



# Japanese Knotweed

## What is Japanese Knotweed?

Japanese Knotweed, also known as Donkey's Rhubarb or Mexican bamboo (scientific name *Fallopia japonica*), was introduced to Britain from the Far East in 1825 as an ornamental plant.

## Why is it a problem?

It is the most invasive plant in Guernsey (and in Britain). It spreads rapidly especially next to streams and takes over native plants and flowers. It can also be seen in gardens and on derelict areas and can pose a problem to property developers due to structural damage to buildings caused by its roots and stems. The main problem is that it spreads so easily through fragments of the roots (rhizomes) in contaminated topsoil or by stem cuttings in garden waste. Knotweed can grow in almost any habitat and it is very difficult to control once established. It damages wildlife habitats and can "take over" large areas of land.



## What does Japanese Knotweed look like?

In Spring red shoots appear with rolled up reddish purple leaves. The plant grows rapidly, up to 10 cm a day and the leaves unfurl becoming lime green and later darkening to mid green colour. The stems elongate and look similar to bamboo with prominent nodes but with stems with reddish-purple speckles. Each leaf is carried on a short stem at a different level from the next leaf below or above. Sometimes the young leaf has a subtle stripe. In summer the mature plant reaches up to 3metres in height. Flowering occurs in late summer / autumn with clusters of creamy white flowers. Rarely black seeds are produced, but this is a plant that reproduces itself vegetatively.

In winter the plant dies back leaving woody stems that turn dark brown. These can persist for 3 years and prevent the growth of native plants.



## Survey of Japanese Knotweed in Guernsey

In association with the Guernsey Knotweed Action Group, the Commerce and Employment Department carried out a survey to find out where knotweed was established. Over 100 people responded and we have built a comprehensive database of the sites. If you see this plant in your garden, on your property or anywhere in the island please fill in a survey form obtainable from Raymond Falla House, Longue Rue, St Martin, GY1 6AF.

### How does Japanese Knotweed spread?

Japanese Knotweed rhizomes can be found in topsoil and subsoil. The rhizome, which is an underground stem, rather than a root, can grow to a depth of at least 3m (10 feet) and can extend out to 7m (23 feet) from the parent plant. If the woody leathery brown rhizome is cut it has an orange coloured central core with a yellow orange outer ring. Japanese Knotweed is very invasive and sections of rhizome no bigger than a fingernail can regenerate into a new plant.

Typically Japanese Knotweed does not spread by seeds. However it can grow from STEMS, CROWNS & RHIZOMES:

- Rhizome fragments of 1cm (0.7g) can sprout a new plant.
- Stem cuttings from mowing, flails, or strimming can re-grow and establish new plants.
- Crowns can withstand drying and composting to sprout new buds and new plants.

Frequently, when walking along a path, you will find a new Knotweed plant spaced out some distance from an existing infestation. It is as if someone walking along the path has broken off a piece of stem but then dropped it some metres along the path. This has then rooted and a new plant has developed. Over a number of years new clumps of plants develop along the footpath, and these can often be seen along the coastal footpaths.

Remember the spread of Knotweed occurs by distributing any parts of this plant. Therefore don't:

- Fly tip or dump green waste on verges, cliff areas or on derelict ground.
- Spread cuttings or chippings from affected hedges and verges.
- Dump or spread of topsoil from contaminated sites.

Knotweed also spreads from stream banks where soil erosion dislodges viable rhizome fragments and washes them down stream.



*Base of stem showing the crown and red buds ready to develop into new stems*



*The stem has a characteristic red speckled pattern*

### How do I dispose of Knotweed material, or soil containing its rhizomes?

Gardeners who have fly-tipped green waste on road verges and waste ground have largely been the cause of the spread of Knotweed. This is highly damaging to the environment. You should dispose of Knotweed canes within the confine of your own garden, either by composting on a plastic sheet, or by burning. Stems should be dried on a layer of polythene/plastic to prevent rooting. Once a cut stem has dried to a dark brown colour, it can be safely composted. Pulled stems, which will include crowns, are not suitable for composting as they will re-grow.

