



syngenta

Reg. No. **L7483** Act No. 36 of 1947 **N-AR 1811** (Namibia)

A suspo-emulsion systemic pre- and post-emergence herbicide for the control of annual broadleaf weeds, grasses and the suppression of certain weeds in sugarcane and maize.

GROUP	27	HERBICIDE
	15	
	5	

Active Ingredients:
mesotrione (callistemone)..... 37,5 g/l
s-metolachlor..... 375 g/l
terbuthylazine..... 125 g/l

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WARNING

Hazard statements: Harmful if swallowed. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not breathe mist or vapours. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. **Response:** If exposed or concerned, get medical advice/attention. Collect spillage.

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1. WARNINGS:

Hazard statements: Harmful if swallowed. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

Withholding periods: Minimum number of days between last application and harvest or grazing.

MAIZE..... 180 days (6 months)
SUGARCANE..... 56 days

- Harmful if swallowed.
- Handle with care.
- May irritate the skin and eyes.
- Keep out of reach of children, uninformed persons and animals.
- Store in a cool, dry place away from food and feed.
- Toxic to fish and other agricultural organisms.
- **In case of poisoning:** Call a doctor and present this label.
- **Re-entry:** Do not enter treated area within one (1) day after application, unless wearing protective clothing.
- **Aerial application:** Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not spray or allow drift to contaminate water or adjacent areas.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the weed against the remedy concerned, as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation and the environment, or harm to people or animals or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions, that could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

2. PRECAUTIONS:

Precautionary statements: Prevention: Obtain special instructions before use. Do not breathe mist or vapours. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. **Response:** If exposed or concerned, get medical advice/attention. Collect spillage.

- Do not eat, drink, or smoke while handling this product.
- Prevent contamination of food, feed, drinking water and eating utensils.

For safety when mixing

- Wear eye protection (face shield).
- Wear rubber gloves when handling the concentrate.
- Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three (3) times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsate to the contents of the spray tank before destroying the container in the prescribed manner.

For safety when spraying

- Avoid inhalation of spray mist.
- Avoid contact with the spray as far as possible.
- Avoid spray drift to susceptible crops, grazing, rivers, dams and areas not under treatment.

For safety after spraying

- Clean applicator thoroughly after use.
- Do not spray, drain or flush equipment on/or near trees or plants or where their roots may extend.
- Dispose of wash water where it will not contaminate crops, grazing, rivers, dams and areas not under treatment.
- Destroy empty container in the prescribed manner and do not re-use for any other purpose.
- Change and wash your work clothes.
- Wash yourself.

First Aid and Medical Treatment:

Eye contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

Skin contact: Immediately remove all contaminated clothing. Immediately wash skin with water, followed by soap and water.

Inhalation: Remove patient from exposure, keep warm and at ease. Obtain medical attention as a precaution.

Ingestion: If swallowed seek medical advice immediately and present this container or label. Do not induce vomiting.

Note to doctor: If the amount of chemical is judged to be less than a lethal dose, observe the patient and treat symptomatically. If gastric lavage is considered necessary, prevent aspiration of gastric material. Consider administration of activated charcoal and a laxative.

3. RELEVANT SUBSTANCES:

Chemical name	
terbuthylazine (ISO)	
Classification	Concentration (% w/w)
Acute Tox. 4; H302 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	≥ 10 - < 20
M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	
Chemical name	
mesotrione (ISO)	
Classification	Concentration (% w/w)
Repr. 2; H361d STOT RE 2; H373 (Nervous system, Eyes) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	≥ 3 - < 10
M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	

4. RESISTANCE MANAGEMENT:

LUMAX is a group code 27, 15 and 5 herbicide. Any weed population may contain individuals naturally resistant to **LUMAX** and other group code 27, 15 or 5 and other herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. These resistant weeds may not be controlled by **LUMAX** or any other group code 27, 15 or 5 herbicides.

