

3. CONTROL OF ESTABLISHED PERENNIAL WEEDS USING HERBICIDES IN GRASSLAND MANAGED FOR SPECIES DIVERSITY

Action for valued grasslands, for now and for the future

CONTROL OF ESTABLISHED PERENNIAL WEEDS USING HERBICIDES IN GRASSLAND MANAGED FOR SPECIES DIVERSITY

Information is provided to guide the grassland manager on the possible use and choice of herbicide and application method for the selective control of established perennial weeds in grassland managed for species diversity.

THE PROBLEM

The presence of Thistles, Docks, and Ragwort in grassland is a common problem which is usually the result of past damage to the sward. This could have been caused by overgrazing, excessive poaching (especially in wet weather), or hay-cutting too low to the ground, any of which can create large areas of bare ground. Once established, their spread can be encouraged by factors such as high nutrient levels, more poaching, more overgrazing, and even undergrazing. Grasslands that have been well managed for a number of years will in general not have a weed problem, whether they have been agriculturally improved or not.

GRASSLAND MANAGEMENT

Where soil fertility is low this reduces the competitive advantage which Thistles, Docks and also Nettles exploit so successfully in improved fields. Therefore an important pre-requisite for discouraging pernicious weeds and also encouraging species diversity, is to reinstate or continue with traditional low-intensity management without the use of fertilisers. Overgrazing and excessive trampling or poaching should be avoided as this encourages germination of Thistles, Docks and Ragwort. Feeding weed infested hay should also be avoided. It is important therefore, that any action to control the problem weeds is made in conjunction with the necessary changes to the management regime.

WEED CONTROL - THISTLES, DOCKS, RAGWORT AND NETTLES

Mechanical methods such as topping, hand-pulling etc. can be sufficient to contain or reduce these weeds and prevent seeding. Complete eradication is not usually necessary or easy to achieve (even using herbicides), and indeed all these weeds are utilised by a number of insects and birds. A new weed pulling machine the 'Eco-Puller' is under continuing development by English Nature primarily for Ragwort control, but also for thistles and nettles. There is also a hand held weed puller see the table on page 3.

There are many situations, however, where herbicides are necessary, such as in grassland that is being deintensified and traditional management reinstated to encourage wildflowers. Indeed herbicides are the only really effective way to control high populations of some weed species. With one possible exception there is no herbicide selective enough for overall spraying of weeds in grassland managed for species diversity, and so the following combinations of selective application technique and herbicide can be considered.

HERBICIDE APPLICATION TECHNIQUES

- **Spot-spraying (knapsack)**

To prevent spray drift on to desirable species a shroud should be fitted over the nozzle and just the centre of each weed given a brief squirt, not a soaking. The use of Glyphosate can result in small temporary patches of bare soil which can be beneficial to insects (which use the warm bare ground), and can also provide useful germination sites for dormant grass and wildflower seed. (This may include Dock

or Thistle seed!). Surrounding grasses rapidly grow over any small bare patches. Small bare patches can also be utilised in autumn for enhancing the sward using local provenance seed or wildflower plant plugs as appropriate. The use of other herbicides such as Grazon 90 (see below) will leave grasses unaffected.

- **Weed-wiping (hand-held)**

Creeping Thistle and Docks may be controlled selectively using a hand-held weed-wiper. This technique ensures that herbicide is placed precisely where it will be effective by wiping onto taller weeds only, and nowhere else. Herbicide should be applied through the weed-wiper either neat (amenity formulations of Glyphosate - see point 3. under 'legislation' below) or in part-diluted form e.g. 1 part to 1 or 2 parts water - always check the product label. Optimum timing is when the Thistles and Docks are well grown above the surrounding vegetation, but before flowering. The hand-held weed-wiper which costs under £50, and a leaflet on its use can both be obtained by post direct from the manufacturers BFS (see 'further information' below). The normal-flow, angled, double wick model is most appropriate for field use.

