Weed focus
Ragwort

Graham Paul offers some practical advice on that most awkward of weeds – Ragwort and offers the opportunity of picking up some BASIS points

Common Ragwort (Senecio jacobaeae)

Rosette stage found in year 1

Ragwort belongs to the daisy family and along with the Groundsels is classified in the genus Senecio.

Common Ragwort (Senecio jacobaea), as the name implies, is the most frequently occurring species and is normally a biennial, having a rosette stage in the first year that overwinters and in the second year grows a hairless, leafy flowering stem that is divided at the top.

Yellow flowers 15 to 20mm across, are borne in dense, flat-topped clusters from June until November when the plant dies. However, in some instances, when the plant becomes damaged by grazing or cutting, changes in its physiology occur and it becomes a short-lived perennial, surviving for several years.

Most wild flower references list six species of ragwort found in the UK. The other five are; Hoary Ragwort (S. erucifolius), Oxford Ragwort (S. squalidus) – introduced from southern Italy and naturalised in Britain, Marsh Ragwort (S. aquaticus), Silver Ragwort (S. cineraria) – introduced from the Mediterranean and naturalised on coastal cliffs in southern England and Fen Ragwort (S. paludosus) a rare perennial growing to 2.0m tall in the fens in East Anglia.

Ragwort provides a source of food and nectar for around 200 invertebrate species in the UK; of these some 30 are totally dependent on the plant as their only food source, which makes ragwort an essential part of our native flora.

Ragwort contains many different alkaloids that are poisonous to animals. It is a particular problem to grazing animals such as horses, cattle and pigs, whose tolerance to these alkaloids is particularly low, causing irreversible cirrhosis of the liver when an appreciable quantity of fresh ragwort is consumed. Fortunately the plant has a very bitter taste so the fresh foliage is rarely eaten by horses and cattle but it becomes much more palatable once the plant dies.

Hay and silage contaminated with ragwort plants can be fatal to livestock as the toxic alkaloids in ragwort are not broken down by drying or by the silage process.

Spraying with herbicides to remove ragwort can also present a danger to grazing animals if they are released back into the pastures too soon after treatment. In this case it is not the herbicide residue that causes harm but the presence of dead ragwort plants that the animals will no longer avoid.

Horses will avoid ragwort in pastures

When a horse has been poisoned by ragwort, the symptoms include; yellow mucus membranes, depression, and lack of coordination. Sheep and goats have a much greater tolerance to ragwort and will eat small quantities of the plant with relish. Although they do suffer damage to the liver from consuming ragwort, it is at a much reduced rate than horses, cattle and pigs. There are reports that the alkaloids kill parasitic worms in the sheep's stomach, so in small doses they can be beneficial.

Ragwort poses little risk to the health of humans since the bitter taste precludes its use as a food. However, alkaloids can be absorbed in small quantities through the skin when the plant is handled causing an allergic reaction in sensitive individuals. Among the alkaloids found in ragwort is a group known as the sesquiterpine lactones that can cause the condition 'compositae dermatitis'. These are different from the pyrrolizidine alkaloids that are responsible for the toxic effects to the liver that result from eating the foliage.

Five Injurious Weeds

Common Ragwort is one of five injurious weeds cited in the Weed Control Act of 1959. The term injurious weed describes an invasive species that is injurious to; crops, natural habitats, ecosystems, humans and livestock such as horses and other grazing animals. Indeed, Common Ragwort is the only one of the listed species that is toxic; the others are included in the legislation because of their damaging effect on crops. They are; Spear Thistle (Cirsium vulgare), Creeping or Field Thistle (Cirsium arvense), Curled Dock (Rumex crispus) and Broad-Leaved Dock (Rumex obtusifolius)

Under the terms of the Weed Control Act of 1959, a land occupier can be required by the Secretary of State for Environment, Food and Rural Affairs to take steps to prevent the spread of one or more of the five species. However, the growth of the plant is not made illegal by the act and there is no statutory obligation for control placed upon landowners in general. It is only when the potential spread of the weed to neighbouring landowners is deemed to be harmful that the powers of the legislation are used.

Three other pieces of legislation are relevant to ragwort:

1. The Ragwort Control Act of 2003, a private members bill introduced by Mr John Greenway MP for Ryedale.

2. A direct result of Mr Greenway's bill was the publication of 'The Code of Practice for the Control of Ragwort' by the Department for Environment, Food and Rural Affairs (DEFRA). This code defines the situations in which there is a likelihood of ragwort spreading to neighbouring land where it will present an identifiable risk of ingestions by vulnerable animals, and provides guidance on the most appropriate control measures. The Ragwort Control Act 2003 gives this Code 'evidential' status in any proceedings taken under the Weeds Control Act 1959. Failure to follow this Code is not an offence but non-compliance may be used as evidence in any legal action. Equally, owners/occupiers should be able to establish a defence if they can demonstrate that they have adopted control measures that comply with this Code's guidance.