To delay herbicide resistance:

- Avoid exclusive repeated use of herbicides from the

same herbicide group code. Alternate or tank mix with products from different herbicide group codes.

- Integrate other control methods (chemical, cultural, biological) into weed control programs.

As the active ingredients in **LUMAX** act by three different modes of action (two of which do not have instances of resistance reported) this forms an excellent resistance management strategy. However, when used in rotation with other modes of action and in combination with cultural methods of weed control, **LUMAX** will give the best defence against the development of resistant weeds.

LUMAX should be integrated into an overall weed control program. Practices known to reduce weed development (e.g., tillage and crop competition) and herbicide use (e.g., weed identifying, proper application timing, banding, and rotations) should be followed wherever possible.

Do not use **LUMAX** with other HPPD inhibitors e.g., isoxaflutole or mesotrione and sulcotrione containing products within the same growing season.

For specific information on resistance management contact the registration holder of this product.

5. USE RESTRICTIONS:

5.1 General

Insecticide use

- **LUMAX** should not be applied post-emergence in tank mix with an organophosphate e.g., chlorpyrifos.
- If a carbamate insecticide e.g., aldicarb is used at planting, **LUMAX** can only be applied 21 days later.

Soil moisture

- **LUMAX** requires rain or overhead irrigation of more than 20 mm within 7 - 14 days of application to provide optimal weed control.

5.1.1 Application through irrigation systems

(only for pre-emergence weed control)

- **LUMAX** can only be applied through a centre pivot irrigation system for pre-emergence weed control.
- **LUMAX** can only be applied through a well-operated and well-maintained centre pivot.
- Applications should only be done through centre pivots equipped with an injector system.
- The centre pivot should apply between 4.5 mm and 7.5 mm of water when applying **LUMAX**. Control should be for at least 70 - 84 days (10 - 12 weeks).
- Calculate the injection rate carefully and make sure it is correct.
- Apply within two (2) days of planting or before the emergence of any weeds.

- Application should be done to fields which are well-prepared with a fine seedbed with no germinating or established weeds.
- Once **LUMAX** has been applied on the whole centre pivot area, it should be set to apply the following water volumes if sufficient rain did not occur:
 - 10 mm water per hectare when clay content is < 20%
 - 15 mm water per hectare when clay content is 20 - 35%
 - 20 mm water per hectare when clay content is > 35%
- Keep soil wet for a period of 7 - 14 days after application.
- Be aware that the application and distribution of **LUMAX** will only be as even as the application of the irrigation water.
- Do not apply **LUMAX** through irrigation water in excessive wind speeds (wind speed should be < 6 ms⁻¹).
- Be careful when the centre pivot overlaps at the end of the cycle area as serious over dosage and possible damage could occur.
- Care should be taken when applying **LUMAX** through the centre pivot as breakages or stoppages could lead to major over-application and crop damage.
- Care should be taken not to contaminate boreholes or dams with accidental spillages of chemicals in the irrigation system. Injection of **LUMAX** close or at the centre of the pivot is preferable. Both the injector pump and the water pump should be fitted with valves to stop injection as soon as the pivot's forward movement is stopped. The main irrigation water supply line should also be fitted with a non-return valve to prevent treated water to run back into the supply source.

5.1.1 Aerial application

Avoid chemical drift at all times.

Aerial application of **LUMAX** may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. Drift should be avoided at all times. It is therefore essential that the following criteria are met:

a) Application parameters

- **Volume:** A volume of 30 l/ha is recommended. As **LUMAX** has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** A droplet coverage of 20 - 30 droplets per cm² must be recovered at the target.
- **Droplet size:** A droplet spectrum with a VMD of 350 - 400 microns is recommended. Ensure that the production of fine droplets (less than 150 microns) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top, during a dive, or when banking.

b) Equipment

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage but which will ensure the minimum loss of product either through endodrift (within target field) or exodrift (outside target field).
- The operator must use a set-up that will produce a droplet spectrum with the lowest possible relative span.
- All nozzles/atomisers should be positioned within the inner 60 - 75% of the wingspan to prevent droplets from entering the wingtip vortices.

c) Meteorological conditions

- The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C.
- Stop spraying if the wind speed exceeds 15 km/h.
- Aerial application of **LUMAX** must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur.
- Also note that the application of **LUMAX** under temperature inversion conditions (spraying in or above the inversion layer) may lead to the following:
 - Reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
 - Damage to other sensitive crops and/or non-target areas through the movement of the suspended spray cloud away from the target field.