- **Weed-wiping (tractor-mounted)**

The herbicide should be applied only when a sufficient height differential exists between the sward and the target weeds. To achieve this the sward may need grazing shorter than normal in spring, or in the case of hay meadows by grazing the aftermath short and treating the regrowth (of Creeping Thistle in particular) in autumn. Two passes in opposite directions are recommended. It may be possible to hire a contractor for this operation which can be relatively costly for small acreages. A number of different versions of machine exist but only a few contractors have one. (Your local FWAG adviser may know who has what). Dilution rates and timing are as for the hand-held weed-wiper above.

HERBICIDES

The following agricultural herbicides are suitable for spot-spraying or weed-wiping Thistles, Docks, Nettles and Ragwort for long-term control except where stated:

- Glyphosate (Round-up and other trade names) - non-selective i.e. controls grasses and most herbaceous species. Amenity formulations of Glyphosate for non-professional landowners are available from home garden suppliers (see under 'Legislation' below for definition and explanation).
- Clopyralid + Triclopyr (Grazon 90) - selective i.e. controls many herbaceous species including brambles, but not grasses (less effective on ragwort than 2,4-D and Round-up).
- Clopyralid (Shield) - very selective i.e. extremely effective on Thistles, but not Docks, Nettles or grasses. Also controls or affects other compositae, some umbelliferous and leguminous species including clovers (approved 'off-label' for use through weed-wiper, and fully approved through knapsack sprayer). Best choice for Creeping Thistle.

* The one exception where overall spraying could be considered is using Shield for the control of Creeping Thistle where few wildflowers are present. This could be for example on agriculturally improved grassland which will subsequently be managed less intensively to encourage wildflowers. The incidental control or suppression of White Clover by Shield can also be useful in this situation.

- 2,4-D (various trade names) - selective i.e. controls Ragwort (pre-flowering) and other herbaceous species but not grasses. Cheaper, but ineffective on Docks and only short term control of Thistles and Nettles compared with other products. Best choice for just Ragwort - through knapsack sprayer only.

IMPORTANT NOTES

1. All of these herbicides must be applied to green foliage and work within the plant to kill down to the roots (by translocation). Therefore the greater the amount of green leaf per plant, and also the more actively the plant is growing, the greater the uptake and the better the control. Late spring, and/or autumn after regrowth following topping or mowing are usually best. Evening application can increase the effectiveness of some products such as Glyphosate. A follow-up application may be needed one year later for maximum control. Control may be disappointing if these points are not taken into account.
2. All of these herbicides are rapidly rendered inactive, but stock should be removed from fields treated with Grazon 90 (7 days), Shield (7 days), and 2,4-D (14 days). Where Ragwort has been treated (including by Glyphosate) the plants become palatable and so to avoid Ragwort poisoning stock should be removed until the Ragwort has disappeared completely. Read label thoroughly for up-to-date details including appropriate dose rates and timings etc

LEGISLATION

All pesticides are covered by strict regulations to ensure safety to both the user and the environment. The law states that a written recommendation should first be obtained from a BASIS qualified supplier or agronomist who has seen the problem in the field, and that the landowner needs to be a professional farmer or grower in order to buy and / or apply professional agricultural products on his own land. A professional landowner will have a Defra landholding number and will need such a professional product for his or her own trade, business or occupation. So-called non-professional landowners have the following options:

1. Employ a certificated contractor to both supply and apply the herbicide.
2. Attend local training course approved by National Proficiency Test Council 024 7669 6553 to obtain certificate for appropriate application method (e.g. knapsack, weed-wiper).
3. Use only amenity formulations of Glyphosate obtainable from home garden suppliers such as garden centres, and apply through either a knapsack sprayer or a hand-held weed-wiper.

N.B. The product label should always be read thoroughly before use.

