



WeedSwiper

Technical Guide

WeedSwiper is a unique non-drop weed wiper with supply-on-demand chemical feed.

It is highly versatile and suitable for use in a wide range of situations which include:

Arable:

- weed beet and bolters in sugar beet
- volunteer oilseed rape in strawberries
- fathen in salad and vegetable crops
- volunteer potatoes in carrots, parsnips, leeks, onions and other vegetables

Grassland:

- ragwort, thistles, nettles, docks and other weeds

Marshland:

- hard and soft rush (juncus)

Moorland:

- bracken, gorse, bramble, etc.
- tree re-growth e.g. silver birch

Conservation Schemes:

- ESA's, SSSI's, ELS, HLS, etc.

Waterways:

- rushes, reeds, etc. in and around water

Unique features of the WeedSwiper include:

- **SUPPLY-ON-DEMAND.** Automatic control of fluid flow to the contact pads via the patented sensors and Hydrostat control system
- Contact pads manufactured from R12, a strong, tufted material that holds fluid until a target plant is swiped
- Pad material with extremely good fluid retention properties
- 150mm (6") deep pads provide a large fluid transfer area ensuring adequate dose of active ingredient (a.i.)
- All units can be folded and operated at narrower widths than their overall working width, and have simple boom end break-back return system
- Pad height can be altered on all units to suit the terrain, weed height, etc.

Fluid control to the contact pads:

- The unique Hydrostat controller has variable settings to control the pump output to the pads, replacing fluid only when it has been swiped onto the target plant
- Hydrostat settings of 0-9 reflect the dilution rate of the a.i.
- Sensors in the pad material constantly measure pad wetness and, via the Hydrostat control system, replace fluid only as it is required
- The pad cannot receive more fluid than the chosen Hydrostat setting allows hence preventing a.i. from reaching non-target plants
- Hydrostat settings can be altered 'on the move' if required

Tanks:

- Every WeedSwiper is supplied with 2 tanks, one for the a.i. mixture, the other for clean water

The clean water tank is used to:

1. Wet the pads to near saturation point **PRIOR** to any work being carried out
2. Rinse the WeedSwiper through **AFTER** work. Detergent and brushing may also be required to clear any plant wax and soil from the pads



NB. ALWAYS pre-mix the a.i. solution **BEFORE** putting it into the tank

WeedSwiper Target Plants

The WeedSwiper can control weeds growing at least 150mm (6") above the desired plant species. Weeds in arable, grassland, forestry, vineyards and amenity situations can be controlled.

EXAMPLES OF TARGET WEEDS INCLUDE: ragwort, thistles, nettles, docks, bracken, gorse, heather, broom, bramble, weed beet, wild chrysanthemum, fathen, wild oats, reed, bulrush, sedge, soft rush, ground elder, Japanese knotweed, giant hogweed, rosebay willow herb, silver birch re-growth, hazel, rhododendron plus volunteer arable crops e.g. potatoes, oilseed rape, etc.

WeedSwiper Control of Weeds in Grassland

These weeds can be found in grassland, upland, hill or marsh grazing, forestry plantations, amenity situations, heath and common land, orchards, vineyards, etc. The list includes those injurious plants listed in the Weed Act 1959 as; spear thistle, creeping or field thistle, curled and broad leaved dock and common ragwort. DEFRA can take action where there is a risk of injurious weeds spreading from neighbouring land. The list also includes Japanese knotweed, regarded as the most invasive plant in Britain, scheduled under the Wildlife and Countryside Act 1981 and the Environment Protection Act 1990. It is classified as controlled waste, spread by rhizomes and from cut stems which can regenerate. Some of these plants are poisonous:

RAGWORT: as listed in the Weed Act 1959. Poisonous to horses and cattle, occasionally sheep. Very unpalatable when green and growing. Dangerous when cut in hay or when wilting or decomposing after treatment. Contains alkaloids that accumulate in the liver and are not excreted over time. Stock **MUST** be kept out of treated areas for **AT LEAST** four weeks. Horses should be found alternative grazing for longer periods. Treated plants can be removed and burnt. Translocation of any a.i. should be complete within two weeks of treatment although complete collapse may take longer.

