

# Ragwort - The Problem, The Law and Control Techniques

This article is supplied by **AgResource Ltd** who provide the BHS a **free telephone helpline** to help horse owners decide on their best ragwort control strategy. For further information on ragwort control or paddock maintenance please ring **AgResource on 01926 633099** or alternatively send an email to [enquiries@agresource.co.uk](mailto:enquiries@agresource.co.uk). AgResource also offers BHS members a product supply service.

## Ragwort – The Problem



Ragwort is a native species to the British Isles, and is a weed specified under the Weeds Act 1959.

Ragwort contains **alkaloid toxins** that, if eaten by horses or any grazing animal, can have debilitating or fatal consequences. The highest concentration of toxin is found in the pollen, then in order, the leaves, stems and roots. The effect of the toxin is cumulative and irrevocable, and as it builds up in the body results in liver failure. The build up is undetectable until it finally reaches the critical level at which symptoms occur.

Prof. Derek Knottenbelt of Liverpool University, speaking at the recent BHS Ragwort Awareness Conference in London, indicated that there is now evidence that humans may also be at serious risk from ragwort poisoning through direct contact such as hand pulling without wearing protective gloves, or breathing in high quantities of pollen. For this reason it is essential that anyone handling ragwort minimises skin contact and wears rubber gloves, and if in regular contact with flowering ragwort, a dusk mask with a pollen filter

## Ragwort – The Law

All land-owners have a responsibility to control the spread of ragwort

2005 saw the most noticeable infestations of ragwort for many years. Both the Weeds Act 1959 and the Ragwort Control Act 2003, supported by DEFRA's Code of Practice (2004), seek to control the spread of ragwort and the land occupier must have a control policy in place wherever ragwort poses a high or medium risk to grazing animals or to land for forage production.

### High Risk

Ragwort is present and flowering/seeding within 50m of land used for grazing by horses/other animals or for forage production. In this case immediate action to control the ragwort must be taken.

### Medium Risk

Ragwort is present and flowering/seeding within 50m to 100m of land used for grazing by horses/other animals or for forage production. In this case the occupier must put an action plan and control policy into place for control of the ragwort.

### Low Risk

Ragwort is present and flowering/seeding more than 100m from land used for grazing by horses/other animals or for forage production. In this case no immediate action to control the ragwort needs be taken, but the occupier must ensure that ragwort plants are disposed of in an appropriate manner.

The distances given above are guidelines *only* and when assessing risk, account should be also be taken of particular local circumstances and other relevant factors such as prevailing winds, topography, shelter belts, natural barriers, soil type and vegetation cover of receiving land. Whether or not the density of ragwort is high or low, the risk factor will be determined by the likelihood of it spreading to land used for grazing and/or feed/forage production.

## **Code of Practice on how to prevent the spread of Ragwort: DEFRA June 2004.**

Enforcement is ultimately undertaken by *DEFRA*. Responsibility for ragwort control lies as follows:

Private and commercial property, agricultural land:	The land-owner occupier/tenant.
Motorways and trunk roads:	Highways Agency
All other public roads:	Local Highways Authority
Railway land:	Network Rail
Canals and towpaths:	British Waterways
SSSI:	Owner/Occupier
National Nature Reserves:	English Nature/Owner/Occupier
Local Nature Reserves:	Owner/Occupier
Common areas/common and:	Local Authority/Owner
Ministry of Defence (MoD) land:	MoD
Development land:	Owner/Occupier
Parish/Town/Community Council land:	Parish/Town/Community Council
Private woodland/forestry:	Owner/Occupier
Forestry (Forest Enterprise):	Forest Enterprise

## **RAGWORT BIOLOGY – Understanding this helps control tactics**

There are **FOUR** widespread species of ragwort in the UK. All are poisonous to grazing animals, although law only refers to Common Ragwort.



### **Common Ragwort** *Senecio jacobaea*

#### **Habitat:**

Widespread.

Often abundant in poor soils, dry sandy or chalky grassland and on dunes.

#### **Flowers:**

June to September

#### **Identification:**

Biennial, unless constantly cut when can change growth habit to perennial. Branched 2-4 ft. high

Flower heads large (1") yellow daisy-like flat-topped in clusters

Leaves deeply pinnately lobed, the lobes toothed with small blunt end lobe.



**Marsh Ragwort** *Senecio aquaticus*

**Habitat:**

Widespread  
Frequent in wet meadows.

