

## ● Woolly Nightshade (*Solanum mauritianum*)

### Introduction

Woolly nightshade, also known as tobacco weed, flannel weed or kerosene plant, is a most undesirable plant due to its invasive nature. It can form dense stands, crowding out and suppressing all other plants. It invades pastoral land, native forest margins and urban areas.

### Pest Plant Status

In the Bay of Plenty region woolly nightshade is classified as a **Progressive Control Pest Plant**. (Refer to Environment Bay of Plenty's Regional Pest Management Strategy.)

Land occupiers are required to control woolly nightshade on their properties. Assistance may be available from Environment Bay of Plenty by way of approved programmes. It is banned from sale, propagation and distribution within the Bay of Plenty region.

It is suspected of poisoning livestock and is moderately toxic to humans, especially children. On contact with the plant, dust is given off which irritates the skin, eyes, nose and throat.

### Origin

A native of Brazil and Uruguay, woolly nightshade was brought to New Zealand as a garden plant, and as early as 1883 was recorded as growing wild around Auckland. Since then it has spread throughout Northland, Auckland, Bay of Plenty and parts of the Waikato.

### Description

Woolly nightshade is a shrub or small tree up to 10 m in height with a trunk commonly up to 20 cm in diameter. The leaves are oval, greyish-green on the upper surface and white to yellowish green on the lower surface, and are densely covered with felt-



*Woolly nightshade foliage, flowers and fruit. Most fruiting occurs throughout late spring and summer.*

like hairs. This “woolly” or “felty” appearance has given rise to the names woolly nightshade and flannel weed. The leaves are commonly 10 to 25 cm long x 3.5 to 10 cm wide and have a very pungent smell, specially when rubbed or crushed.



*Woolly nightshade flowers through the year.*



*Woolly nightshade may form dense stands, crowding out and suppressing all other plants.*

The flowers have five purple lobes with a yellow centre, and are 1.5 to 2 centimetres in diameter. They can appear in clusters at the ends of branches almost year round and turn into round berries one centimeter in diameter. The berries are initially green but ripen to a yellow colour several weeks after the flowering period. Woolly nightshade flowers throughout the year, although the majority of fruiting will occur late spring–summer.



Cut and inject using the "vacchi" gun.

### Control Methods

Environment Bay of Plenty pest plant officers are available to advise on control methods suitable to each particular situation. Many brushweed herbicides do not control woolly nightshade, and control methods should allow access for follow-up control of seedlings. For example, chainsaw felling of large woolly nightshade trees in blackberry will hinder access to seedlings growing six to 12 months later. Complete removal, or a control method that leaves dead plants standing, would avoid this problem.

### Stem-cut and inject

This method is generally suitable for scrubland, plantation forestry and bush margin infestations.

Woolly nightshade plants with a diameter of five centimetres or more are ringbarked by applying downward cuts with a machete or tomahawk, below the lowest branch and ideally within five to 10 centimetres of ground level. Cuts should overlap to cover the full circumference of the stem.

Just two centimetres of uncut bark is enough to allow part of the tree to survive. Rural farm merchandise retailers supply stock vaccination packs which can be used for "cut and inject" herbicide application. These packs consist of a two litre plastic container and hose connected to a "Vacchi" type stock vaccinator gun. The needles in the vacchi gun pack are NOT required. Alternatively, an oil can or plastic trigger sprayer are suitable applicators for a small number of plants.

Herbicide is applied to the point of run-off into each downward cut around the tree's circumference.

Suitable and cost-effective herbicides for stem-cut and inject method are:

Glyphosate (e.g. Roundup®)

use neat

Tordon® Gold

use neat

Amitrole

use neat

Herbicides are used neat for the cut and inject method i.e. they are not watered down.

### Stump Treatment

This is suitable for scattered smaller plants or where vegetation has been totally removed.

Stumps should be no higher than five centimetres above ground level. Herbicide mixtures must totally cover the top and sides of the cut stumps to ground level.

Note: 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® Gold

1 part to 10 parts water (100 ml/L water)

Glyphosate (e.g. Roundup®)

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

Tordon® Brushkiller

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

Amitrole

1 part to 10 parts water (100 ml/L water)

Grazon®

1 part to 20 parts diesel (50 ml/L diesel)

Note: Grazon/diesel mixtures must be agitated.



Freshly cut stump ready for herbicide treatment. Herbicide mixture must cover the top and sides of the cut stump.



### Overall Spray Application

Overall spray application with the following recommended herbicides is most suitable for smaller woolly nightshade plants.

Although effective for larger plants the previously described control methods are recommended, i.e. stem-cut and inject or stump treatment.