Insects feeding on the nectar

"The high visibility marking of the moth and caterpillars is a warning for predators to leave them alone. Survival is also helped by lack of competition for their main source of food"

3. The Natural Environment and Rural Communities Act 2006 delegates the functions available to the Secretary of State under the Weed Control Act to Natural England, a DEFRA agency.

This delegation of functions enables Natural England to investigate complaints where there is a risk that injurious weeds might spread to neighbouring land. Natural England gives priority to investigating complaints where there is a risk of weeds spreading to land used for grazing horses or livestock, land used for forage production and other agricultural activities.

Control Measures

The Code of Practice for the Control of Ragwort outlines various suggested methods that can be summarised under the general headings of; cultural, biological and chemical control.

Cultural Control

Hand pulling is an ideal technique for use in areas such as grazing pastures, if there are only a few ragwort plants present. Regular removal, especially prior to

LEFT, BELOW LEFT and BELOW:
Cinnabar moth: caterpillars and adult

flowering, may be all that is needed to keep pastures free of the potential hazard to livestock. Alternatively, the whole plant can be levered out of the soil using a special tool. Hand pulling and levering out the plants are best carried out in moist soils. Gloves must be worn when pulling and handling ragwort, which can be disposed of by drying the plant material, away from access by livestock, and then burning.

Cutting down the plants to prevent the seed-heads from maturing should be regarded as an emergency treatment to halt the spread of the weed and must be followed up by some other form of control.

One factor that encourages the proliferation of ragwort in pastures is over-grazing, which results in thinning of the grass sward, leaving room for this weed to establish. Good turf management practices coupled with a sensible rotation of grazing will help to crowd ragwort out.

Biological Control

The Cinnabar moth Tyria jacobaeae is an interesting species that can give some degree of control of ragwort. Both the adult and caterpillar feed on ragwort plants and are not affected by the toxic alkaloids they absorb through their digestive tracts. They assimilate the toxins into their bodies as a defence mechanism against birds and other predators, who would find them unpalatable.

Cinnabar moth

The high visibility marking of the moth and caterpillars is a warning for predators to leave them alone. Survival is also helped by lack of competition for their main source of food. However, distribution of the Cinnabar moth caterpillars tends to be patchy, making control unreliable. It is not uncommon to see a ragwort plant totally devastated by the caterpillars and one next to it untouched.

Chemical control

'Barrier H'– is an herbicide based on a natural product (citronella oil) that can be used at all stages of growth and is marketed in a ready-to-use spot treatment pack. It produces a rapid, severe scorch on ragwort and certain other weeds and will also temporarily scorch the grass but this soon recovers.

Selective herbicides containing MCPA (e.g. 'Agritox 50') will give moderate control of the rosette stage of the weed. Products containing 2,4-D (e.g. 'Depitox') will give a moderate level of control at dose rates applying 1.65kg of the active ingredient per hectare (3.3L/ha of a 500g/L amine formulation) In some situations a repeat application may be required for complete control with 2,4-D.

Mixtures containing the active ingredients MCPA + mecoprop-P + dicamba, such as 'Relay Turf' or 'Longbow' will give reasonably effective control.

Glyphosate formulations can be used as spot treatments applied with a knapsack sprayer but these will also kill the grass in the immediate vicinity of the target plant. It is possible to use a weed-wiper applicator to apply the glyphosate without damaging the grass.

With all herbicide treatments, livestock must be excluded during treatment and kept out of treated areas for at least 4 to 6 weeks until all traces of the weed have rotted away or have been removed. Animals are unable to recognise dead or dying plants and in most cases the decaying plant tissues will contain higher levels of sugars making them more palatable.

SELF ASSESSMENT

Use the questions below to check your understanding of this topic. Readers can claim BASIS points if the questions are answered correctly!

Circle the correct answer(s)

1) Which other species belongs to the same genus as Ragwort (Senecio)?
a) Ground-ivy
b) Ground-elder
c) Groundsel
d) Ground-pine

2) Which of the grazing animals mentioned have a much greater tolerance to the alkaloid toxins in Ragwort plants?
a) Cattle
b) Sheep
c) Horses
d) Pigs

3) Apart from Common Ragwort which other injurious weeds are cited in the Weed Control Act of 1959? More than one may apply
a) Marsh Dock Rumex palustris
b) Spear Thistle Cirsium vulgare
c) Curled Dock Rumex crispus
d) Giant Hogweed Heracleum mantegazzianum

4) Which Government Agency has specific powers, delegated by act of parliament, to investigate complaints under the Weed Control Act 1959?
a) Environment Agency
b) Home Office
c) Natural England
d) Forestry Commission

5) Which species of moth provides a biological control for ragwort?
a) Orange swift (Hepialus sylvina)
b) Cinnabar moth (Tyria jacobaeae)
c) Scarlet Tiger (Callimorpha dominula)
d) Brown-tail moth (Euproctis chrysorrhoea)

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