

SAFETY PRECAUTIONS

Operator protection:

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

DO NOT BREATHE SPRAY.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin and eyes immediately.

WASH HANDS AND EXPOSED SKIN before eating and drinking, and after work.

Environmental protection:

DO NOT CONTAMINATE WATER with the product or its container (Do not clean application equipment near surface water/ Avoid contamination via drains from farmyards and roads).

To protect aquatic organisms, respect an unsprayed buffer zone of 5m to surface water bodies.

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

Storage and disposal:

KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.

RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET

PROTECT FROM FROST

SHAKE WELL BEFORE USE

Triple Rinse Containers, Puncture and Invert to Dry at time of Use



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GROUP 4 HERBICIDES

Product Registration Number: PCS No. 05740

An EC (Emulsifiable Concentrate) containing 403.5 g/L (280 g a.e/L) fluroxypyr meptyl and 12.5 g/L (12 g a.e/L) halauxifen-methyl and 12 g/L cloquintocet-mexyl (safener).

Arylex™ is the commonly used name of halauxifen-methyl active substance.

A post-emergence herbicide for use on a variety of winter cereals (wheat, durum wheat, barley, rye, triticale, spelt, oats and these crops under sown with grass) and spring cereals (wheat, durum wheat, barley, rye, triticale, spelt and these crops under sown with grass) for the control of a wide range of broad-leaved weeds.

FOR PROFESSIONAL USE ONLY

Authorisation Holder:

Corteva Agriscience UK Limited

CPC2 Capital Park, Fulbourn, Cambridge, CB21 5XE, United Kingdom

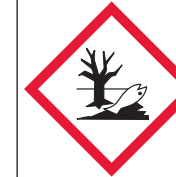
Telephone: (01462) 457272

24 Hour Emergency Telephone Number: 076 680 5288

Technical Hotline: +44 (0) 800 689 8899, e-mail: ukhotline@corteva.com

National Poison Centre (Dublin): 01 8092166

NET CONTENTS : 2 LITRES e



SAFETY INFORMATION

Whorl™

UFI : W1T7-D064-C00N-EVH4

Contains Cloquintocet-mexyl; Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide; Ethylhexanol – May produce an allergic reaction.

Warning

May cause respiratory irritation

May cause an allergic skin reaction

Causes serious eye irritation

Very toxic to aquatic life with long lasting effects

Wear protective gloves/clothing/eye/face protection.

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/ attention.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for triple rinsed empty clean containers which can be disposed of as non-hazardous waste.

TO AVOID RISKS TO HUMAN HEALTH AND THE ENVIRONMENT, COMPLY WITH THE INSTRUCTIONS FOR USE.

PCS No: 05740

IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HERBICIDE

Crops: Barley, Durum Wheat, Rye, Spelt, Triticale and Wheat.
Winter oats, (Winter oats under sown with grass).
Barley, Durum Wheat, Rye, Spelt, Triticale and Wheat undersown with grass.

Maximum Individual Dose: }

Maximum Number of Applications: } Full details are given in the Important Information area

Maximum Total dose: } on the attached leaflet

Latest Time of Application: }

Other Specific Restrictions: }

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.



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DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HERBICIDE

Crops	Maximum Individual Dose	Maximum Number of applications (per crop)	Maximum Total dose	Latest Time of Application
Barley, Durum Wheat, Rye, Spelt, Triticale and Wheat	0.5 L/ha	-	0.5 L/ha	GS45 (late boot stage) and before June 30 th
Barley, Durum Wheat, Rye, Spelt, Triticale and Wheat undersown with grass	0.5 L/ha	1	0.5 L/ha	GS45 (late boot stage) and before June 30 th
Winter oats and winter oats under sown with grass	0.25 L/ha	1	0.25 L/ha	GS32 (second node visible) and before 31 st May

Other Specific Restrictions:

- The total amount of halauxifen-methyl applied to a winter cereal crop must not exceed 14.04 g/ha (13.5 g a.e./ha of halauxifen-methyl). For autumn sown crops the maximum total must not exceed 7.8 g/ha (7.5 g a.e./ha of halauxifen-methyl) between first leaf unfolded (GS11) and 31st December. For any applications involving halauxifen-methyl made between January 1st and flag leaf swollen (GS45) the maximum total dose of halauxifen-methyl applied must not exceed 6.24 g/ha (6 g a.e./ha).
- A minimum interval of 3 months between applications of products which contain halauxifen-methyl must be respected.
- WHORL must not be applied before 1st February in winter cereals (including undersown with grass) or before 1st March in spring cereals (including undersown with grass).
- DO NOT use WHORL on spring oats.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

RESTRICTIONS

Do not treat crops under stress. Stress can be caused by many factors including frost, drought, water logging, trace element deficiency, disease and pest attack etc. WHORL can sometimes induce slight and transient (2-3 weeks) crop yellowing or growth inhibition. This has no impact on yield and grain quality.

Do not apply to crops containing or under sown with clover or any legume containing mixtures.

