

The Royal Horticultural Society

Horticultural Advisory Services

February 2011



Weedkillers for Amateur Gardeners

Some herbicide products listed in this leaflet under their manufacturers' names may be available from retail outlets as 'own brand' products with the retailers' own labelling. It is not practical to list all of these. The name of the active ingredient must, by law, appear on the label, but it may be in very small print and should be carefully checked. In a small number of cases, a product that works by physical action only may not indicate on the label what its active ingredient is. These are given where possible in the Advisory Leaflets.

Please note that inclusion of a product on a leaflet does not indicate a recommendation of that product by the RHS for the uses specified on the label. It must also be emphasised that the RHS is not liable in any way for any consequences which may ensue from the use of herbicides by amateur gardeners.

All garden chemicals on sale in the United Kingdom are safe when used according to the manufacturers' instructions. Most proprietary products have been issued with a MAPP or HSE number which can be found on the pack. Some products on this leaflet, such as the seaweed extract for patio cleaning, do not require MAPP or HSE numbers. For the most effective and safe use of herbicides the following general rules should be observed:

1. Use chemicals only when they are really necessary. Prevention is almost invariably better than cure and many weeds can be kept down by good cultivation techniques such as hoeing, mulching, mowing and digging and improving drainage of heavy soils.
2. You must select a chemical which is recommended for the particular purpose you have in mind. Always read the label before choosing a product.
3. Do not purchase large amounts of pesticides that will take many years to use up. If only a few plants require treatment, a ready-to-use spray is likely to be the best answer.
4. Always read the manufacturers' label and check for any limitations or specific precautions you should take. As an added precaution you could wear rubber gloves, particularly when handling concentrates or when spraying.
5. Follow all the instructions on the manufacturers' label and apply the chemical at the stated rate and in the manner described. It is a legal requirement to comply with the Statutory Conditions indicated on the label.
6. Make sure you are spraying at the correct times and intervals. This is often crucial for the control of a weed.
7. It is illegal to mix two chemicals together to give a combined spray unless this is recommended on the label or leaflet.
8. Avoid contact with exposed parts of the body, particularly the eyes. Wash off any splashes immediately with clean water.
9. Avoid breathing in sprays. Wash after using sprays.
10. Make sure no children or animals are in the vicinity when spraying.
11. Do not smoke, eat or drink while spraying.
12. Spray sufficiently to wet the plants without excessive run-off or drift, but thoroughly wet the stems, buds and the underside as well as the upper surface of the leaves.
13. Do not spray in windy or very sunny weather.
14. Clean all equipment after spraying. DO NOT use apparatus that have contained herbicides for the application of other substances such as fertilisers or water.
15. Always try to make up only sufficient solution for the task. Left-over spray must not be poured down the drain.
16. Store chemicals in a safe place away from children and pets, keeping them tightly closed and in their original containers.

The following list comprises herbicides that should be readily available in garden centres, DIY stores, etc. You should be aware that it is ESSENTIAL you check the statutory conditions of use and directions of use on the herbicide label to check the situation in which the individual herbicide can be used. For more information on approved chemicals and safe pesticide use, visit the website of the Pesticides Safety Directorate: www.pesticides.gov.uk/garden_home.asp

1. Hormone-type Herbicides:

Chemicals such as 2,4-D, mecoprop-P, MCPA and dicamba are described as 'hormone' weedkillers as they mimic plant hormones, causing characteristic twisted or distorted growth when applied to weeds. These herbicides are selective, targeting broad-leaved weeds and leaving narrow-leaved plants (grasses) unharmed at the normal dilution rate. Because of this they are used on lawns or rough grassland. Hormone weedkillers are foliar-acting and translocated, moving down into the weeds' roots when applied to the foliage. They also tend to be slightly residual, remaining in the soil for a few weeks after application.