If you have Knotweed stems that cannot be disposed of in your garden, they should be disposed of by prior notice, at the States landfill site. The landfill operator will then arrange for the stems to be buried at depth that will prevent re-growth. Do not take them to the green waste site as they may re-grow.

### CONTROL OF JAPANESE KNOTWEED

#### Cultural Control

Many people don't like using pesticide sprays and so try to get rid of the plant by "cultural" methods, such as cutting or mowing but it is rarely successful. It is difficult to remove large and long established infestations without the use of pesticides. Cutting, mowing or grazing the entire affected area will eventually weaken the plant, but it will take many years of active regular treatment to exhaust the rhizome (and most people are exhausted before the plant). This has been estimated to take at least 10 years, and cutting should be performed once a month during the growing season. Special care must be taken with disposal of the cuttings or they will root and spread the Knotweed further. Grazing by cattle, sheep or goats can only be done while the shoots are young before they become woody, grazing should not be allowed after any herbicide treatments.

Hand pulling is more effective than cutting as it removes the crown and part of the rhizome but the pulled stems are even more likely to take root and spread so the correct disposal of this material is important. Pulling can be used for small colonies in environmentally sensitive areas and control can be achieved in 3 years.

If left the Knotweed will rapidly re-grow to its full height (up to 3 metres).



*Cut Knotweed rapidly re-grows. If not treated with a herbicide, it should be re-cut every 4 weeks*

## Chemical control by herbicides

Unfortunately 'cultural' methods of control, such as repeated cutting of the stems, are really not effective. Chemical control is the most successful treatment for controlling Knotweed as it kills the extensive rhizome system, but even this may take several years to fully eradicate the plant. There are a variety of pesticides that can be effective, but some of these are more persistent than others and will prevent the growth of other species in the soil after the Knotweed has been eradicated. Trials of the available pesticides and methods of treatment are now underway and we will be able to provide better advice for you in the future.

The most commonly used pesticide at the present time is Glyphosate, which may be obtained in a number of products for use in both commercial and amateur garden situations. Local Guernsey Water legislation that prohibits the use of pesticides within 3 metres of watercourse must be followed.

Other chemical treatments are also effective. You should consult the factsheet provided by the Plant Pathologist at this Department for the latest information on pesticides and treatments.

### When to treat?

Treatment should be carried out when the Knotweed is actively growing. The best time is to apply pesticide when the plant is between 0.5 metres and 1 metre tall and there is plenty of leaf to absorb the chemical. If it is too tall cut it down first and then treat the re-growth when there is sufficient leaf area for the pesticide to be taken up by the plant and translocated to the rhizomes. It takes three weeks for the effects to be seen. A second treatment for re-growth later in Summer or Autumn is effective as the plant draws food stores down from the leaves to the rhizomes beneath the soil. Avoid application when the plant is flowering as bees and other insects could be affected by some herbicides.

### How to treat?

**Spraying** is the most effective treatment but drift can occur to neighbouring plants, shrubs and lawns. It is best to spray when there is no wind and when the weather is likely to be dry for 24 hours afterwards. It is important to follow the manufacturers instructions closely when using pesticides and wear appropriate protective clothing. Also follow legislation regarding the use of pesticides near water courses as spraying cannot be used within 3m of a watercourse (or further away if there is a paved area that would allow chemical to run off and cause contamination. Take care also in waterlogged and steeply sloping areas).

**Weed wipers** or weed gloves can be used for foliar application by applying the herbicide to the leaves and can be used for small colonies of Knotweed.

Research in Cornwall has shown that the herbicide applied into the cut stem above the crown is an effective method of control.

### Combination treatments

Digging the affected area to break up the rhizomes stimulates Knotweed growth. This is more susceptible to herbicide treatment and two applications of chemical treatment within the growing season can be highly effective in control.