BROOM: Alkaloid poisons are present in this plant.



RUSH: Hard and blue rush can be poisonous.

BRACKEN: Some one million acres affected in the UK alone. The rhizome and green areas of this fern are poisonous. Cattle, sheep, horses and pigs can be affected. Both spores and rhizomes spread bracken. Spores released in September are carcinogenic when ripe and should be avoided. The WeedSwiper should be used on fully extended fronds in July and August. Herbicide will translocate to the root rhizomes and reduce the vigour or kill the frond rhizome, hence reducing the vigour of the bracken area. This could take between two and five treatments to control. Glyphosate mixtures of between one part glyphosate in five parts water to one part glyphosate in twenty parts water have been effective.

ANIMALS must be **KEPT AWAY** from wilting bracken and **SHOULD NOT** be returned until after the bracken has disintegrated.

WeedSwiper Control of Weeds in Grassland (continued)

HEMLOCK, HEMLOCK WATER DROPWORT and **COWBANE** are also toxic plants.

PLEASE NOTE: As the WeedSwiper is designed as a non-drip, supply on demand weed wiper then various dilution rates of glyphosate e.g. Roundup are normally the product of choice where there is a height difference between the plant to be preserved compared to the plant to be removed of at least 150mm (6").

Selective products may also be used through the WeedSwiper.

Most grassland weed plants will be controlled using glyphosate. Plants will be most sensitive to control, and present the best target, when approaching or during the early flowering stage. By the late flowering / early seed set stage, sensitivity and translocation will be reduced and the plants may not collapse and decompose. Seed viability can still be significantly reduced which, in turn, will help in reducing regeneration of that species.

Intensive grazing, just before treatment with the WeedSwiper, will allow improved contact for the contact pads with the target weeds, therefore reducing any damage to the desired grassland species.

Dense weeds may require a further treatment.

The following products have clearance for use through weed wipers:

GLYPHOSATE 360 g/l

Test clearance. Marketed as Roundup from Monsanto, plus numerous other branded products from various manufacturers.

Note: Glyphosate 360 g/l formulations, at the following dilution rates, have been used: 1 to 1 part water (50%) through to 1 to 3 parts water (25%). Dilution rates may be 1 to 10 parts water through to 1 to 20 parts water when the weeds are lush and green. Where glyphosate 360 g/l is being used at 1 part glyphosate to 2 parts water the Hydrostat setting should be set somewhere around number 7 or 8 on the control box.

CHLORPYRALID 200 g/l

Text clearance. Marketed as Dow Shield from Dow Agchem. NFU SOLA No. 0662/92. Maximum dose 1 l/ha per year. Target – thistles in established grassland.

CHLORPYRALID & TRICLOPYR – 60:240 g/l

Text clearance. Marketed as Grazon 90 from Dow Agchem. NFU SOLA No. 692/95. Target – woody weeds.

2 4-D + DICAMBA + TRICLOPYR – 200:85:65 g/l

Text clearance. Marketed as Nufarm Nu-shot from Nufarm Whyte Ltd., or Broadsword from United Phosphorous.

Note: All precautions regarding toxic plants and return of stock to treated areas apply, as do all label precautions, recommendations and maximum dose restrictions.