Avoid using lawn herbicides on newly-turfed or seeded lawns and do not use the first lawn clippings after application on the compost heap. Products containing clopyralid can be especially persistent. Again, the first clippings should not be composted and the next three mowings should be used as a mulch only after composting for at least 9 months. To avoid possible contamination of compost, do not collect the clippings at all but mow frequently and allow the short clippings to remain on the surface of the lawn. These will quickly disperse to leave an acceptable finish. Very often lawn weedkillers are combined with fertilisers and/or mosskillers.

a) Rough grassland weedkillers

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
triclopyr	SBK Brushwood Killer	Vitax Ltd	liquid concentrate
triclopyr	SBK Brushwood Killer Ready to Use	Vitax Ltd	ready-to-use spray

b) Lawn weedkillers

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
2,4-D/mecoprop-P/dichlorprop-P	Improved Lawn Weedkiller	Doff Portland Ltd	liquid concentrate
2,4-D/mecoprop-P/dichlorprop-P	Improved Lawn Spot Weeder	Doff Portland Ltd	ready-to-use spray
2,4-D/dicamba/mecoprop-p/MCPA	Resolva Lawn Weedkiller Concentrate	Westland Horticulture	liquid concentrate
MCPA/dicamba/mecoprop-p	Resolva Lawn Weedkiller Ready to Use	Westland Horticulture	ready-to-use spray
MCPA/mecoprop-P/dicamba	Lawn Weedkiller 2	Bayer CropScience Ltd	ready-to-use spray
clopyralid/2,4-D/MCPA	LawnClear 2	Vitax Ltd	liquid concentrate
clopyralid/2,4-D/MCPA	LawnClear 2 Ready to Use	Vitax Ltd	ready-to-use spray
fluroxypyr/MCPA/clopyralid	Verdone Extra	The Scotts Company (UK) Ltd	liquid concentrate
fluroxypyr/MCPA/clopyralid	Verdone Extra Ready to Use	The Scotts Company (UK) Ltd	ready-to-use spray

c) Lawn weedkillers with fertiliser

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
2,4-D/mecoprop-P/dichlorprop-P plus NPK	Improved Lawn Feed & Weed	Doff Portland Ltd	liquid concentrate
2,4-D/dicamba plus NPK	Scotts Lawn Builder Lawn Food plus Weed Control	The Scotts Company (UK) Ltd	granules
MCPA/dicamba plus NPK	Green Up Lawn Liquid Feed & Weed	Vitax Ltd	liquid concentrate
MCPA/mecoprop-P/dicamba plus N	EverGreen Feed & Weed Liquid	The Scotts Company (UK) Ltd	liquid concentrate

d) Lawn weedkillers with fertiliser and mosskiller

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
ferrous sulphate/2,4-D/ mecoprop-P plus NPK	Lawn Feed, Weed & Mosskiller	Westland Horticulture	granules
ferrous sulphate/2,4-D/ mecoprop-P plus NPK	Lawn Feed, Weed & Mosskiller	Garden Direct	granules
ferrous sulphate/2,4-D/ mecoprop-P plus N and K	Green Up Lawn Feed & Weed Plus Mosskiller	Vitax Ltd	powder
MCPA/mecoprop-P/ ferrous sulphate plus NPK	EverGreen Complete	The Scotts Company (UK) Ltd	granules
MCPA/dichlorprop-P/ ferrous sulphate plus NPK	J. Arthur Bower's Lawn Feed Weed & Mosskiller	William Sinclair Horticulture Ltd	granules
MCPA/dichlorprop- P/dicamba/ferrous sulphate plus NPK	EverGreen Complete Soluble	The Scotts Company (UK) Ltd	soluble powder

2. Mosskillers, Algae and Water Butt Purification

Mosskillers have been formulated to control moss on lawns, borders and/or hard surfaces (check manufacturers' statutory conditions). Mosskillers work by contact action, only some being selective when used at the correct concentration. Never use ferrous sulphate on hard surfaces as it will stain.

Algae killers also work in contact action and are mainly approved for use on hard surfaces, although the products based on pelargonic acid and fatty acids also have approval for use around trees and ornamental plants. Most are fairly water-soluble and so have poor residual properties, providing little long-term control.