### Treating areas within the "water catchment"

Herbicides should not be applied within 3m of a water catchment area if spraying is used, and 1m if a "weed wipe" system is used. (Guernsey Water 'The Prevention of Pollution (Guernsey) Law, 1989'). For further advice in these areas contact Guernsey Water. Telephone: 724552

### Commercial Application

A certificate of competence is required for treatments to commercial premises and for agricultural and horticultural use. For further advice contact the Plant Pathology Section. Telephone: 234567

### How long will it take to control the weed infestation?

In the first year spray the plants in the late spring / early summer and again in summer / autumn.

In the second year re-growth should be less and the plants should be sprayed again in the early summer and autumn. Make sure the affected area is marked out so that plants can be found the following year.

In the third year the growths are very tiny—a few centimetres in height but they must be treated thoroughly again or the plant will re-grow.

Continue to treat the area as long as plants reappear.

### Whose responsibility is it to control Knotweed?

The landowner or tenant of the affected land is responsible. If Knotweed is growing on your land it is your responsibility to control it and to prevent it spreading onto your neighbour's land.

### I have got Knotweed coming onto my land from the adjoining property. What can I do?

This is a common problem that often lacks a satisfactory answer. The best solution is to co-operate with the neighbouring landowner and coordinate your efforts by sharing the costs of labour and chemical treatments. If you are in dispute with your neighbour current legislation offers little support.

### Guidance for Property developers

A contaminated site should be recognised as early as possible so that appropriate management can be started well before development. Very high costs could be incurred if Knotweed is allowed to remain and spread as this could cause structural damage to property and tarmac roads and pathways.

The site should be checked prior to development work for the presence of Japanese Knotweed. Soil can be examined for evidence of stem material which can be green or brown, also crowns which may have dormant red buds on the surface of the soil. The rhizome has a carrot like orange - red colour when it is broken.

Contaminated soil must be disposed of appropriately to a recognised landfill site and the operator there notified in advance about the presence of the Knotweed material. It is the responsibility of the haulier and the waste producer to dispose of this material appropriately. Soil containing Knotweed must not be tipped where it can harm the environment.

Before work on the site starts the Japanese Knotweed should be treated with an appropriate herbicide. (See separate sheet for advice on chemical treatment). The best time of year to treat is from July until the leaves fall but avoid treating when the plant is in flower. Treating in the spring can be done but it is not so effective as the plant uses stored nutrients in the rhizomes from the previous year. Of course no treatment is possible in the winter when the plant is dormant. Remember that one treatment will not be sufficient and the Knotweed is likely to re-grow for several years.



## Disposal of Japanese Knotweed Material

Japanese Knotweed waste including the stems, leaves, rhizomes and crowns must be disposed of responsibly to prevent spread of this plant into new areas on the island.

- **On-site burning** is most appropriate but do not cause a nuisance to your neighbours or danger to road users. Consider the wind strength and direction before burning and consult the Environmental Health Department. **Telephone: 711161.**
- **On-site composting** can be undertaken once the green material has withered and dried. Put the green stems and leaves on a polythene sheet to dry (and to prevent rooting) before composting.
- **Landfill disposal**, the tip operator should be notified of the contaminated material so it is buried at the correct depth and cannot re-grow.

### REMEMBER:

- DO NOT compost the stems or other part of the plant unless first dried.
- DO NOT allow plant material to contaminate water courses as these can root further downstream.
- DO NOT strim or flail Knotweed as this can spread cuttings that will root.

## References

1. **Chemical Control of Japanese Knotweed (Home and Garden)**, Commerce and Employment Department.
2. **Chemical Control of Japanese Knotweed for NPTC Qualified Spray Operators**, Commerce and Employment.
3. **The Japanese Knotweed Manual**, Lois Child & Max Wade, Packard Publishing Ltd, Chichester 2000 £20

*The information in this publication is intended for guidance only and is a summary of best current practice in the management of Japanese Knotweed. The authors cannot accept any liability for any loss or damage which may result from the use of this publication.*

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