Gorse

*Ulex europaeus*

**Plant Biology**

Gorse is a dense, prickly, perennial, evergreen legume which, if left undisturbed, can grow up to 4 m high and 3 m diameter.

**Stems**

Green when young, turning brown and woody when mature.

Stems are longitudinally ridged, hairy, and covered with spines and short branches.

All stems and branches terminate in a green spine up to 50 mm long, with deep grooves running along its length.

**Leaves**

Dark green, stalkless, narrow and stiff, resembling spines. Occurring in clusters along the branch.

6-30 mm long by 1.5 mm wide with a sharp spine at the tip. Spines and leaves have a waxy coating.

**Flowers**

Bright yellow pea-like flower 15-25 mm long with a distinct coconut-like fragrance.

**Seeds**

Seed pods are fine, densely haired oblong pods 10-20 mm long by 6 mm deep.

Pods are green when young, turning dark brown when mature.

Each pod contains two to six seeds measuring 3-4 mm across with a very hard green or brown seed coat and yellow appendage.

**Seedlings**

Seedlings have soft hairy grey-green ‘trifoliate’ (three-leaflet) leaves. These leaves are lost as the plant matures and spines develop from three months of age.

**Noxious weeds information**

Under the Catchment and Land Protection Act 1994 (CaLP Act) certain plants are declared noxious weeds in Victoria. These plants cause significant detrimental impacts to agricultural production, biodiversity and social values. All stakeholders need to play their part in preventing high-risk invasive plants from establishing and spreading.

In Victoria, noxious weeds are categorised for each catchment region into one of four categories under the CaLP Act:

**State prohibited weeds**

These weeds pose a significant threat to Victoria and when infestations occur they can reasonably be expected to be eradicated. The Victorian Government is responsible for their eradication.

**Regionally prohibited weeds**

These weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region. Land managers must take all reasonable steps to eradicate Regionally Prohibited Weeds on their land.

**Regionally controlled weeds**

These weeds are usually widespread and are considered important in a particular region. Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally Controlled Weeds on their land.

**Restricted weeds**

This category includes plants that pose an unacceptable threat to this State or other parts of Australia if they were to be sold or traded in Victoria. Trade of these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.

The high risk invasive plants declared as Regionally Prohibited Weeds are among the highest threats to regional biosecurity at a catchment scale.

The purpose of this fact sheet is to:

- Provide basic identification information on a Regionally Prohibited Weed
- Provide a summary of best practice control measures, hygiene and prevention information
- Inform landholders of their regulatory responsibilities
Impacts of Gorse

**Ecosystems and waterways**

Gorse competes with young trees and shrubs and hinders the growth of native understory species, in some cases displacing threatened species. A long-term effect of the plant’s presence is that the soil becomes more acidic and loses nutrients.

Gorse can be found in parks, reserves, riparian areas, bushland fringe, roadsides, townships and agricultural environments.

**Agricultural and economic**

Gorse is a major weed of agriculture, invading all pasture types and significantly reducing grazing capacity. It has the ability to exclude all other plants and greatly hinders access to stock and waterways.

Presence of gorse significantly reduces land value.

The plant is unpalatable to cattle, while sheep and horses will eat new growth and goats eat mature plants.

Gorse is a significant haven for rabbits, foxes, feral cats and mice.

**Social value and health**

Gorse is highly flammable and a significant fire hazard.

Roadside gorse is a particular threat as it reduces driver visibility, as well as displaces threatened species in patches of remnant vegetation.

Preferred habitat

Gorse favours temperate regions with rainfall in the range of 650 to 900 mm annually. It is very adaptable and grows in a wide range of soils, but prefers low fertility, acidic soils. It tolerates a high degree of shade and competition. Infestations are located along roadsides, creek banks, neglected areas and marginal forests.

In Victoria, gorse has been recorded growing throughout the state, except for the Mallee and parts of Gippsland. The heaviest infestations are in the Central Highlands around Ballarat.

Growth and spread

Gorse reproduces by seed and a mature infestation can produce up to 6 million seeds per hectare each year, which can remain viable in the soil for at least 25 years.

Seeds mainly fall around the plant, but during hot dry weather the pods can split open and eject seed up to 5 m away. Seeds are spread long-distance by movement in water, soil, machinery, footwear, livestock, birds and ants.