**Flowers:** June to August

**Identification:**

Shorter (2ft high) than Common Ragwort  
More widely branched and less stiff

Flower heads much larger than common ragwort,  
(over 1 inch across) and in broader, looser clusters

Leaves glossier mostly with a large end lobe and  
much smaller forward-pointing side-lobes



**Oxford Ragwort** *Senecio squalidas*

**Habitat:**

Spreading rapidly countrywide.  
Increasingly found in walls, waysides, railway  
banks, waste and cultivated ground.

**Flowers:**

April onwards - much earlier than common ragwort

**Identification:**

About 1 foot high, branched, straggling and much  
shorter than Common Ragwort

Flower heads  $\frac{3}{4}$  Inch, yellow, rays minutely  
notched

Leaves glossy and virtually hairless. Structure  
varies from deeply pinnately lobed to undivided



**Hoary Ragwort** *Senecio erucifolius*

**Habitat:**

Widespread

Mostly on clay or chalk in S & E England.

**Flowers:**

July onwards - later than Common Ragwort

**Identification:**

2-3 feet high. Less bushy, more erectly branched and greyer than Common Ragwort.

Flowers smaller, paler yellow than Common Ragwort

Leaves smaller, more deeply and narrowly lobed, with the end lobe narrow and pointed. Cottony down on underside of leaves.

Very short creeping runners

**Common Ragwort has a cunning plan to ensure its future survival**

Ragwort has developed a number of ways to ensure survival of future generations. By understanding these we can best devise ways of treating the problem to reduce its population.

Ragwort regenerates from both **SEED** and **ROOT FRAGMENTS**

1. Common ragwort is naturally a **biennial**, but changes to a perennial if constantly cut.
2. One plant can produce **150,000 seeds**
3. **Seeds of 2 types:** heavy ones to drop near to parent plant and regenerate locally, and ones with hairs that can travel in the wind for distances of up to 80 metres.
4. Seeds can lay **dormant for 20 years**. At the end of that time **70% are still viable**.
5. Cutting / pulling when plants are flowering, even with immature flowers, can result in viable seed being shed. Flowers present when stems are cut and left will produce viable seeds.
6. Seeds also travel long distances in water.
7. Seedlings germinate when soil disturbed / cultivated / poached, even in worm casts.
8. Rosettes re-grow from 1cm+ root fragments left after plants pulled or dug.

## RAGWORT - CONTROL TECHNIQUES:



All control techniques should be accompanied by good grass and soil management practices to maintain drainage and encourage a dense vigorous grass sward. This is essential to reduce the open areas in which ragwort seedlings will rapidly re-establish. Because the soil seed burden is high it is important to expect rapid re-infestation in reseeded areas.

## OPTIONS

### Grazing with sheep

This technique is used by some farmers as winter / spring grazing by sheep weakens plants. However sheep grazing will not eliminate ragwort and the risk to the health of animals on heavily infested fields means that leading vets now discourage this technique.

### Digging, hand-pulling or mechanical pulling

These are all options, but all methods allow potential re-growth from detached roots left in the soil. Tools such as ragforks can help improve the chances of root removal. This is best done when soil is wet to minimise root fracture. Second year plants **must be removed from site before flowering** as in addition to increasing risk of seed regeneration it also increases the risk to operator from alkaloid toxin exposure in the pollen as well as from the leaves and stems. Operators handling ragwort must wearing suitable protective clothing i.e. skin covered up, neoprene / rubber gloves, and pollen mask if the plants are flowering.

### Chemical treatment

Effective control requires a **minimum 2-year spray eradication program** with applications twice a year in the autumn and spring. Sprays should be **targeted at seedlings or 1<sup>st</sup> year rosettes** wherever possible as higher levels of control are achieved from each application, the smaller plants rot down more quickly (allowing livestock back into the area sooner), and less chemical is required minimising the effect on the environment.

When treating ragwort in **grass intended for conservation** (e.g. as hay / silage) **autumn treatment** is always the preferred timing, as spring treatment may not leave sufficient time for the dead ragwort to rot away completely before the grass is cut and baled.

Ragwort chemicals largely require the grass must be established for 12 months before treatment which means that the ragwort is likely to be very early Year 2 stage at application. To get maximum levels of control it is essential to apply treatments as soon as the grass is 12 months old and before the ragwort develops into a large 2<sup>nd</sup> year plant.

Chemicals may be applied as overall treatments using a tractor and sprayer, or as spot treatments using a knapsack sprayer. In either case it should be noted that many herbicides require the operator to have a professional licence for application.

