



Japanese Knotweed presents a challenge to organic land managers. Garden Organic's Dr Gareth Davies takes a closer look.

LAND MANAGEMENT

Organic weed management seeks to manipulate the environment to the advantage of the crop or plants that you do want over those that you don't.

An organic weed management perspective – JAPANESE KNOTWEED



JAPANESE KNOTWEED has a large and detrimental effect, both visually and on native plant species and it is listed under a schedule of the Wildlife and Countryside Act (1981), which makes it an offence to 'plant or cause it to grow in the wild'. This immediately challenges one of the basic tenants of organic weed management, which is that it is undesirable, and probably impossible, to eradicate weeds. In fact the key word for organic land managers is the word 'management' rather than 'control'.

Organic weed management seeks to manipulate the environment to the advantage of the crop or plants that you do want over those that you don't (the weeds!). Organic weed management therefore takes a systems approach combining all appropriate tactics to suppress weeds and keep them at a tolerable and generally low level. In practical terms, weed control is primarily dependent on indirect cultural methods such as rotations, hygiene or grazing and secondarily, on a range of more direct mechanical or thermal means such as hoeing or flaming.

Managers of certified organic holdings are not allowed to use 'synthetic herbicides' to kill weeds even on non-cropped land due to their harmful effects both above the ground, but also, crucially, on the flora and fauna below ground. This is because organic farming systems rely on a biologically active soil to recycle nutrients and make them available to crop plants at the relevant time, and it is this soil biology which is harmed by over use of herbicides.

Hence the challenge of Japanese knotweed (*Fallopia japonica*); an invasive rhizomatous perennial introduced to the UK from Japan in the early nineteenth century as an ornamental plant and as cattle fodder. It has subsequently become a major invasive weed where it is regularly found established along railways, canals, rivers, streams and roadsides. It is a familiar sight in the warmer and wetter areas of the UK, forming tall thickets with a dense leaf canopy that exclude other plants, even bracken. In the autumn the fallen leaves decompose slowly, forming impenetrable mulch that prevents anything else germinating.

Japanese knotweed is tolerant of soil acidity, heavy metal contamination and air pollution (its native habitat is larval slopes) but its spread is restricted by summer drought. It is also sensitive to spring gales, where the leaves can suffer severe wind damage as they unfurl, and the foliage is also sensitive to late spring and early autumn frost.

Organically, management of Japanese knotweed depends on avoiding it in the first place. Plants should be removed as soon as they are seen and regular monitoring of areas at risk is a sensible management option. Topsoil and other brought in soil should be checked for fragments and, once again, a basic risk assessment is a valuable management tool. If there is any doubt, the origin of the soil should be checked. Strict hygiene should be followed in dealing with living Japanese knotweed plant material.

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“A significant proportion of the biomass of Japanese knotweed is below ground so control by cutting alone is ineffective and may increase stem density and the spread of clumps.”

← 21

All fragments should be destroyed by burning or by deep burial to at least 10 metres deep. It should be borne in mind that all waste plant material must be burned; the plant can survive composting if this is not thorough, and burning the plant in situ is ineffective. Root barrier fabrics made from reinforced polyethylene laminate have been successfully used to contain the spread of Japanese knotweed in some situations.

Once established it is difficult to eradicate as established plants develop persistent woody stocks that increase in mass with age and continue to produce creeping rhizomes. In fact a significant proportion of the biomass of Japanese knotweed is below ground so control by cutting alone is ineffective and may increase stem density and the spread of clumps. However, pulling and digging out the weed has some effect if repeated regularly, ideally on a monthly basis.

If all else fails you could try using it! Sheep, goats, cattle and horses will graze the young shoots from February to July and keep the weed in check and young shoots can be cooked and eaten like asparagus. The dried rhizomes are used in Chinese and Japanese medicines for treating a range of ailments and exploitation in this manner might help to manage populations of the plant.

Some ongoing research is looking for biological control agents in the



Photo courtesy of Environet Consulting Ltd

countries of origin and some of these appear promising. However for the time being the principal non-chemical methods for managing this weed are preventing it establishing in the first place, and, if it does establish, a rigorous programme of cutting and digging, possibly combined with a grazing in the spring where this is feasible.

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Japanese Knotweed

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PROFILE

NEW GREEN METHOD FOR ERADICATION OF JAPANESE KNOTWEED

Xtract, a zero waste, herbicide free on-site remediation method has been employed by Rotherham Metropolitan Borough Council and UCS Civils for the lottery funded environmental green space improvement works at Clifton Park, Rotherham.

Xtract was selected in preference to dig and dump, on-site burial and herbicide methods as it provides rapid, effective and guaranteed eradication of Japanese knotweed at less than half the price of dig and dump.

“We were very excited to discover Environet’s innovative Xtraction method, which seemed to provide a very cost effective solution, with minimal adverse environmental impacts, that could also fit our tight works programme” explained Andy Lee of Rotherham Metropolitan BC.

It’s claimed to be the best environmental method available as no chemical herbicides are required, waste volumes are reduced to effectively zero, and it’s all carried out on-site, avoiding the need for lorry movements and eliminating the risk of spread.

The method, which uses patent pending technology to physically remove the knotweed rhizome from the soil, literally removes the root of the problem.

Further information is available on Environet’s website www.environet-uk.co.uk/japanese-knotweed.php or call Tel: 0932 868700