Do not roll or harrow 7 days before or after application.

Avoid spray drift onto non-target crops (see Adjacent Crops section below).

WEEDS CONTROLLED

WHORL is a post-emergence herbicide for the control of the following broad-leaved weeds in winter and spring cereals. WHORL is mainly absorbed through the foliage of the target weeds.

Application rates and timing for spring applications to winter cereals:

Weed species	Rate L/ha	Maximum growth stage controlled	Susceptibility
Common Shepherd's purse	0.5	Full flowering Up to 15 cm diameter	S
Common fumitory	0.25	Up to 20 cm height	S
Cleavers	0.375	Beginning of flowering Up to 40 cm height	S
Cleavers	0.5	Beginning of flowering Up to 90 cm	S
Common hemp nettle	0.5	Up to 10 cm height	S
Small flowered cranesbill	0.25	Up to 10 cm height	S
Red dead-nettle	0.25	Full flowering Up to 20 cm height	S
Common poppy	0.5	Up to 10 cm diameter	S
Common chickweed	0.5	Full flowering 25 cm height	S

Application rates and timing for spring applications to spring cereals:

Weed species	Rate L/ha	Maximum growth stage controlled	Susceptibility
Common fumitory	0.25	6 true leaf stage Up to 10 cm height	S
Cleavers	0.25	Up to 40 cm height, before flowering	S
Cleavers	0.375	First flowers visible Up to 40 cm	S
Fat-hen	0.375	Up to 25 cm height	S

Weed species	Rate L/ha	Maximum growth stage controlled	Susceptibility
Red dead-nettle	0.25	First flower petals visible Up to 10 cm height	S
Black bindweed	0.5	Up to 15 cm height	S
Common chickweed	0.5	Up to 15 cm diameter	S

For best results apply WHORL to young weeds which will respond quicker when treated at early stages. Vigorous crop competition enhances control of the difficult to control weeds.

WEED RESISTANCE

Product	Type	Active	HRAC code
WHORL	Herbicide	fluroxypyr-meptyl	4 (Previously Group O)
	Herbicide	halauxifen-methyl	4 (Previously Group O)

WHORL contains the active ingredients halauxifen-methyl (an arylpicolinic herbicide) and fluroxypyr-meptyl, both of which are members of the pyridine-carboxylic acid family of synthetic auxins, part of Group 4 (previously Group O) according to HRAC classification. To minimize the risk of resistance developing, the following precautions are advised as part of a resistance management strategy.

- Use rate to maximize control of high risk/difficult to control weed species.
- Follow label statements concerning rates and application timing.
- Use WHORL only once per crop season.
- Consider the use of cultural control methods where possible.
- Do not over rely on a single herbicide mode of action.

CROP SPECIFIC INFORMATION

WHORL can be used on a variety of winter cereals (wheat, durum wheat, spelt, barley, rye, triticale and oats) and spring cereals (wheat, durum wheat, barley, spelt, triticale and rye) under sown with grass for the control of broad leaf weed species.

WHORL can be used on a variety of winter cereals (wheat, durum wheat, spelt, barley, rye, triticale and oats) and spring cereals (wheat, durum wheat, barley and rye) for the control of broad leaf weed species.

WHORL can be used cereals grown for seed and malting barley.

TIMING

The ideal timing for application is when the weeds are small and actively growing. However, some highly susceptible species can be controlled at advanced growth stages for late treatments (e.g. Cleavers and Red Dead-Nettle)

Winter sown cereals (wheat, barley, rye, triticale, durum wheat, spelt)

WHORL can be applied from February 1st when the crop is at least GS 13 (three leaves unfolded) up to GS 45 (flag leaf sheath swollen). Latest calendar date for application is 30th June.

Winter oats

WHORL can be applied from February 1st when the crop is at least GS 13 (three leaves unfolded) up to GS 32 (second node visible). Latest calendar date for application is 31st May.

Spring sown cereals (wheat, barley, rye, triticale, durum wheat, spelt)

WHORL can be applied from March 1st when the crop is at least GS 13 (three leaves unfolded) up to GS 45 (flag leaf sheath swollen). The latest calendar date for application is 30th June.

Undersown cereal crops

WHORL may be applied to wheat, barley, winter oats, rye, durum wheat, spelt and triticale crops undersown with grass when the cereal crops are at the growth stages stated above. Application must only be made after the undersown grass has 5 leaves unfolded (GS 15).

RATES OF USE

Apply 0.25 to 0.5 L/ha of WHORL in 100 to 400 litres of water per hectare, using spray equipment to give good even coverage of the crop.

The lowest water volume should only be used in open crops on small weeds. On later applications where the crop is dense, the spray volume should be increased to 200-400 litres water per hectare. The minimum recommended pressure is 2 to 3 bars.

Apply a maximum rate of 0.25 L/ha of WHORL on winter oats and winter oats under sown with grass.

For undersown cereal crops, it is recommended to use a minimum spray volume of 150 litres of water per hectare.