### **Spot Treatment**

**Glyphosate** (e.g. Monsanto Roundup). This is a non-selective total herbicide and will kill any green material that it is in contact with. As such it is inadvisable to use in a pasture where the weed requires killing, but the grass does not!

**Barrier H**, based on citronella oil, is very useful as a contact rosette treatment for lower infestation levels. Application must be to a dry leaf, with no rain for 12 hours. **Action is extremely rapid**, with activity apparent after just a few hours. **Animals must be kept out of treated areas for two weeks**, by which time the treated 1<sup>st</sup> year rosette plants will have rotted down completely. If larger 2<sup>nd</sup> year rosettes have been treated these will be dead after 2 weeks, but being much larger plants will have more material to rot down, particularly if the production of woody flowering stems has started. If required rather than waiting after 2 weeks for the dead material to rot down completely, these large dead 2<sup>nd</sup> year plants may be physically picked off after 2 weeks. Any root system left behind will be dead and non-viable.



Barrier H is pre-mixed in a Ready-to-Use 5L container and comes complete with a spray gun attachment on the can, so the operator does not need separate application equipment. It is designed for quick accurate application.

Each pack will treat up to 1600 seedlings or small rosette size plants and will kill out all aerial shoots as well as the root. It is best used on small rosettes (< 15-20 cm) and because it does not require active growth of ragwort to work it may be applied at any time of year provided ragwort leaves are dry & there is no rain for 24 hours.

Applications are best made to 1<sup>st</sup> year rosettes in the spring (Mar-June) or autumn (Sept-early Nov). If spring timing missed and 2<sup>nd</sup> year plants are visible and starting to produce a flowering shoot, pull out the mature plants & burn them. Young plants will quickly re-grow from root fragments and these can then be treated with Barrier H.

The rapid speed of action means that if Barrier H is used on flowers, the seed is made non-viable.

Barrier H is available by carrier from AgResource - Telephone 01926 633099 for more information.

### **Overall Treatment**

Products are based on the active ingredient **2,4-D** (e.g. **UPL Dioweed 50**). 2,4-D is occasionally tank-mixed or co-formulated with other ragwort active herbicides, namely MCPA or dicamba.

Herbicide treatments should always be targeted during the first season's growth when rosettes will be smaller and more easily controlled. A programmed approach, spraying the ragwort area in the autumn and again the following spring, is always preferable to a single spring treatment. A single application will

typically give 60 per cent to 80 per cent control, whereas a two-spray programme will result in control levels approaching 100 per cent.

As the herbicides move in the plant's sap, they require good active weed growth – i.e. temperatures over 10°C - for proper movement within the plant to their point of activity. They must be applied to a dry leaf, and because it takes time for the chemical to move across the leaf surface to be safely inside the plant, there must be no rainfall for six hours after application.

NB: As ragwort's palatability increases as it dies after treatment, grazing animals must be kept out of treated areas until the ragwort is completely rotted so as to be dead and inedible.  
*For complete safety all dead and wilted ragwort plants should be removed and disposed of carefully. However, sometimes this is impractical and, in general, grazing animals will not touch well rotted plants.* Although the product label may state a stock withdrawal period of two weeks after treatment, it may actually be *as long as six weeks* after application before the ragwort has rotted down completely and stock may therefore be reintroduced to the field.

### **Intracrop Solar - new adjuvant chemistry to help selective translocated herbicide activity**

A recent introduction in the war against ragwort is a **new adjuvant (Intracrop Solar)** that aids the **activity of translocated herbicides** such as 2,4-D, MCPA and dicamba on ragwort. Intracrop Solar mixed with the herbicide before application, improves the herbicide's coverage of the weed, and helps its movement across the leaf surface and within the plant. Results both in independent trials and field use have been very impressive with excellent improvements achieved in herbicidal activity and control. The following independent trial illustrates the improvement in control achieved from using Solar, even with reduced rates of ragwort herbicides. The results achieved with the highest rates of herbicide, as applied for example in amenity grassland, are outstanding.

*Herbicide activity trial courtesy of Intracrop: Copyright 2005.*

#### **The effect of Intracrop Solar® applied @ 0.1% volume (i.e. 200ml/200L) with 2,4-D (+/- MCPA) for ragwort control**

*Applied 15 Dec Ragwort rosettes 20-25cm Assessed 8 WAA*

*Trial NDSM 2005*

*All trade marks acknowledged*

