Declared Plant Policy
Field Garlic (*Allium vineale*)

Field garlic (*Allium vineale*) is a perennial bulb weed of pastures and crops, formerly common and with the potential to taint flour and meat.

Management Plan for Field Garlic

**Outcomes**

- Minimise economic losses from contamination of agricultural produce by field garlic.

**Objectives**

- Eradicate any high-priority incursions found in generally uninfested regions.
- Prevent movement of propagules in produce.

**Implementation**

- Natural Resources Management (NRM) authorities to monitor the movement of produce to prevent dispersal of field garlic
- NRM authorities to ensure high priority outbreaks are controlled when detected.
- In the event of significant infestations occurring, NRM authorities to help landowners to develop action plans to minimise the contamination of produce.

**Regional Implementation**

Refer to regional management plans for further details.

<table>
<thead>
<tr>
<th>NRM Region</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide and Mount Lofty Ranges</td>
<td>Protect sites</td>
</tr>
<tr>
<td>Alinytjara Wilurara</td>
<td>Limited action</td>
</tr>
<tr>
<td>Eyre Peninsula</td>
<td>Limited action</td>
</tr>
<tr>
<td>Kangaroo Island</td>
<td>Protect sites</td>
</tr>
<tr>
<td>Northern and Yorke</td>
<td>Monitor</td>
</tr>
<tr>
<td>South Australian Arid Lands</td>
<td>Limited action</td>
</tr>
<tr>
<td>South Australian Murray-Darling Basin</td>
<td>Limited action</td>
</tr>
<tr>
<td>South East</td>
<td>Destroy infestations - regional alert</td>
</tr>
</tbody>
</table>

**Declaration**

To implement this policy, field garlic is declared under the *Natural Resources Management Act 2004* throughout the whole of the State of South Australia. The movement or transport of the plant on a public road by itself or as a contaminant, or sale by itself or as a contaminant, is prohibited.
Field Garlic policy

In all NRM regions except the South Australian Arid Lands and Alinytjara Wilurara, NRM authorities may require land owners to control field garlic plants growing on their land. NRM authorities in these regions are required to control plants on road reserves, and in the Adelaide and Mount Lofty Ranges, Kangaroo Island, Northern and Yorke, and South East regions may recover costs from the adjoining land owners.

Field garlic is declared in category 2 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow its movement or sale can only be issued by the Chief Officer pursuant to section 188. Under the Natural Resources Management (General) Regulations 2005, the transport or movement of grain for milling or wool for cleaning is exempt from the operation of sections 175 and the sale of wool or grain is exempt from section 177(2) if at the time of the sale the person believes on reasonable grounds that the purchaser will remove the plant from the wool or grain before any re-sale.

The following sections of the Act apply to field garlic throughout each of the NRM regions noted below:

<table>
<thead>
<tr>
<th>Sections of Act</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>175(1) Prohibiting entry to area</td>
<td></td>
</tr>
<tr>
<td>175(2) Prohibiting movement on public roads</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>177(1) Prohibiting sale of the plant</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>177(2) Prohibiting sale of contaminated goods</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>180 Requiring notification of infestations</td>
<td></td>
</tr>
<tr>
<td>182(1) Landowners to destroy the plant on their properties</td>
<td>X X X</td>
</tr>
<tr>
<td>182(2) Landowners to control the plant on their properties</td>
<td>X X X X</td>
</tr>
<tr>
<td>185 Recovery of control costs on adjoining road reserves</td>
<td>X X</td>
</tr>
</tbody>
</table>

Review

This policy is to be reviewed by 2020 or in the event of a change in one or more regional management plans for field garlic.

Weed Risk

Invasiveness

Field garlic produces a stalked inflorescence containing flowers, bulbils or a mixture of both. In its native range, there is a balance between sexual reproduction by flowers that form seeds and inflorescence bulbils that each replace a flower. However, seed is rarely produced in South Australia as natural selection in crops has favoured production of bulbils that are dispersed in grain.

