

# BIOSECURITY ON THE FARM

## A FARMER'S GUIDE TO PREVENTING WEED INVASIONS

**Weed infestations can lead to financial loss for farmers and horticultural producers, and seriously harm our natural environment. This guide provides strategies for preventing new weed infestations via human activities.**

Many pest plants and weeds are spread by natural means such as birds and wind and water. However, farming practices and other human activities can also spread weeds. For example, stock feed originating from overseas or even just from outside the Waikato region increases our biosecurity risks. It might bring in seeds from plants previously not known to be in the Waikato or New Zealand and spread weeds.

In the Waikato region, 75 plants are legally classified as 'pests' and are subject to control or restrictions under the Waikato Regional Pest Management Plan 2014-2024 (RPMP). The RPMP requires landowners or occupiers to control pest plants to prescribed standards, using suitable control methods. Besides these classified pest plants, there are also many other plants with 'weedy' characteristics which have adapted so successfully to our environment that they could adversely affect the environment and the region's economy.

**Controlling widespread weed infestations can be costly. Stopping new weed infestations taking hold is often the most economic strategy.**



Alligator weed infestation on a Waikato farm.

## Tips for preventing weed invasions on your farm

### 1. Be weed aware

- For a list of significant pest plants in your area, call Waikato Regional Council on 0800 BIOSEC (0800 246 732).
- Order pest plant factsheets from Waikato Regional Council on 0800 BIOSEC (0800 246 732) or download free at [www.waikatoregion.govt.nz/plantpests](http://www.waikatoregion.govt.nz/plantpests).
- Tell your staff about weeds and pest plants in your area.

### 2. Clean machinery and equipment

- Remove soil, seeds and vegetation from all machinery and equipment before entering and after leaving your property (this includes diggers, harvesting equipment, ploughs and undersowers).
- If you've used equipment in weed infested areas on your property, clean it before moving it into weed free areas.
- Always use reliable contractors and ask if they follow weed hygiene practices as outlined in the Keep It Clean machinery hygiene guide. You can view or download this guide free at [www.waikatoregion.govt.nz/Documents/Keepitclean](http://www.waikatoregion.govt.nz/Documents/Keepitclean).



### 3. Buy weed free animal/stock feed

- Ask the seller:
  - to guarantee feed such as hay and silage is weed free
  - if you can inspect the crop before it is harvested
  - about any past weed problems.
- If feed comes from overseas, only buy from reputable dealers and ask for a guarantee that it is weed free:
  - Inspect the feed on arrival. If you're unsure of weed presence, contact Waikato Regional Council on 0800 BIOSEC (0800 246 732) or your farm consultant.
  - Keep records of where the product came from and where it is fed out.
  - If in doubt, restrict feedout areas to reduce the risk of spreading weeds across your property.
  - Regularly check feed storage and feedout areas for new or unusual plants.



### 4. Buy weed free soil, metal and sand

- Ask the seller to guarantee the material is weed free.
- Inspect the material on arrival.
- Keep a record of where the product came from and where it is used.



### 5. Treat your property boundary like a border

- Movement of livestock, people and vehicles can spread weeds. Seeds can be on boots or animal hooves.
- Do not allow people onto your farm to fish for eels, as they may inadvertently bring the pest plant alligator weed with them.
- Be aware that roadsides are a common source of new weeds, often spread by roadside mowers. Do not graze roadsides or harvest roadside vegetation.
- Check roadside boundaries regularly and control weeds such as yellow bristle grass before they seed.
- Establish weed barriers (e.g. hedges or unmown grasses) along road frontages to reduce weed invasion from the roadside.
- Avoid spraying along fencelines, leaving bare ground.



### 6. Protect your waterways

- Ensure diggers are completely free of soil and vegetation before entering your property.
- Ensure waterway users such as duck shooters have cleaned their equipment before entering your property.
- Ensure machinery is washed down away from any watercourse or water body. A buffer of at least 30m is desirable to ensure run off into waterways is avoided.



### 7. Do regular inspections

- Regularly inspect your property for unfamiliar new weeds.
- Check areas of highest risk such as entrances, vehicle races, boundaries and feed or soil/aggregate storage areas.
- Inspect waterways at least once a year.



## Weeds to watch out for

### Alligator weed

*Alternanthera philoxeroides*

#### Why it's a problem

- One of the world's worst weeds.
- Toxic to livestock.
- On land, takes over pasture and crops.
- In water, rapidly takes over waterways and drains, impeding water flow and increasing flooding.
- Very difficult to eradicate once established.