It is essential to obtain assurance from the aerial spray operator that the above requirements are met.

5.2 Follow-on Crops

- The planting of follow-on crops may be limited by the previous use of **LUMAX** and/or other herbicides in previous or even the same sugar ratoons.
- The following waiting periods should be adhered to:

MAIZE AND SUGARCANE	0 months
BARLEY DRY BEANS GRAIN SORGHUM GRONDNUTS POTATOES SOYBEANS SUNFLOWERS WHEAT	9 months
ALL OTHER CROPS including cotton	24 months

All rotational crops should be planted only after thorough cultivation. Since the product is metabolised by microbial activity, periods of low microbial activity e.g., cold winters or very dry summers might extend the residual activity of **LUMAX**.

A deep plough action will allow for sufficient loosening of soil and compact layers, to ensure a complete turning of the soil.

5.3 Pre-emergence and Early Post-Emergence Application

- The clay content of the soil does not affect the dosage

rate of **LUMAX**.

- **LUMAX** must be applied either pre-emergence or early post-emergence of the weeds.
- At application the growth stage of the grasses should not be larger than 2 - 3 leaves without any tillers and broadleaf weeds should not be larger than 4 - 6-leaf stages.
- **LUMAX** applications should be made during late spring and summer season when the chance of rain is high.
- **LUMAX** will give long residual activity under favourable climatic conditions. Residual activity of at least 10 - 12 weeks can be expected under favourable conditions.
- GRAMOXONE must be added when **LUMAX** is applied early post-emergence for the control of grasses. GRAMOXONE is added to the mixture at 500 ml/ha.
- Applications with **LUMAX** plus GRAMOXONE can be applied broadcasted in ratoon cane up to a height of 30 cm. In plant cane GRAMOXONE should not be applied later than the spike stage of the crop (refer to the GRAMOXONE label). The registration holder does not accept any liability for damages or poor performance when paraquat other than GRAMOXONE is used in combination with **LUMAX**.
- **LUMAX** can be applied where drip irrigation cropping systems are used however, drip irrigation is not sufficient to activate and distribute **LUMAX** in the absence of rainfall. To activate **LUMAX**, overhead irrigation or rain of at least 20 mm is required. **LUMAX** may not be applied through drip irrigation systems.
- **LUMAX** should not be used in flood irrigation systems other than achieving post-emergence knockdown. Flood irrigation will reduce the residual activity of **LUMAX**.
- **LUMAX** should not be applied in high organic matter soils (> 3%) or onto soils with excessive trash or burnt sugarcane rubble as reduced residual action would be expected.

6. DIRECTIONS FOR USE: Use only as indicated.

6.1 Compatibility

Compatibility studies have been conducted with **LUMAX** in combination with only one (1) at a time of the products listed below, except where being recommended as such on this label. Multiple combinations of the above mentioned compounds have not been tested.

As variations may exist between formulations of products containing the same active ingredients, the trade names and registration numbers of the approved products are shown.

LUMAX is compatible with COMPLEMENT SUPER (L8169), FALCON GOLD (L5750), GRAMOXONE (L1174), HEXAXINONE 750DF (L6785), KARATE ZEON (L6330), KARATE EC (L3752), METRIBUZIN 700WDG (L7118), SERVIAN (L5617), TRONIC (L3685) and TOUCHDOWN FORTE HITECH (L7305).