Seeds are hard and need some damage or scarification to the coat before they will germinate. This damage can be caused by fire, soil disturbance, insects, changes in soil moisture, being scraped by floodwaters or passing through an animal’s stomach. Seed will not establish below 8 cm of burial.

Germination occurs in autumn and spring and young plants flower at approximately 18 months of age. Flowers can be produced at most times of the year but usually appear in two distinct periods – spring and autumn. Flowers may be present on some bushes at other times under the right conditions.

Growth Calendar

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Gorse control methods

The main components to a successful gorse control program are:

- A long-term commitment from the land manager;
- Treating all plants before they set seed;
- The use of a combination of control methods;
- To be persistent and regularly follow up with inspections of previous season’s work;
- Revegetation and a change in the land use practices that allowed gorse to spread and grow.

Grubbing/Mechanical removal

Physical removal of plants by hand or with machinery such as excavators, dozers, bobcats and tractors.

Be aware that:

- Erosion may occur on exposed areas if not revegetated.
- Gorse can re-shoot from roots and stumps left in the ground.
- Gorse can re-grow from plant material if sufficiently moist.
- Plants are more easily removed if soil is moist.

Mulching

This method suppresses regrowth and reduces the height of the bushes for follow up spraying.

Pros & cons:

- It reduces the size of bushes with little soil disturbance.
- The fire risk of gorse will be significantly reduced.
- This technique alone will not kill gorse.
- It improves access for a range of follow up treatments and enables more effective chemical treatment.
- It stops seed production if done prior to or during flowering.

Cultivation (Ploughing or Rotary Hoeing)

Cultivation is ideal for removing large infestations of seedlings or small to medium sized bushes from open areas.

Be aware that:

- Cultivation can stimulate germination of seeds.
- You will need to rake the area to remove excess plant material.
- You will need to establish competitive pastures or revegetate with native trees, shrubs or grasses.
- This technique alone will not kill gorse.

Burning

Burning is not an effective or reliable method of control on its own, but can be useful in reducing the above ground plant material and seed bank as a follow up to other treatment methods. The hotter the burn the better the result as an intense fire will destroy much of the seedbank and bushes, whereas a cool burn will reduce the bulk and germinate much of the seed on the ground.

Note: burning after chemical application is not recommended by most chemical manufacturers for at least 12 months.

Be aware that:

- Fire restrictions may be in place (if unsure, contact the CFA).
- The fire may be difficult to control.
- You need to notify your neighbours before burning.
- Follow up treatment with another control method is needed as burning alone will not destroy the gorse.
- Fire may cause additional problems such as increased erosion potential and further invasion by weeds.
- Fire can travel underground in the roots of gorse and burn unnoticed.

Biological Control

Natural enemies of gorse include the seed weevil, the gorse spider mite, the gorse thrip and the soft shoot moth. Their combined impact may reduce the abundance, growth rate and seeding capacity of gorse, however they will not eradicate gorse. Biological control is best suited for use in areas where the application of conventional control methods is inappropriate due to practical or environmental constraints.
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Chemical Control

Chemical control is extremely effective in controlling gorse. It can be used on its own or in conjunction with several methods above.

Under Victorian legislation there are controls on the use of agricultural chemicals and it is the responsibility of the user to be familiar with this legislation. Some chemicals require the user to hold an Agricultural Chemical Users Permit (ACUP). A guide to using agricultural chemicals in Victoria can be obtained from Agriculture Victoria, as well as a list of sensitive areas.

Note: choose only products registered for use in your situation and always read the label and follow the instructions carefully.

Pros & cons:
- Spraying can be effective on both large and small infestations.
- More than one application will be needed to kill all the bushes in large infestations.
- Chemical control methods will not destroy the seed bank.
- Before you spray you will need to consider the weather conditions and your proximity to vineyards, organic growers crops (amongst others) and other sensitive areas.

Pros & cons:
- It reduces the amount of chemical required.
- Stems require painting immediately after cutting.
- It will need to be done prior to flowering and seeding.
- This method is suitable for small infestations only as it is labour intensive.

Cutting and Painting with Herbicide

Stems may be cut with a brushcutter or handsaw.

Further Information

Visit the Victorian Gorse Taskforce website www.vicgorsetaskforce.com.au and read the notes and guides
Contact your local Landcare group for further assistance and support

References:
- Department of Primary Industries, Regionally Prohibited Weed Information Sheet – Gorse, 2010.

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