SOIL

WHORL can be used to any soil type.

WEATHER CONDITIONS

WHORL can be used in cold or warm (from 2 to 25 °C), humid or dry conditions. In severe drought conditions, there can be a slight reduction in efficacy.

RAINFASTNESS

WHORL is rainfast one hour after application.

FOLLOWING CROPS

After an application of WHORL at 0.5 L/ha up to GS 45, the following crops may be sown in the summer/autumn of the same year after the cereal harvest: white mustard, pea, broad bean, field beans, winter oilseed rape, phacelia, ryegrass, winter sown cereals (wheat, barley, rye, triticale, oats, spelt), vegetable brassica as transplants. Ploughing is recommended prior to drilling maize, alfalfa, soybean and clover.

All crops can be sown in the spring following an application of WHORL at 0.5 L/ha up to GS 45 in the previous calendar year.

CROP FAILURE

In the event of a cereal crop failure after the crop has been treated with WHORL, consider all herbicides used on the treated field before deciding which new crop to sow.

In case of a crop failure after a spring application of WHORL:

- 1 month after application with no cultivation: Spring wheat, Spring barley, Spring oats, and Ryegrass may be sown.
- 2 months after application and after ploughing: Maize, Spring oilseed rape, Pea, Broad bean and Field bean may be sown.
- 3 months after application: Sorghum may be sown.

ADJACENT CROPS

Avoid spray drift onto non-target crops.

Particular care should be taken to avoid spray drift onto susceptible crops e.g. vines, orchards, sunflower, legumes, vegetable crops, ornamentals, flax, sugar beet, potatoes etc.

WHORL is of low volatility and is therefore not subject to vapour drift.

Apply only with a boom sprayer and use suitable nozzles for herbicides. Use a spray pressure as low as possible and a low height with respect to the treated vegetation, while ensuring the good spray distribution.

The use of low drift nozzles is recommended.

Do not spray in windy weather. Wind speed should be less than or equal to 3 on the Beaufort scale (i.e a maximum of 19 km/hour). Do not spray if the temperature exceeds 25 ° C in the shade.

MIXING AND SPRAYING

Mixing

Half fill the spray tank with clean water and start the agitation. SHAKE THE CONTAINER WELL before use and add the required amount of product. Rinse any empty containers thoroughly and add rinsings to the spray tank. Add the remainder of the water and continue agitation until spraying is completed. Spray solution MUST be used on the day of mixing and must NOT be left overnight.

Application method

Apply WHORL only with a boom sprayer. Use a spray pressure as low as possible and a boom height adapted to the nozzle type and the sprayed vegetation, while ensuring the good spray distribution. Use nozzles suitable for herbicide applications. Nozzle type does not influence efficacy and WHORL can be applied using standard and low drift nozzles.

Boom height should be adjusted to ensure even coverage of the crop, particularly at later growth stages. The correct height is one at which the spray from alternate nozzles meets just above the crop.

Spray quality

Apply WHORL as a MEDIUM spray as defined by the BCPC system.

Tank cleaning

To avoid subsequent injury to crops other than cereals (wheat, barley, rye, triticale), all spraying equipment must be thoroughly cleaned both inside and out using a proprietary tank cleaner such as All Clear Extra spray cleaner at 0.5 % v/v as follows:

1. Immediately after spraying thoroughly and completely rinse all internal surfaces.
2. Rinse inside of tank with clean water and flush through booms and in-line strainers using at least one tenth of the spray tank volume. Drain tank completely.
3. Fill tank with clean water (minimum 10% of tank capacity) and add tank cleaner at the recommended rate and agitate for 15 minutes. Flush the boom and hoses and drain tank completely.

4. Nozzles and filters should be removed and cleaned separately with a tank cleaner at the recommended rate.

5. Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume. Drain tank completely.

6. For disposal of washings, follow Code of Practice for Using Plant Protection Products. Do not spray onto sensitive crop or land intended for cropping with sensitive crop.

1. Note: If it is not possible to drain the tank completely, step 3 must be repeated before going onto step 4.

COMPATIBILITY

Where tank mixes are used, and unless directed otherwise, the preferred order of addition of products to the spray tank is as follows: water dispersible granules, wettable powders, suspension concentrates (flowables), emulsifiable concentrates, solution concentrates. Each product should be added to the half-full sprayer and be fully dispersed before the addition of the next product.

For details on compatibilities contact your distributor or Corteva technical hotline on +44 (0) 800 689 8899 or ukhotline@corveva.com

TRADEMARK ACKNOWLEDGEMENTS

WHORL is a trademark of Corteva Agriscience.

All other brand names are trademarks of other manufacturers for which proprietary rights may exist.

CORTEVA AGRISCIENCE CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable but, as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during or after application which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded. No responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.

To access the Safety Data Sheet for this product, scan the QR code or use the weblink below:



<https://www.corveva.ie/content/dam/dpagco/corteva/eu/ie/en/files/sds/WHORL-IRL-SDS.pdf>

Alternatively contact your supplier