Please note that a number of the products in sections b) and c) are non-chemical and work through mechanical, enzymatic or microbial action. Other garden cleaning products are also available.

a) Lawn mosskillers

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
ferrous sulphate	Lawn Moss Killer Spray	Doff Portland Ltd	ready-to-use spray
ferrous sulphate	Green Up Mossfree	Vitax Ltd	soluble powder
ferrous sulphate plus N	Lawn Sand	Garden Direct	sand
ferrous sulphate plus N	Lawn Sand	Westland Horticulture	granules
ferrous sulphate plus N	Green Up Lawn Sand	Vitax Ltd	sand
ferrous sulphate plus N	J. Arthur Bower's Lawn Sand	William Sinclair Horticulture Ltd	sand
ferrous sulphate plus NPK	EverGreen Autumn	The Scotts Company (UK) Ltd	granules
ferrous sulphate plus NPK	Supergreen Mosskiller & Lawn Tonic	Bayer CropScience Ltd	soluble powder
ferrous sulphate plus NPK	EverGreen Mosskil Soluble	The Scotts Company (UK) Ltd	soluble powder
ferrous sulphate plus NPK	J. Arthur Bower's Autumn Lawn Food & Mosskiller	William Sinclair Horticulture Ltd	granules
ferrous sulphate plus NPK	Autumn Lawn Feed & Moss Killer	Westland Horticulture	granules
ferrous sulphate plus NPK	Scotts Lawn Builder Lawn Food plus Moss Control	The Scotts Company (UK) Ltd	granules

b) Moss and algae killers (not lawn)

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
acetic acid	Algon Organic Path and Patio Cleaner	Algon Ltd	liquid concentrate
acetic acid	Natural Path and Patio Cleaner	Doff Portland Ltd	liquid concentrate
benzalkonium chloride	Mould Attack	Doff Portland Ltd	ready-to-use spray
benzalkonium chloride	Patio Magic	The Scotts Company (UK) Ltd	liquid concentrate
benzalkonium chloride	Deck & Fence Magic	The Scotts Company (UK) Ltd	liquid concentrate
benzalkonium chloride	Pathclear Gun! Moss & Algae Killer	The Scotts Company (UK) Ltd	liquid concentrate
enzyme action	Growing Success Concentrated Greenhouse cleaner	William Sinclair Horticulture Ltd	liquid concentrate
fatty acids	Advanced Mosskiller	Bayer CropScience Ltd	ready-to-use spray
garden cleaner/disinfectant based on para-chloro-meta-cresol	Jeyes Fluid	Jeyes UK	liquid concentrate
hydrochloric acid	Path & Patio Liquid Cleaner	Vitax Ltd	liquid concentrate
nitrilo triacetic acid/trisodium salt	Path & Patio Cleaner	Bayer CropScience Ltd	liquid concentrate
non-acid surface cleaner	Jeyes Fluid Path, Patio and Drive Cleaner	Jeyes UK	liquid concentrate
pelargonic acid	Finalsan Moss & Algae Killer	Vitax Ltd	ready-to-use spray
pelargonic acid	Finalsan Moss & Algae Killer	Vitax Ltd	liquid concentrate
pelargonic acid	Weedol Max Gun!	The Scotts Company (UK) Ltd	ready-to-use spray
pelargonic acid	Weedol Max	The Scotts Company (UK) Ltd	liquid concentrate
quatarnary ammonium compounds	Patio and Decking Cleaner	Doff Portland Ltd	soluble sachet
quatarnary ammonium compounds	Green Cleaner	Bayer CropScience Ltd	soluble sachet
surfactant based on seaweed	Just Patio and Concrete Cleaner	Just Green Ltd	liquid concentrate
surfactant based on seaweed	Just Glasshouse Cleaner	Just Green Ltd	liquid concentrate

c) Water butt purification

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
naturally-occurring beneficial micro-organisms	Water Butt Fresh	AquaHydrotech Ltd	liquid concentrate
naturally-occurring plant extract	Water Butt Treatment	Biotal Ltd	liquid concentrate
naturally-occurring plant extract	Just Water Butt Cleaner	Just Green	liquid concentrate
potassium permanganate	Potassium Permanganate	Garden Direct	crystals

3. Contact Herbicides:

Contact herbicides are non-selective and non-residual and work simply by scorching off weed foliage. This makes the ready-to-use formulations ideal for controlling annual weeds and perennial weed seedlings growing in between garden plants, which can simply be protected using polythene, cardboard or an upturned bucket.

*These products work by both contact and systemic action.