**Seek the advice of a pest plant officer for your particular situation or property before implementing a spray programme.**

Total coverage of leaf surfaces is required for good control. Spray drift control additives such as Lo-Drift™ and 38F® are recommended.



*Full spray coverage gives good control.*

Suitable herbicides and water rates are:

Tordon® Gold

100 ml to 10 L water

Amitrole

200 ml to 10 L water

Tordon® Brushkiller

25 ml to 10 L water

All label precautions concerning the use of herbicides must be followed and suitable precautions taken to prevent skin contact of these chemicals or inhalation of spray mist.



*When spraying any herbicide, use equipment in good condition and wear protective clothing.*

### Mechanical Removal

The following methods of mechanical removal have proven to be successful, but note that stumps or root fragments left in the soil with bark attached will coppice and regrow. Stump treatment or spraying of regrowth is therefore necessary.

Desirable plant species should be established at sites where soil has been disturbed, e.g. over sowing with a rye grass/clover mix, planting of native or other shrubs. These species will eventually suppress germination of woolly nightshade and other pest plant seeds.

Any significant land clearing operations involving soil disturbance may require Environment Bay of Plenty consent before you begin.

### Manual

For seedlings and small plants – simply pull or dig out, preferably when soil is damp. Shake *all* soil from the root mass.

### Tractor and Snig Chain

Where accessible, large individual plants may be completely removed by this method.

### Tractor and Rotary Slasher

Where topography is suitable this method is very successful, especially where woolly nightshade (and gorse) are well established. Follow-up mulching and/or spraying of regrowth is essential.

### Bulldozer and Blade or Root-rake

Very effective for large scale infestations. Care must be taken to leave top-soil on-site. This method is not suitable for steeper country prone to erosion, and is best undertaken in late summer to allow autumn oversowing of disturbed sites.



*A heavy tractor and rotary slasher clearing woolly nightshade.*

### Bulldozer and Roller-crusher

Suitable for steeper country. Considerable regrowth from stumps and seedling establishment is likely, so follow-up chemical control is needed.

### Digger or Excavator

Suitable for smaller sidelings or where selective removal of woolly nightshade required.



*Scrub crushing rollers can be used to clear woolly nightshade.*

## Summary of Herbicides and Application Methods for Woolly Nightshade Control

### Glyphosate® (e.g. Roundup®)

Stem cut and inject:  
use neat  
Stump swabbing:  
1 part to 5 parts water plus  
surfactant (e.g. Pulse®)

*(Glyphosate is NOT suitable for overall spraying).*

### Tordon® Gold

Stem cut and inject:  
use neat  
Stump swabbing:  
1 part to 10 parts water  
Spray Application:  
100 ml to 10 litres water

### Amitrole

Stem cut and inject:  
use neat  
Stump swabbing:  
1 part to 10 parts water plus  
surfactant (e.g. Pulse®)  
Spray Application:  
200 ml to 10 litres water

### Tordon® Brushkiller

Stump swabbing:  
1 part to 20 parts water plus  
surfactant (e.g. Boost®)  
Spray Application:  
25 ml to 10 litres water

### Grazon®

Stump swabbing:  
1 part to 20 parts water

Note: Woolly nightshade is often found amongst other brushweeds such as gorse. Many herbicides commonly used for spraying those brushweeds will not control woolly nightshade. In this situation add Tordon® Gold or Tordon® Brushkiller to the spray mix.



*Woolly nightshade fruit. Birds such as waxeyes and blackbirds spread the majority of seed. Three year old woolly nightshade plants have been recorded as producing more than 100,000 seeds each year.*

Woolly nightshade grows from seed to seed-bearing maturity very quickly. No matter what control method is used, follow-up control of seedlings will be required at least every six months until the soil seed bank is exhausted and no further plants are found.

**CAUTION: When using any herbicide READ THE LABEL thoroughly. Follow all instructions and safety requirements.**

Information in this fact sheet regarding herbicides does not necessarily appear on the labels of the products concerned. Environment Bay of Plenty does not accept liability for any damage 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.



For further information and advice, contact your local pest plant officer at Environment Bay of Plenty:

Telephone: 0800 ENV BOP (368 267)  
Facsimile: 0800 ENV FAX (368 329)  
Pollution Hotline: 0800 73 83 93  
Email: [info@envbop.govt.nz](mailto:info@envbop.govt.nz)  
Website: [www.envbop.govt.nz](http://www.envbop.govt.nz)  
Address: 5 Quay Street, P O Box 364, Whakatane, New Zealand

This fact sheet was prepared by Environment Bay of Plenty's Pest Plant Section

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