JAPANESE KNOTWEED

Fact sheet: Identification and control

What is Japanese knotweed?

Japanese knotweed, (scientific name *Fallopia japonica*), also known as donkey rhubarb, was introduced to Britain from the Far East in 1825 as an ornamental plant.

Why is it a problem?

It is the most invasive exotic plant in the British Isles. It spreads rapidly, especially on waste ground and next to streams and rivers, forming large stands that shade out and inhibit native plants, and leaves bare ground beneath which damages natural habitats and leaves riverbanks prone to increased erosion. 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 easily through fragments of the roots (rhizomes), transported in rivers, in contaminated topsoil or by stem cuttings in garden waste. Knotweed can grow in almost any habitat, and once established, it is very difficult to control. For this reason, under section 14 of the Wildlife Act 1990 it is an offence to plant Japanese knotweed 'or otherwise cause it to grow' in the wild.

What does Japanese Knotweed look like?

In spring, red shoots appear with rolled up reddish purple leaves. The plant grows rapidly, up to 10cm a day, and the leaves unfurl, becoming lime green and later darkening to mid green colour. The stems elongate and look similar to bamboo, as they are hollow with prominent nodes. However knotweed stems tend to zigzag and possess reddish-purple speckles. Each leaf is carried on a short stem at a different level from the next leaf below or above. In summer the mature plant reaches up to 3m in height. Clusters of creamy white flowers are produced in late summer/early autumn.

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 by covering the ground with dense litter.

The stem (right) has a characteristic red speckled pattern. Shoots (left) appear from nodes on the stem.

If you are unsure whether you have Japanese knotweed send a photograph of the plant to ecopolicy@gov.im for identification.

Note: Unlike Giant hogweed (*Heracleum mantegazzianum*), Japanese knotweed is not known to be harmful to humans and is even eaten.

How does Japanese knotweed spread?

Japanese knotweed has extensive, deep roots called rhizomes. These can be up to **3m deep** and can extend out to **7m from the parent plant**. Think of the plant as an iceberg, with a third of the plant above ground and two thirds underground, with an ability to spread.

Knotweed does not normally spread by seeds. However it can grow from cut stems, crowns or rhizomes:

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

This plant easily spreads to other areas if cut stems, shoots, crowns or roots (rhizomes) are moved

DO

- Check your land for the presence of knotweed, especially along watercourses;
- Treat and control knotweed on your land using established control methods (see below);
- Report knotweed to the relevant landowners, if possible.
- If landowners are unknown, report knotweed to the Department of Environment, Food and Agriculture (DEFA) using the contact details found below. Precise location details including grid references and annotated maps are encouraged.

DON'T

- Take to amenity sites with other green waste;
- Tip green waste on verges, riversides, cliffs or derelict ground;
- Cut and spread knotweed cuttings or chippings from affected areas;
- Move or spread topsoil from knotweed contaminated sites;
- Move any parts of the plant (including dead-looking or uprooted stems) any more than is absolutely necessary – it is incredibly easy to spread this plant.

What is the Government doing?

Government departments treat knotweed on the land within their jurisdiction but it can become re-infested from upstream. The whole of the Auldyn has been treated, as a catchment. DEFA advises both government and private landowners on the most effective methods of controlling knotweed. Successful control of this plant on the Isle of Man can only be achieved by the co-operation of all landowners. If you see any Japanese knotweed growing on central or local government owned land please report this to the relevant authority.

Whose responsibility is it to control knotweed?

<u>It is the responsibility of the landowner or tenants of the land affected to treat and control Japanese knotweed.</u>

How can you control Japanese knotweed?

Cultural (non-chemical) treatments

It is very difficult to remove large and long established infestations without the use of herbicides. Cutting every month during the growing season will eventually weaken the plant. However, it could take many years to fully eradicate the weed. Hand pulling is more effective than cutting, as it removes the crown and part of the rhizome. However the pulled stems and rhizome can easily take root and spread so the

correct disposal of this material is important. Pulling can be used for small colonies in environmentally sensitive areas, such as alongside streams, and control should be achieved in 3 years. Stems should be pulled in June and July and laid on an impermeable surface until they are dry and brown and can be burnt. Shading out the knotweed using plastic sheeting with the addition of a mulch or bark chipping has been tried, but is less effective than chemical treatment. Digging out roots can be effective and quick but can be very expensive as even small pieces must be removed so large volumes of soil may need sifting. Livestock will eat it.

Chemical control by herbicides

Chemical control is the most successful treatment as it kills the extensive rhizome system, but even this takes several years to fully eradicate the plant. The most commonly used herbicide is glyphosate. Another herbicide that could be used is 2, 4-D Amine, which is more selective and will not affect grass. Both glyphosate and 2, 4-D amine are approved for use in or near watercourses provided an appropriate preparation of the chemical is used. Care should be taken when applying glyphosate near trees and shrubs, as any spray drift may cause severe damage or kill the affected plant. Please read all product labels before use and always follow the manufacturer's instructions on safe use.

