

MERUBA®

A suspension concentrate containing 100 g/L mesotrione and ethoxylated alcohols (C9-C11)

Causes serious eye damage.
Very toxic to aquatic life with long lasting effects.
Suspected of damaging the unborn child.

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/eye protection.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do - continue rinsing.
IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
Collect spillage.
Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for 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



Danger



Authorisation Holder:

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IMPORTANT INFORMATION FOR USE ONLY AS A PROFESSIONAL HERBICIDE					
CROPS/ SITUATIONS	MAXIMUM INDIVIDUAL DOSE: (L PRODUCT/ HA)	MAXIMUM TOTAL DOSE: (L PRODUCT/ HA/ CROP)	MAXIMUM NUMBER OF TREATMENTS: (PER CROP)	LATEST TIME OF APPLICATION:	AQUATIC BUFFER ZONE DISTANCE (METRES)
Forage maize, grain maize	0.75	–	2	BBCH 18 (8 Leaves unfolded)	5
Forage maize, grain maize	1.0	–	1	BBCH 18 (8 Leaves unfolded)	5

Other specific restrictions:

- (1) A minimum of 14 days must be observed between applications.
- (2) Applications can be made from BBCH 12 only.
- (3) This product must not be applied by hand-held equipment.
- (4) This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with the 'Local Environment Risk Assessment for Pesticides Horizontal Boom Sprayers' booklet available from the HSE Chemicals Regulation Division's website or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

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.

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 GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

AFTER CONTACT WITH SKIN, WASH IMMEDIATELY with plenty of water. **WASH HANDS/EXPOSED SKIN** before eating and drinking/smoking/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 to surface water bodies in line with LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within the distance specified for the crop to the top of the bank of a static or flowing water body, or within 1 m of the top of a ditch which is dry at the time of application. For crops with 5 m buffer zone only: **DO NOT ALLOW DIRECT SPRAY** from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone as appropriate to the crop must be maintained. The results of the LERAP must be recorded and kept available for three years.

Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS. KEEP OUT OF REACH OF CHILDREN. 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.

DIRECTIONS FOR USE

IMPORTANT: This information is authorised 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.

Restrictions

Do not use on seed crops of forage and grain maize.

GENERAL INFORMATION

Meruba contains mesotrione, a foliar applied herbicide for selective control of Barnyard grass, annual meadow grass and annual broad-leaved weeds. The activity of Meruba is mostly by foliar uptake with some soil uptake. Meruba is rapidly absorbed through the leaves and moves to the growing point.

Spray Timing

Always inspect crop and weed growth stage immediately before spraying. For best results treat when weeds are small and actively growing. See weed control tables for details.

Crops

Forage maize and grain maize may be sprayed any time from the two to eight leaf stage (BBCH 12-18).

Weather

For the best results Meruba should be applied when the weeds are actively growing i.e. in warm, humid weather with adequate soil moisture. Treatments in poor growing conditions or in dry soil may give less reliable control.

Avoid spraying when weed or crop foliage is wet.

CONDITIONS FOR USE AGRICULTURAL PRACTICE

Avoid overlapping spray swaths. It is not recommended to spray crops suffering from stress e.g. in when in very cold or drought conditions, or when wide temperature fluctuations are expected or excessive rainfall is expected to follow application. Under these adverse conditions, mild to moderate chlorosis may be observed on sprayed leaves. This effect is usually transient and does not affect yield.

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

RESISTANCE MANAGEMENT

Meruba is a 4-HPPD inhibitor, which disrupts development of plant pigments used for photosynthesis. The main symptom caused by Meruba is 'leaf-bleaching'. Susceptible weeds will subsequently die.

It is recommended to use Meruba in sequence with herbicides having alternative modes of action to that of Meruba to reduce the risk of resistance developing in the target weeds (especially, Common amaranth, Barnyard grass, Black nightshade and Fat-hen).

Crop rotation will also delay the onset of resistance, so it is advisable to use Meruba in rotational crops of maize. However, where continuous maize is grown, it is not advisable to use Meruba for more than two consecutive seasons.

To achieve optimum control from Meruba, use the maximum dose required for the weed spectrum and sizes that you have, taking note to treat weeds when they are small and actively growing. Where weed germination is likely to occur over a protracted period, it may be advisable to use the split dose application of Meruba. However, to minimise the risk of resistance, a single application of Meruba per crop is preferred.

NOTE: Weed control may be reduced if strains of individual species less sensitive to Meruba develop.

