

Introduction

Gorse is New Zealand's most widespread and well known brushweed. Once established it rapidly forms dense infestations which severely reduce stock-carrying capacity on farms. In production forests, gorse competes vigorously with newly established trees and restricts access for silvicultural operations. Dense patches can also present a fire hazard, as well as providing cover for pests such as rabbits and possums. Control of established infestations is expensive and due to the long-lived nature of the seed, needs to be ongoing to prevent reversion to new infestations. Gorse hosts nitrogen fixing *rhizobium* however, and can improve soil fertility. It can also function as something of a nurse species for the regeneration of native forest.

PLANT PEST STATUS

GORSE IS A BOUNDARY CONTROL PLANT PEST IN THE BAY OF PLENTY REGION (ENVIRONMENT B·O·P REGIONAL PLANT PEST MANAGEMENT STRATEGY). LAND OCCUPIERS ARE REQUIRED TO CONTROL ALL GORSE PLANTS GROWING WITHIN 10 METRES OF NEIGHBOURING PROPERTIES CLEAR OF OR BEING CLEARED OF GORSE.

Origin

Gorse is a native of Western Europe, and is now widely spread throughout the world, particularly in temperate regions. Introduced to New Zealand as a hedge plant by early British settlers, it rapidly spread from its original plantings and is now widespread.

Description

Gorse is a woody, deep-rooted perennial legume, capable of growing to four metres high. Numerous small green leaves form hard spines up to 5 cm long. Bright yellow flowers emerge in autumn and spring and plants produce large quantities of seed. The hard-coated seeds are spread up to 6 metres by an explosive opening of the pods in mid summer. Seed can also be spread by soil and water movement or contaminated machinery. Seeds remain viable in the soil for over thirty years, forming seed banks of up to 20,000 seeds per square metre of soil. Well suited to growing in low-fertility soils, gorse readily

establishes over disturbed sites. Germination of the seed is stimulated by fire.

Control methods

Effective gorse control may require a combination of methods. Control strategies should have specific objectives. These may be eradication, temporary suppression to allow the establishment of forestry or control along property boundaries.

Planning and long-term management is essential to ensure the success of any control programme. As with all weeds, prevention is better than cure and a healthy, well-fertilised sward of pasture that is not overgrazed or pugged will be more resistant to gorse invasion than poorly managed pasture. The best return on gorse control expenditure will be from controlling isolated or scattered gorse on relatively clear country. Environment B·O·P Plant Pest Officers are available to advise on control methods to suit individual situations. All gorse control operations will require follow up treatment for the best results.

Biological Control

A number of insects have been introduced into the Bay of Plenty for the control of gorse. Biological control is a long-term control method that reduces the vigour of infested plants. Insects are being spread as they become available and can be obtained by contacting a Plant Pest Officer who will advise on their suitability for any particular infestation.

Mechanical Control

Clearance by tractor and rotary slasher, bulldozer and blade/rootrake or roller/crusher can be very cost-effective. To get the best result, mechanical control



Gorse produces distinctive yellow flowers in autumn and spring

must be carried out in conjunction with a pasture improvement programme. Burning may be appropriate to remove slash or as a strategy for encouraging gorse seed germination, prior to mob stocking with sheep or overall application of herbicide. Additional fencing (and supply of stock water) may also need to be considered as part of any large-scale control programme. Any significant land-clearing operations involving soil disturbance may require a resource consent prior to commencement. Consult an Environment B-O-P Consents Officer or Soil Conservator before commencing operations.

Stump Treatment with Herbicide

Cutting gorse with a scrub cutter or chainsaw and treating the stumps with a herbicide mix, although labour-intensive, is a very cost-efficient and effective method for eradicating isolated plants. Plants should be cut as close to the ground as possible. Freshly-cut surfaces and all remaining bark can then be treated with the mix applied through a spray bottle or knapsack sprayer. The addition of a surfactant (e.g. Pulse®, Boost™) will aid the penetration of herbicide. Suitable herbicides and dilution rates for stump treating are;

Tordon Brushkiller® or **Grazon®**

1 part to 20 parts water (50 ml/litre water)

Roundup® or a similar glyphosate herbicide

1 part to 5 parts water (200 ml/litre water)

Overall Spray Application

A number of herbicides are available for the treatment of gorse. The most suitable herbicide will depend on the time of year, the stage of growth of gorse, the chosen application method and what pasture-renewal programmes may be intended. Generally the most reliable results are obtained when gorse is sprayed between November and February. Herbicides can be applied by knapsack or mistblower for smaller infestations, gun and hose units for larger infestations and aerial application where warranted. When spraying herbicide it is important that good coverage is obtained – all foliage through to the centre of the plant should be wet to the point of runoff. Marker dyes can be used to indicate the level of coverage. To improve herbicide uptake, use a penetrant such as Pulse® or Boost®, or a surfactant like Freeway. Suitable herbicides and application rates are:

Roundup® or a similar glyphosate herbicide

Knapsack: 100 ml to 10 litres of water + Pulse®

Handgun: 1 litre to 100 litres of water + Pulse®

Grazon®:

Knapsack: 6 ml per litre of water
Handgun: 200-300 ml per 100 litres of water.

The addition of Boost® will improve results in plant stress conditions (drought or insect attack)

Aerial: 10 litres per hectare

Tordon® Brushkiller:

Knapsack: 6 ml per litre of water
Handgun: 250-300 ml per 100 litres of water
Aerial: 10 litres per hectare

Escort®:

Knapsack: 5 g per 10 litres of water
Handgun: 20 g per 100 litres of water + Pulse®, Boost®, or Freeway at 100 ml per 100 litres of mix.

Trounce®:

Handgun: 170 g + 3 g Escort® per hectare, + Pulse®, Boost® or Freeway
Aerial: 4-7 kg + 160-260 g Escort® per hectare, plus Pulse®, Boost® or Freeway.

Trounce® Gorsekiller:

Handgun: 350 g per 100 litres of water
Aerial: 10-14 kg/per hectare

Other herbicides that will give control of gorse include: Activated Amitrole, Amitrole, Radiate™ and Touchdown®

CAUTION: When using any herbicide read the label thoroughly to ensure that all instructions and safety requirements are followed.

Further Information

For further information contact a local Environment B-O-P plant pest officer on freephone 0800 ENVBOP (368 267)

Environment B-O-P offices located at:

6 Rata Street Mt Maunganui
1125 Arawa Street Rotorua
5 Quay Street Whakatane
25 Church Street Opotiki

Email: info@envbop.govt.nz

Information in this fact sheet regarding herbicides does not necessarily appear on the labels of the products concerned. Environment B-O-P does not accept liability for any damages that may arise from use of chemicals at non-standard rates. Mention of product trade names implies neither endorsement of those products nor criticism of similar products not mentioned.

This fact sheet was prepared by Richard Mallinson
Photograph courtesy of Auckland Regional Council

Environment B-O-P
P O Box 364
WHAKATANE