The seeds, bulbs and bulbils are all spread by movement of agricultural produce, vehicles, animals, mud and water.

Impacts

Field garlic gives a strong garlic odour and flavour to agricultural produce, particularly cereal grain, grain products, milk and meat. The bulbils are difficult to remove from grain after harvest and contaminated grain is rejected at grain silos, but may be sold as stockfeed at a
Field Garlic policy

reduced price. The plant has the potential to have a significant impact on quality of produce due to contamination.

It is not an invader of native vegetation. There have been cases of poisoning caused by the consumption of field garlic, in large quantities and by some mammals. Dogs seem to be particularly susceptible.

Potential distribution

Field garlic prefers open sites in warm temperate regions. It occurs on a range of soils but prefers heavy fertile loams. Field garlic is cold hardy, tolerant of wet soils and often occurs on poorly drained, heavy soils of pastures and stream banks.

The potential distribution of field garlic is wide, encompassing the majority of the cereal/sheep zone of South Australia and the southern pastoral zone.

Field garlic is scattered throughout its potential habitat in the higher rainfall part of the cereal growing regions. It has not reached its ecological limits, due to its poor means of dispersal, relying on movement in fodder, soil and seed.

Feasibility of Containment

Control costs

A number of cheap herbicides routinely used in cereal cropping are effective against field garlic in South Australia. It has disappeared from some areas since the introduction of sulfonylurea herbicides in the 1980s.

Persistence

Although a heavy infestation of field garlic may contain as many as 50-100 bulbs per metre square, seeds are short-lived. It does not form a dormant propagule bank that can persist after the infestation is destroyed.

There is a strong economic incentive for cereal growers to control field garlic on their properties as its presence reduces the saleability of produce.

Current distribution

Field garlic is scattered throughout its potential habitat in the higher rainfall part of the cereal growing regions, due to its poor means of dispersal, relying on movement in fodder, soil and seed. A survey in 2004 found the largest proportion of infested properties on southern Yorke Peninsula and the eastern slopes of the Mount Lofty Ranges, with lower densities in the Mid-North, southern Eyre Peninsula, Kangaroo Island and the lower South East. Many areas within these regions are free of field garlic.

State Level Risk Assessment

Assessment using the Biosecurity SA Weed Risk Management System gave the following comparative weed risk and feasibility of containment scores by land use:
Considerations

Field garlic was introduced in the late 19th century as a grain contaminant. As its bulbils taint milk and flour and are difficult to remove from cereals, it was proclaimed for the whole state in 1939 and retained under subsequent legislation.

Due to its rarity and low impacts under current farming systems, field garlic now falls into the category of weeds to be monitored at State level. Control is generally left to the judgement of individual land owners. While sale and movement are prohibited uniformly across the State, regional actions vary according to the land uses in each region.

In the South East NRM region field garlic is treated as a regional alert weed and infestations are destroyed when found. Adelaide and Mount Lofty Ranges and Kangaroo Island regions aim to protect sites. In the Northern and Yorke region any infestations are monitored. Only limited action is required in the Eyre Peninsula, and South Australian Murray Darling Basin regions where field garlic is widespread but not a significant issue, and in the Alinytjara Wilurara and South Australian Arid Lands where there are no suitable habitats for it to infest.

Synonymy

*Allium vineale* L., Sp. Pl. 1: 299 (1753)


Taxonomic synonyms:
- *Allium assimile* Halácsy, Consp. Fl. Graec. 3: 249 (1904)
- *Allium compactum* Thuill., Fl. Env. Paris ed. 2: 167 (1799)
- *Allium laxiflorum* Tausch, Flora 12(1): 46 (1829)
- *Allium littoreum* Bertol., Aomoen. Ital. 241 (1819)
- *Allium sphaerocephalum* Crome ex Schltdl., Fl. Berol. 2: 249 (1824)

Other common names include crow garlic, false garlic, stags garlic, wild garlic and wild onion.