How to treat

Spraying is the most effective treatment but take care to avoid drift and damage to non-target plants such as neighbouring plants, shrubs and lawns. It is best to spray when there is only a very light wind and when the weather is likely to be dry for 24 hours afterwards. Take care on paved, waterlogged and steeply sloping areas to ensure that the herbicide run-off does not contaminate a watercourse. On paved or porous surfaces like gravel, care should be taken to ensure herbicide run-off does not seep through onto surface roots, as uptake may lead to the death of trees.

Weed wipers or impregnated weed gloves can be used for foliar application by applying the herbicide directly to the leaves.

Stem injection of herbicide into the lower part of mature stems using specialised equipment is the recommended solution for use in sensitive habitats such as around watercourses or around rare or protected plants because it is a more precise application method which reduces the risk of damage to nearby non-target species and habitats. Stem injection is more time consuming and may require assistance from a specialist but can be a very effective treatment method in small, targeted, areas.

It is important to follow the manufacturer's instructions closely when using herbicides and to wear appropriate protective clothing.

When to treat

Best advice suggests **three applications** through the year – spring, mid-summer and late autumn. Spring application allows the herbicide to be applied when the plant is only 1m tall and there is plenty of leaf to absorb the chemical. By summer the plant could well be over three metres tall, making safe application to the leaves impossible. It may be necessary, therefore, to cut back the established growth (ensuring, safe disposal) before spraying, and again spraying the re-growth in late autumn when the plant is channelling nutrients back to the roots.

Future treatments

Year 1	For optimum effect, spray the plants with herbicide in April, June and September.
Year 2	Spray the plants as in year 1. Make sure that the affected area is marked out so that any small remaining plants can be found the following year.
Year 3	The growths are very tiny - a few centimetres in height - but they must be treated thoroughly again or the plant will re-grow.
Year 4 and onwards	Check the area for any re-growth and repeat treatment as necessary.

Application of herbicides near to streams and watercourses

Herbicides, which are not approved for use in or near watercourses, should not be applied within 5 metres of a watercourse (Code of Good Agricultural Practice for the Protection of Water).

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 to new areas and to avoid committing an offence.

On-site burning is usually the most appropriate, but do not cause a nuisance to your neighbours or danger to road users. Consider the wind strength and direction before burning. Burn thoroughly.

- **DO NOT bring to the amenity sites with your other garden waste**
- **DO NOT compost the stems or other parts of the plant**
- **DO NOT allow plant material to contaminate watercourses or other habitats**
- **DO NOT cut, strim or flail knotweed as this can spread cuttings**

Commercial application

A Certificate of Competence is required for chemical treatments to commercial, agricultural and horticultural land. For further advice contact the DEFA Agriculture Team - agriculture@gov.im

Guidance for property developers

It is important to identify whether Japanese knotweed is present as it can grow through a metre of concrete and tarmac causing extensive structural damage and resulting in high costs. Recognition of stems, shoots and leaves should be possible with reference to the descriptions and photographs in this fact sheet. However, determining whether there are rhizome or crown fragments in the soil can be difficult. Look out for the carrot-like orange-red core of the rhizome and the hard brown crown from which the shoots grow.

If Japanese knotweed is found on the site:

- Cordon off the area where the knotweed is situated to prevent machinery accidentally spreading the material. Do not remove the knotweed material to another site unless sanctioned for legal disposal.
- Do not disturb the soil at or in the vicinity of knotweed, unless for control purposes.
- Treat the knotweed with an appropriate herbicide before work commences on the area. This can be done at any time when there are leaves on the plant.
- Dispose of knotweed leaves and stems by drying and burning, on site if possible. Otherwise knotweed contaminated green waste and soil will need to be buried to a depth of at least 5 metres. The potentially viable knotweed material should then be covered with a geo-textile layer or a heavy gauge polythene sheet prior to infilling.
- Remember that one herbicide treatment will not usually be sufficient and the knotweed is likely to re-grow for several years. Annual checks should be undertaken and repeat herbicide applications are likely to be necessary.

This leaflet should provide all the information required to control the plant. However, further information and advice can be obtained from:

Department of Environment, Food and Agriculture (DEFA)	www.gov.im/defa www.gov.im/invasive-non-native-species
Japanese knotweed identification and control advice: **DEFA Ecosystem Policy Team** Telephone: 01624 651577 E-mail: ecopolicy@gov.im	Advice on other aspects of watercourse management: **DEFA Inland Fisheries** Tel: 01624 685587 Email fisheries@gov.im