Tank mixtures: When tank mixing **LUMAX** with SERVIAN do not add GRAMOXONE to the mixture. However, if the weed population necessitates the addition of GRAMOXONE e.g., the presence of *Panicum maximum* or other grasses, apply the SERVIAN by itself and then apply **LUMAX** plus GRAMOXONE 5 - 7 days later.

6.2 Dilution Water

- Use only clean water and add ammoniumsulphate e.g., VELOCITY-GLIFO (L7768) to the water at a rate of 1 - 2%.
- The use of registered buffers are recommended however, the pH should not be allowed to go below 6.5.

6.3 Mixing Instructions

- Fill the spray or pre-mix tank with clean water and engage agitator. Agitation must be continued throughout the mixing and spraying operation.
- Re-suspend the spray mixture if agitation was suspended for longer than 5 minutes.
- When the spray or pre-mix tank is half-full with water, add **LUMAX** slowly and agitate until completely dispersed. GRAMOXONE can be added now while agitating continuously.
- If **LUMAX** is to be tank mixed with SERVIAN make a slurry with water and SERVIAN and add it slowly through the screen into the tank. Agitate during the procedure and then slowly add **LUMAX**. Then only add all the other soluble concentrates and only thereafter the emulsifiable concentrates. Add the adjuvant last and then continue to fill the tank to the required level with water while agitating.

6.4 Tractor Application

- **LUMAX** must be applied the same day as mixing.
- Apply by means of a tractor mounted boom sprayer, which is correctly calibrated with continuous agitation to deliver at least 200 - 300 ℓ spray mixture/ha. Avoid overlapping of spray swaths.

SUGARCANE

(Plant - and ratoon cane)

A pre-emergence and early post-emergence application on both sugarcane and weeds

- All **pre-emergence** applications of **LUMAX** will control both the broadleaf weeds and grasses mentioned in the table below. No addition of GRAMOXONE is necessary.
- For **all early post-emergence** applications of **LUMAX** to control sedges and grasses a tank mixture with GRAMOXONE is recommended as described in 5.3.
- FALCON GOLD could be added to the **LUMAX** plus GRAMOXONE to increase the residual grass control.

Recommended adjuvants

In all early post-emergence applications of **LUMAX** one (1) of the following adjuvants must be used:

- TRONIC at 500 ml/ha.
- COMPLEMENT SUPER at 100 ml/ha

LUMAX (3.33 ℓ/ha)	plus a recommended adjuvant
Botanical name	Common name
<i>Ageratum conyzoides</i>	invading Ageratum
<i>Amaranthus hybridus</i>	common pigweed

LUMAX (3.33 l/ha)	plus a recommended adjuvant
Botanical name	Common name
<i>Brachiaria deflexa</i> <i>Brachiaria nigropedata</i> <i>Commelina benghalensis</i> <i>Digitaria sanguinalis</i> <i>Digitaria ternata</i> <i>Eleusine indica</i> <i>Panicum deustum</i> <i>Parthenium hysterophorus</i> <i>Portulaca oleracea</i> <i>Richardia brasiliensis</i> <i>Sesbania bispinosa</i> <i>Sida cordifolia</i> <i>Sida spinosa</i> <i>Tragus berteronianus</i> <i>Urochloa panicoides</i>	false signal grass black footed grass Benghal wandering Jew crab finger grass black seed finger grass goose grass broadleave Panicum Dimoina weed purslane tropical Richardia spiny Sesbania heart-leaf Sida spiny Sida small carrot seed grass herringbone grass