On fields designated as SSSI (Site of Special Scientific Interest), or under management agreements such as the CSS (Countryside Stewardship Scheme) and ESA (Environmentally Sensitive Area) soon to become part of the new Environmental Stewardship Scheme, consent will need to be obtained from the local office of the relevant organisation:

SSSI English Nature: CSS & ESA (part of the new Environmental Stewardship Scheme) Defra

Further information

Information on the 'Eco-Puller' and Conservation Land Management (ENACT) magazine - now called Conservation Land Management	British Wildlife Publishing	01256 760663 enquiries@britishwildlife.com
'Eco-Puller' manufacturer	Alvan Blanch Development Co Ltd	01666 577333 info@alvanblanch.co.uk
Mechanical hand held puller (for smaller sites)	Lazy Dog Tool Company	www.lazydogtoolco.co.uk 01751 417351
Leaflet and hand-held weed-wiper	The Micro-wipe - BFS Billericay Farm Services	01268 710237 sales@bfs.uk.com
Hand-held & Amenity Sprayers Handbook Price £10.00 REVISED EDITION	The British Crop Protection Council	01420 593200 md@bcpc.org

REFERENCES

- Lowland Grassland Management Handbook (English Nature and The Wildlife Trusts, 1994).
- John Seddon of BASIS (pers. comm.)
- 'Pulling Tall Weeds' article in ENACT magazine Vol. 6, No. 2 summer 1998, Control of Established Perennial Weeds in Grassland Managed for Species Diversity: Creeping and Spear Thistle, Common and Marsh Ragwort, Broad-leaved and Curled Dock Extract from Lowland Grassland Management Handbook (English Nature & The Wildlife Trusts, 1994 - sect 4:23 - 4:26)
- Ralph Hobbs June 1998 - Updated by Weald Meadow Initiative 2005

FURTHER INFORMATION

Having read through this leaflet, looked at your site, checked what equipment and skills you will need and studied the suggested timetable and the tasks required, you may have other questions or need further advice before you can get started. WMI can help with information and advice and can point you towards other specialist.

If you are in the Countryside or Environmental Stewardship Scheme, managing larger areas of grassland, it would be advisable to speak to WMI or to an adviser at the Farming & Wildlife Advisory Group who will be able to help and also refer you to related government agencies such as Defra who you may need to consult if you wish to carry out weed control.

WEALD MEADOWS INITIATIVE

The Weald Meadows Initiative (WMI) aims to enable the traditional management of unimproved meadows and the successful establishment of new species-rich grasslands in the High and Low Weald. Recognising the need for wildflower management and creation to be financially viable, it pro-actively develops and markets added value grassland products.

It is a public private partnership between the High Weald AONB Unit, Agrifactors (Southern) Ltd, the Farming & Wildlife Advisory Group (FWAG) and landowners and managers.

AGRIFACTORS

Agrifactors (Southern) Ltd was incorporated in 1970 as an agricultural and horticultural merchant specialising in the supply of grass, clover, forage, fodder, vegetable and flower seeds to farmers, horticulturalists and amenity users in West Kent, East and West Sussex and Surrey. The knowledge built up since 1970, matching varieties and mixtures to soil type, location and specific climatic conditions within their trading area enable it to formulate and mix agricultural and amenity seeds to the users specific requirements. Its association with the High Weald AONB Unit, the Weald Meadows Initiative and FWAG since 1995 has developed into a worthwhile partnership enabling it to provide a seed source of known local provenance for Environmental Stewardship Schemes within the High Weald. Most of the people involved in the harvesting, drying, cleaning, mixing and despatch of this seed live locally, so that this activity supports the local community.

FWAG

The Farming and Wildlife Advisory Group is a national group led locally by farmers and local organisations. It provides the farming community with a source of independent confidential advice on the management and improvement of existing wildlife and landscape features whilst integrating environmentally responsible, cost effective methods and techniques supported by sources of grant aid and practical assistance.

HIGH WEALD AREA OF OUTSTANDING NATURAL BEAUTY

The High Weald AONB is a historic landscape of rolling hills draped with small irregular fields, abundant woods and hedges, scattered farmsteads and sunken lanes. It was designated an Area of Outstanding Natural Beauty (AONB) in 1983 to aid its protection and management. It covers 563 square miles at the heart of South East England. Wildflower grasslands are a valued feature of the High Weald AONB.

DEFRA and ENGLISH NATURE may be able to offer help and advice.

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