WEED CONTROL

The recommended dose rate is 0.75 to 1.0 litre per hectare depending on the type of weeds present and their growth stage. Applications are recommended when weeds are small and actively growing (maximum weeds sizes are given in the table below).

Meruba		1.0 L/ha	0.75 L/ha	0.75 L/ha + 0.75 L/ha*
Grass Weeds	Maximum weed size controlled	Susceptibility rating	Susceptibility rating	Susceptibility rating
Cockspur grass (<i>Echinochloa crus-galli</i>)	3 true leaves	R	R	S
Annual meadow-grass (<i>Poa annua</i>)	5 true leaves	MR	-	MR
Broad-leaved Weeds	Maximum weed size controlled	Susceptibility rating	Susceptibility rating	Susceptibility rating
Common amaranth (<i>Amaranthus retroflexus</i>)	4 true leaves	S	-	S
Fat-hen (<i>Chenopodium album</i>)	4 visibly extended internodes	S	S	S
Sowbane (<i>Chenopodium hybridum</i>)	6 true leaves	S	S	S
Many-seeded goosefoot (<i>Chenopodium polyspermum</i>)	6 true leaves	S	S	S
Shepherd's purse (<i>Capsella bursa-pastoris</i>)	8 side shoots visible	S	S	S
Red dead-nettle (<i>Lamium purpureum</i>)	1 visibly extended internode	S	MS	S
Knotgrass (<i>Polygonum aviculare</i>)	5 true leaves	S	-	S
Black bindweed (<i>Fallopia convolvulus</i>)	8 side shoots visible	MS	MR	MS
Redshank (<i>Persicaria maculosa</i>)	2 visibly extended internodes	S	S	S

Meruba		1.0 L/ha	0.75 L/ha	0.75 L/ha + 0.75 L/ha*
Broad-leaved Weeds	Maximum weed size controlled	Susceptibility rating	Susceptibility rating	Susceptibility rating
Black nightshade (<i>Solanum nigrum</i>)	8 true leaves	S	S	S
Common chickweed (<i>Stellaria media</i>)	5 visibly extended internodes	S	S	S
Field pennycress (<i>Thlaspi arvensis</i>)	1 visibly extended internode	S	S	S
Field pansy (<i>Viola arvensis</i>)	8 true leaves	S	S	S
Common field speedwell (<i>Veronica persica</i>)	7 visibly extended internodes	R	R	R

* Meruba applied as a two application sequence 0.75 L/ha + 0.75 L/ha (minimum 14 day interval)

Key:

S = Susceptible (85% - 100% control)

MS = Moderately Susceptible (75% - 85% control)

R = Resistant (0% - 59% control)

MR = Moderately Resistant (60% - 75% control)

Application

Apply through a conventional field crop sprayer using a pressure of 2-3 bars.

Good spray cover is essential and care should be taken to ensure that the sprayer has a matched set of nozzles, the machine is correctly calibrated and adjusted to the correct height above the crop. Do not leave spray liquid in the sprayer for long periods (i.e. overnight).

Preparation of the spray

Shake the Meruba container before opening.

Half-fill the spray tank with clean water, add the required amount of Meruba and agitate while filling the tank. On emptying the container, 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 container safely. Continue agitation during spraying.

Volume of water

Use 200 to 300 litres (maximum) of water per hectare. The lower rate is preferable, but the higher volume may be necessary where there are dense or well developed weed populations.

A restricted rate of 200 L of water/ ha must be used for the 0.75 L + 0.75 L product/ ha application rate.

Cleaning application equipment

Wash application equipment thoroughly after use, so as to remove all traces of Meruba, as even small amounts remaining in the spraying equipment may cause damage to crops from subsequent spraying operations. Rinse the inside of the tank with clean water, using at least one tenth of the spray-tank volume. After flushing through the pump and spray-lines, drain and repeat the entire procedure. Disposal of spray-tank washings should be conducted in accordance with local or national legislation.

SUCCESSING CROPS

Crop failure

In the event of crop failure, maize (forage and grain) may be re-planted 4 weeks after application. Ploughing is recommended prior to reseeded. Some slight crop effects may be seen soon after emergence, but these are usually transitory in nature.

Rotational crops

Autumn: Winter wheat (including durum wheat), winter barley and ryegrass can be planted in the autumn following on from crops of maize treated with Meruba. Before planting autumn crops of oil-seed rape, ploughing to a minimum of 15cm is necessary.

Spring: Forage and grain maize, spring wheat, spring barley and ryegrass can be planted in the spring following on from crops of maize treated with Meruba. Do not sow any other crop at this time.

CONDITIONS OF SUPPLY

All goods supplied by us are of a 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.