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
acetic acid	Doff Fast Acting Natural Weed Spray	Doff Portland Ltd	ready-to-use spray
diquat	Weedol 2	The Scotts Company (UK) Ltd	water soluble granules
fatty acids	Advanced 3 Hour Weedkiller	Bayer CropScience Ltd	ready-to-use spray
fatty acids	Natria Super Fast Weedkiller	Bayer CropScience Ltd	ready-to-use spray
*glyphosate/diquat	Resolva 24H Liquid Concentrate	Westland Horticulture	liquid concentrate
*glyphosate/diquat	Resolva 24H Ready to Use	Westland Horticulture	ready-to-use spray
pelargonic acid	Weedol Max Gun!	The Scotts Company (UK) Ltd	ready-to-use spray
pelargonic acid	Weedol Max	The Scotts Company (UK) Ltd	liquid concentrate
pelargonic acid/maleic hydrazide	Finalsan Ultima Weedkiller	Vitax Ltd	ready-to-use spray
pelargonic acid/maleic hydrazide	Finalsan Ultima Concentrate	Vitax Ltd	liquid concentrate

4. Systemic Herbicides:

Systemic herbicides are non-selective and non-residual. They differ from contact herbicides in that when applied to the foliage the herbicide moves down into the root system of the weed. This makes systemic herbicides ideal for controlling deep-rooted perennial weeds. The most effective time for spraying glyphosate is mid- to late summer when the weed has a large surface area. *These products work by both contact and systemic action. **These products contain a selective broad-leaved weedkiller as well as glyphosate.

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
glyphosate	Tumbleweed	The Scotts Company (UK) Ltd	liquid concentrate
glyphosate	Tumbleweed Ready to Use	The Scotts Company (UK) Ltd	ready-to-use spray
glyphosate	Roundup GC	The Scotts Company (UK) Ltd	liquid concentrate
glyphosate	Roundup Ultra 3000	The Scotts Company (UK) Ltd	liquid concentrate
glyphosate	Roundup Tree Stump & Rootkiller	The Scotts Company (UK) Ltd	liquid concentrate
glyphosate	Glyphosate Concentrate Kills Weeds & Roots	Bayer CropScience Ltd	liquid concentrate
glyphosate	Glyphosate Ready to Use Kills Weeds & Roots	Bayer CropScience Ltd	ready-to-use spray
glyphosate	Super Strength Glyphosate	Bayer CropScience Ltd	soluble sachet
glyphosate	Tree Stump Killer	Bayer CropScience Ltd	soluble sachet
glyphosate	Doff NEW Tree Stump & Tough Weedkiller	Doff Portland Ltd	soluble sachet
glyphosate	Doff NEW Systemic Path & Patio Weedkiller Concentrate	Doff Portland Ltd	soluble sachet
glyphosate	Doff Concentrated Glyphosate Weedkiller	Doff Portland Ltd	liquid concentrate
glyphosate	Doff Super Concentrated Tough Weeds and Brushwood Killer	Doff Portland Ltd	liquid concentrate
glyphosate	Knockdown Systemic Weedkiller Spray	Doff Portland Ltd	ready-to-use spray
glyphosate	Knockdown Systemic Path & Patio Weedkiller	Doff Portland Ltd	ready-to-use spray
glyphosate	Weed Buster	Westland Horticulture	ready-to-use spray
glyphosate	Deep Root Ultra Path & Patio Weedkiller	William Sinclair Horticulture Ltd	ready-to-use spray
glyphosate	Bramble Killer Ultra	William Sinclair Horticulture Ltd	ready-to-use spray
glyphosate	Deadfast Weedkiller	William Sinclair Horticulture Ltd	soluble sachet
glyphosate	Deep Root Ultra Tree Stump & Weedkiller	William Sinclair Horticulture Ltd	granules
glyphosate	Resolva Total Clear Concentrate	Westland Horticulture	liquid concentrate
*glyphosate/diquat	Resolva 24H Liquid Concentrate	Westland Horticulture	liquid concentrate
*glyphosate/diquat	Resolva 24H Ready to Use	Westland Horticulture	ready-to-use spray
*glyphosate/ pelargonic acid	Fast Action Roundup Ready to Use	The Scotts Company (UK) Ltd	ready-to-use spray
*glyphosate/ pelargonic acid	Roundup XL Tough and Deep Root Weedkiller	The Scotts Company (UK) Ltd	ready-to-use spray
**glyphosate/pyraflufen ethyl	Weedol Rootkill Plus	The Scotts Company (UK) Ltd	liquid concentrate
**glyphosate/pyraflufen ethyl	Weedol Gun! Rootkill Plus	The Scotts Company (UK) Ltd	ready-to-use spray