Operators Guide to Successful Use of the WeedSwiper

1. Weeds must be at least 150mm (6") taller than the crop canopy to ensure no risk of damage to the desired plant species.
2. Treat weeds as they become tall enough to be swiped, more than once if necessary, with successive treatments carried out in the opposite direction to the previous one.
3. ALWAYS use one tank for a.i. mix and the other tank for clean water. Having decided which tank is for what purpose thereafter NEVER change its use.
4. NEVER operate the pump with the tank outlet tap closed.
5. AVOID excessive forward speeds (above 10 kph).
6. Use water only to thoroughly wet the pad material PRIOR to any treatments.
7. Where water from the clean water tank has been used to wet the pads remember to CLOSE the tap on the clean water tank and OPEN the tap on the a.i. mixture tank BEFORE continuing.
8. PRE-MIX the chosen product PRIOR to putting into the tank and avoid mixing more a.i. mixture than is required for the task. Dilution rates will vary depending upon weed maturity.
9. Start work with only half a tank of mixture to evaluate product use compared to weed density. This will help to avoid the need to dispose of excess product mix.
10. ALWAYS endeavour to prevent the pads from dripping a.i. mixture into the crop canopy by choosing the correct Hydrostat setting for the a.i. mixture.
11. IMPORTANT. When working on hillsides that are too steep to travel up and down it is advisable, where possible, to work these areas in runs of no more than 200 metres long across the hill to ensure the product does not concentrate at one end of the pads.
12. Site the WeedSwiper in a designated area to avoid pollution. Set the Hydrostat to 'constant pump' until the pad material drips across the entire width. Reduce the Hydrostat setting until the pump stops. On the first few runs keep nudging the Hydrostat setting up until the pump comes on, then reduce it until the pump stops. Repeat this process until you have determined the 'drip point' of the a.i. mixture. When this point has been reached reduce the Hydrostat setting by a fraction to ensure it is set just below the drip point of the a.i. mix being used. The buzzer will stop at this point.
13. Swipe the first two runs again to ensure weeds are adequately treated as, initially, product takes a little time to reach the pads. IMPORTANT. Always ensure sufficient product mix has run through the pads to be certain the a.i. mixture has reached the pre-mixed dilution rate.
14. ALWAYS wash off and clear the pads of any plant wax or soil which may build up during work.
15. At the end of each task rinse the system through thoroughly with clean water from the rinsing tank. Use the 'constant pump' setting on the Hydrostat box for this purpose.
16. Boom covers are supplied for use when the WeedSwiper is being transported to:
 - a. Prevent damage occurring to the pads, and
 - b. Protect the environment from unintentional contact with contaminated pads.

Examples of WeedSwiper Treatments



Weed beet in sugar beet, swiped after flowering.



Docks swiped early June, photo taken late June.



Fathen in Chicory, swiped late August, photo taken mid September.



Soft rush (*juncus efficus*) often called sedge grass or other local names. This is one of several *juncus* species found in the U.K.



Oilseed rape in strawberries, swiped end March, photo taken end May.



18 month old Silver Birch re-growth. Swiped early May, photo taken late May.

Acknowledgements

Ref: BCPC Publications, The UK Pesticide Guide
Monsanto Product Information Guide, Roundup Biactive 2002
Monsanto Roundup booklet 1990
DEFRA UK Weed Act pages 1-5, 1959
HMSO British Poisonous Plants, A A Forsyth. Ref. Book 161

Micron Group Reserves the right to alter specification and prices without prior notice.

Tractor mounted and trailed models are available, as are various boom widths. The WeedSwiper technology can also be added onto existing suitable equipment, e.g. crop sprayer booms, SPV's, excavators, etc.

An optional bolt-on LGP trailer is available to enable towing behind: ATV's, Landrovers, pick-up trucks, etc.

Enquiries for bespoke units to exactly suit the customers' needs are always welcome.

As this application technology is constantly evolving, please feel free to discuss any proposals to treat a weed species, or to use a chemical product, not mentioned within these guidance notes. We strongly advise adhering to these guidelines.

Due to the extensive variability of field circumstances, weather conditions, etc., Micron Group can offer no warranty whatsoever on these procedures.

For further information regarding the WeedSwiper range of equipment or its uses please contact us at:

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