Hawaiian Ecosystems at Risk Project - *Delairea odorata*. [http://www.hear.org/species/delairea\\_odorata/](http://www.hear.org/species/delairea_odorata/)

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