5. Residual Herbicides:

Residual herbicides can be either soil-acting or foliar-acting, the herbicide remaining in the soil for weeks or months, depending on the properties of the individual active ingredients. Some can be used with care around plants, whereas others can only be used in uncultivated areas and/or hard surfaces. As these herbicides are non-specific as well as residual it is especially important to check the label before use. **Please note:** The active ingredient sodium chlorate has been withdrawn from sale for amateur use. Gardeners should use up any stock by 10 May 2010.

<u>Active Ingredient</u>	<u>Proprietary Name</u>	<u>Manufacturer/Source of Supply</u>	<u>Formulation</u>
glyphosate/flufenacet/metosulam	Path Weedkiller Ready to Use	Bayer CropScience Ltd	ready-to-use spray
glyphosate/flufenacet/metosulam	Path Weedkiller Concentrate	Bayer CropScience Ltd	soluble sachet
glyphosate/flufenacet/metosulam	Long Lasting Ground Clear	Bayer CropScience Ltd	soluble sachet
glyphosate/oxadiazon/diflufenican	Pathclear Gun! Weedkiller	The Scotts Company (UK) Ltd	ready-to-use spray
glyphosate/oxadiazon/diflufenican	Pathclear Weedkiller PC	The Scotts Company (UK) Ltd	soluble powder
glyphosate/diflufenican	Pathclear Weedkiller LC	The Scotts Company (UK) Ltd	liquid concentrate

ALWAYS READ THE LABEL: USE HERBICIDES SAFELY

Herbicide Legislation:

Some garden herbicides have been withdrawn from the market recently (see individual sections) or have had their label recommendations changed. If you possess any out-of-date chemicals, contact your local authority's waste disposal section for advice on suitable disposal sites.

Manufacturers/Distributors:

Company Name	Address	Telephone	Website
Algon Ltd.	Unit 3, Ribble Saw Mill, Paley Road, Preston, Lancashire, PR1 8LT	(01772) 823370	www.algonorganics.co.uk
AquaHydrotech Ltd.	Ashbourne House, Waterperry Court, Middleton Road, Banbury, Oxfordshire, OX16 4QG	(01295) 273676	www.aquahydrotech.com
Bayer Garden	Bayer CropScience Limited 230 Cambridge Science Park Milton Road, Cambridge CB4 0WB	(0845) 3454100	www.bayergarden.co.uk
Biotall Ltd.	Collivaud House, Ocean Way Cardiff CF24 5PD	(029) 2047 5550	www.biotall.co.uk
Doff Portland Ltd.	Aerial Way, Watnall Road, Hucknall, Nottingham NG15 6DW	(0870) 2204570 (0115) 9834300	www.doff.co.uk
Garden Direct	The Garden Centre, Birchall Lane, Cole Green, Hertford SG13 7WN	(0845) 2170788	www.gardendirect.co.uk
Jeyes UK, Jeyes Ltd.	Brunel Way, Thetford, Norfolk IP24 1HF	(01842) 757575	www.jeyes.co.uk
Just Green Ltd.	Unit 14 Springfield Road Industrial Estate, Burnham-on-Crouch, Essex CM0 8UA	(01621) 785088	www.just-green.com
The Scotts Company (UK) Ltd.	Salisbury House, Weyside Park, Catteshall Lane, Godalming, Surrey GU7 1XE	(0845) 1901881 (01483) 410334	www.lovethegarden.com
Vitax Ltd.	Owen Street, Coalville, Leicestershire LE67 3DE	(01530) 510060	www.vitax.co.uk
Westland Horticulture	14 Granville Industrial Estate, Granville Road, Dungannon, County Tyrone BT70 1NJ	(028) 8772 7500	www.gardenhealth.com
William Sinclair Horticulture Ltd.	Firth Road, Lincoln LN6 7AH	(01522) 537561	www.william-sinclair.co.uk

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