#### Distribution

Limited in the Waikato region, but increasingly spreading onto farms.

#### How it spreads

- Small pieces of broken stem or root can easily form new plants.
- Does not set seed in New Zealand.
- Spreads onto farms through movement of soil and agricultural equipment (harvesters, diggers and so on) and in eel or fishing nets.

#### Identification

- Variable form – can be difficult to identify.
- Low growing non-woody perennial.
- Leaves in opposite pairs or whorls.
- Flowers papery white, clover-like over summer.
- Hollow stems, often reddish in colour.
- Stem and leaf size varies considerably. Can be very compact in lawns or grazed pasture, much larger when growing in water.

Waikato Regional Council has a control programme for alligator weed. If you have seen this plant, please call 0800 BIOSEC (0800 246 732) and Waikato Regional Council will work with land occupiers to develop a property specific management plan.



### Noogoora bur

*Xanthium strumarium*

#### Why it's a problem

- Invasive, competing with pastures and crops.
- Seeds poisonous to livestock, horses and poultry.
- Burs get caught in livestock fur/wool and contaminate wool.

#### Distribution

Noogoora bur is only known to be present on a few properties in the Waikato region. Infestations found in the Bay of Plenty and Auckland regions have the potential to spread into the Waikato.

#### How it spreads

- Seed dispersed by burs (seed capsules) clinging to wool, fur, clothing and machinery.
- Could be spread to the Waikato by agricultural equipment or crop movement.

#### Identification

- Annual, growing to 1m.
- Produces hard brown woody burs, covered in numerous hooks and spikes.

Waikato Regional Council is responsible for managing Noogoora bur in the region. If you think you've seen it, call 0800 BIOSEC (0800 246 732).



## Broomcorn millet

*Panicum miliaceum*

### Why it's a problem

- Aggressive, can grow rapidly and easily outcompete most crops.

### Distribution

Not yet known in the Waikato but rapidly establishing in eastern parts of the North Island, particularly amongst maize and sweetcorn crops.

### How it spreads

- Seed dispersed via agricultural equipment, stock feed and crop movement.

### Identification

- Annual grass growing to 2m.
- Broad leaf, up to 2cm wide, with a hairy stem.
- Large, black seeds in a large bushy flower cluster resembling a 'witch's broom'.

If you think you've seen this weed on your property, call 0800 BIOSEC (0800 246 732) for professional advice on how to manage it.



## Velvetleaf

*Abutilon theophrasti*

### Why it's a problem

- Highly invasive, competes with agricultural crops, especially corn and maize.
- Seedlings are vigorous, and the plant grows rapidly in the first few months after germination.

### Distribution

A national outbreak in 2016 was linked to imported fodder beet seed infested with velvetleaf. However, Waikato infestations have also been linked to maize crops and maize silage, machinery, and stock movement.

### How it spreads

- Seeds are spread by water, farm machinery when harvesting grain (e.g. maize), through livestock, and as a contaminant of grain.

### Identification

- Broad leaved herb that can grow 1 to 2.5m tall.
- Large, circular to heart-shaped leaves which are velvety and soft (hence the name velvetleaf).
- Buttery coloured flowers, spring to autumn.
- Large seed capsules holding distinctive black seeds.

Landowners or occupiers are required to control velvetleaf on their property. Cultivation or harvesting equipment which may have come into contact with it must be decontaminated.



## Yellow bristle grass

*Setaria pumila*

### Why it's a problem

- Invasive grass which rapidly takes over pastures.
- Low feed value.
- Cattle may avoid grazing it when in seed due to the 'bristle' on seed heads.

### Distribution

Increasingly found along roadsides in the Waikato region, especially around marker pegs and other areas that have been previously sprayed to remove vegetation. It is found in many maize cropping properties – often first seen in the crop 'headlands'. Spread onto pastures is being increasingly reported.

### How it spreads

Seed is dispersed in cattle dung and by:

- roadside mowing
- movement of crops
- contaminated machinery.

### Identification

- Annual summer grass 25 to 45cm high.
- In open pasture, leaves often grow close to the ground.
- Leaf sheath is flattened, hairless and often turns reddish purple.
- Seed head is a cylindrical spike with numerous bristles attached to spikelets – creating the 'bristle-like' structure of yellow bristle grass. Seed heads start green but turn a distinctive golden-brown.