LUMAX (4 - 5 l/ha)	plus a recommended adjuvant
Botanical name	Common name
<i>Acanthospermum hispidum</i> <i>Ageratum conyzoides</i> <i>Amaranthus hybridus</i> <i>Amaranthus spinosus</i> <i>Chenopodium album</i> <i>Chenopodium carinatum</i> <i>Cleome monophylla</i> <i>Commelina benghalensis</i> <i>Convolvulus arvensis</i> <i>Corchorus trilocularis</i> <i>Crotalaria sphaerocarpa</i> <i>Datura ferox</i> <i>Datura stramonium</i> <i>Hibiscus cannabinus</i> <i>Hibiscus trionum</i> <i>Ipomoea aristolochiaefolia</i> <i>Ipomoea purpurea</i> <i>Kyllinga erecta</i> <i>Nicandra physaloides</i> <i>Parthenium hysterophorus</i> <i>Portulaca oleracea</i> <i>Pseudobrachiaria deflexa</i> <i>Richardia brasiliensis</i> <i>Sesbania bispinosa</i> <i>Sida cordifolia</i> <i>Sida rhombifolia</i> <i>Sida spinosa</i> <i>Tagetes minuta</i> <i>Tribulus terrestris</i>	upright starbur invading Ageratum common pigweed thorny pigweed white goosefoot green goosefoot spindle pod Benghal wandering Jew field bindweed wild jute mealie crotalaria large thorn apple thorn apple kenaf bladder weed small morning glory common morning glory white sedge apple-of-Peru demoina weed purslane false signal grass tropical Richardia spiny Sesbania heart-leaf Sida arrow-leaf Sida spiny Sida khaki weed dubbeltjie

For early post-emergence control of grasses the addition of GRAMOXONE at 500 ml/ha would additionally control the following grasses:

<i>Brachiaria deflexa</i> <i>Brachiaria nigropedata</i> <i>Cyperus esculentus</i> <i>Digitaria sanguinalis</i> <i>Digitaria ternata</i> <i>Echinochloa colona</i> <i>Eleusine indica</i> <i>Panicum deustum</i> <i>Panicum maximum</i> <i>Panicum schinzii</i> <i>Tragus berteronianus</i> <i>Urochloa mosambiciensis</i> <i>Urochloa panicoides</i>	false signal grass black footed signal grass yellow nutsedge crab finger grass black seed finger-grass marsh grass goose grass broadleaved Panicum common buffalo grass sweet buffalo grass small carrot seed grass bushveld herringbone grass herringbone grass
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Consult the COMPLEMENT, COMPLEMENT SUPER, GRAMOXONE, FALCON GOLD and TRONIC labels for WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE.

MAIZE

(Conventional and glyphosate tolerant maize)

An early post-emergence application on both maize and weeds

Recommended adjuvants

In all early post-emergence applications of **LUMAX** one (1) of the following adjuvants must be used:

- COMPLEMENT SUPER at 100 ml/ha
- TRONIC at 500 ml/ha.
- TOUCHDOWN FORTE HITECH can be added to **LUMAX** for increased weed control in glyphosate tolerant maize. When adding TOUCHDOWN FORTE HITECH do not add any adjuvant other than the ammoniumsulphate that was added to the water.

LUMAX (3.33 l/ha)	plus a recommended adjuvant
Botanical name	Common name
<i>Ageratum conyzoides</i> <i>Amaranthus hybridus</i> <i>Brachiaria deflexa</i> <i>Brachiaria nigropedata</i> <i>Commelina benghalensis</i> <i>Digitaria sanguinalis</i> <i>Digitaria ternata</i> <i>Eleusine indica</i> <i>Panicum deustum</i> <i>Parthenium hysterophorus</i> <i>Portulaca oleracea</i> <i>Richardia brasiliensis</i> <i>Sesbania bispinosa</i> <i>Sida cordifolia</i> <i>Sida spinosa</i> <i>Tragus berteronianus</i> <i>Urochloa panicoides</i>	invading Ageratum common pigweed false signal grass black footed grass Benghal wandering Jew crab finger grass black seed finger grass goose grass broadleave Panicum Dimoina weed purslane tropical Richardia spiny Sesbania heart-leaf Sida spiny Sida small carrot seed grass herringbone grass

GRAMOXONE, KARATE, FALCON, LUMAX, SERVIAN

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