



Government
of South Australia

Declared Plant Policy

Blue mustard (*Chorispora tenella*)

Blue mustard poses a threat as an annual winter weed of broad acre crops and lucerne. Within Australia it is only known to occur in north-west Victoria. It is difficult to control and spreads readily as a seed and harvester contaminant. Blue mustard is similar to wild radish in its growth habit and appearance, but has bluish-violet petals.

Management Plan for Blue Mustard

Outcomes

- Minimise losses to grain and lucerne production from blue mustard.

Objectives

- Prevent entry and spread of blue mustard in South Australia.

Implementation

- Natural Resources Management (NRM) authorities to prevent movement of seeds or plants as detected.
- NRM authorities to detect and control incursions into South Australia.

Regional Implementation

Refer to regional management plans for further details.

NRM Region	Actions
Adelaide and Mount Lofty Ranges	Prevent entry or sale (Regional alert)
Alinytjara Wilurara	Prevent entry or sale (Regional alert)
Eyre Peninsula	Prevent entry or sale (Regional alert)
Kangaroo Island	Prevent entry or sale (Regional alert)
Northern and Yorke	Prevent entry or sale (Regional alert)
South Australian Arid Lands	Limited action
South Australian Murray-Darling Basin	Limited action
South East	Prevent entry or sale (Regional alert)

Declaration

To implement this policy, blue mustard 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, its entry to South Australia, or the sale by itself or as a contaminant is prohibited.

NRM authorities may require land owners to control blue mustard plants growing on their land. NRM authorities are required to control plants on road reserves and may recover costs from the adjoining land owners. In all regions, land owners are required to notify NRM authorities of blue mustard infestations on their land.

Blue Mustard policy

Blue mustard 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 blue mustard throughout each of the NRM regions noted below:

Sections of Act	Region							
	AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE
175(1) Prohibiting entry to area	X	X	X	X	X	X	X	X
175(2) Prohibiting movement on public roads	X	X	X	X	X	X	X	X
177(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X
177(2) Prohibiting sale of contaminated goods	X	X	X	X	X	X	X	X
180 Requiring notification of infestations	X	X	X	X	X	X	X	X
182(1) Landowners to destroy the plant on their properties								
182(2) Landowners to control the plant on their properties	X	X	X	X	X	X	X	X
185 Recovery of control costs on adjoining road reserves	X	X	X	X	X	X	X	X

Review

Success of the program will be measured by its effectiveness in preventing any outbreaks of blue mustard in South Australia. This policy is to be reviewed by 2020, or in the event of blue mustard becoming established in South Australia.

Weed Risk

Invasiveness

Blue mustard can establish in high densities in crops and is relatively tolerant of herbicides commonly used. It has staggered germination and a long reproductive period from a young age, resulting in a high seed set. The seed pods split into sections in a similar manner to wild radish. In the USA it is frequently spread as a seed contaminant and on harvesting machinery.

Impacts

Blue mustard is highly competitive and reduces crop yields in USA and southern Canada, where it is widespread particularly in winter wheat. Measured yield losses in winter wheat in the USA have ranged from 13-51% as weed density increases.

A field experiment comparing several crucifer weeds at Roseworthy, South Australia ranked blue mustard as having the second highest rate of increase in a wheat crop after Indian hedge mustard, based on germination, seedling survival and seed production rates.

Blue Mustard policy

Blue mustard has a sticky surface with an unpleasant odour that can contaminate milk if it is eaten by dairy cows.

Potential distribution

Blue mustard is native to Russia and southwestern and northern Asia. It has spread into eastern Europe. It has become widespread across the USA and southern Canada and has recently been recorded in Chile.

Blue mustard tolerates a broad range of moisture, temperature and soil conditions, including low nutrient soils.

Feasibility of Containment

Control costs

As blue mustard is an annual, control programs aim at preventing seeding and reducing the seed bank. It may not be effectively controlled by the herbicides routinely used on cereal crops, requiring an additional herbicide treatment to ensure its control or suppression. Its staggered germination and early flowering also makes timing of herbicide application challenging.

Persistence

Blue mustard is a prolific seed producer, and the seeds remain viable in the soil for many years.

Current distribution

Blue mustard is currently recorded as only occurring in north west Victoria near Swan Hill. It is not known to be present in South Australia

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:

Land use	Weed Risk	Feasibility of control	Response at State Level
Crop/pasture rotation	medium 76	very high 0	contain spread alert

Considerations

Risk assessment indicates containment as a management action; since the species is absent from South Australia, containment is best implemented by preventing its entry to the State or its establishment.

Blue mustard is a declared noxious weed in California. It is superficially similar in appearance to Turkish mustard, *Malcolmia africana*, which is locally naturalised in the upper north of South Australia but showed poor potential as a crop weed in the same Roseworthy experiment. Outside of Australia, blue mustard has been grown as a leaf vegetable.

Synonymy

Chorispora tenella (Pall.) DC., Syst. Nat. 2: 435 (1821).

Basionym:

Raphanus tenellus Pall., Reise Russ. Reich. 3: 741 (1776).

Nomenclatural synonyms:

Chorispermum tenellum R.Br., Hortus Kew. 4: 129 (1812).

Crucifera tenella (Pall.) E.H.L.Krause, Deutschl. Fl. edn 2, 6: 140 (1902).

Taxonomic synonyms:

Cheiranthus taxacifolius Schrank, Denkschr. Königl.-Baier. Bot. Ges. Regensburg 2: 164 (1818).

Other common names are beanpodded mustard, chorispora, crossflower, musk mustard, purple mustard, tennella mustard, Waitchie weed and Osaka purple mustard greens.

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Minister for Sustainability, Environment and
Conservation

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