

BEFORE USING THIS PRODUCT READ THE LABEL CAREFULLY!

SHAKE THE BOTTLE WELL BEFORE USE.

Herbicide



LINURON 500 SC

Reg. No. L 7862 Act/Wet No. 36 of/van 1947
N-AR 1099

2: 9/10/2012 – May 2017

A suspension concentrate herbicide absorbed by roots and foliage for the control of weeds mentioned in crops as listed.

'n Suspensiekonsentraat onkruidoder wat deur wortels en blare opgeneem word vir die beheer van onkruid in gewasse soos gelys.

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL

linuron (urea) 500 g/l linuron (urea)

HRAC HERBICIDE GROUP CODE **G2** HRAC ONKRUIDODER GROEPPKODE



villa

Registration holder / Registrasiehouer:

Villa Crop Protection (Pty) Ltd.

Co. Reg. No. / Mpy. Reg. Nr. 1992/002474/07

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UN Number: 3082

Willow Set & Print 011 394-4486



CAUTION
VERSIGTIG



GEbruiksaanwysings ingesluit

VERWYS NA BESONDERHEDE
GEDRUK OP HOUER/SAK

Date formulated:
Formuleringsdatum:

DIRECTIONS FOR USE ENCLOSED
REFER TO DETAILS PRINTED
ON CONTAINER/BAG

Batch number:
Lohnommer:

DIRECTIONS FOR USE ENCLOSED

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linuron (urea) 500 g/l

Registration holder / Registrasiehouer:

VILLA CROP PROTECTION (PTY) LTD.

Co. Reg. No. 1992/002474/07 Mpy. Reg. Nr.

PO Box / Posbus 10413, KEMPTON PARK, 1620

Tel. (011) 396 2233

CAUTION / VERSIGTIG**WARNINGS**

- Handle with care.
- Do not graze treated areas.
- Harmful when swallowed, inhaled or absorbed through the skin.
- May cause eye, nose, throat and skin irritation.
- Toxic to fish and aquatic organisms. Do not contaminate dams, rivers, lakes or any other water sources.
- Store in a cool, dry, well-ventilated place in the original container, tightly closed and store away from food, feeds, seed, fertilizers and other agricultural remedies.
- Keep out of reach of children, uninformed persons and animals.
- Re-entry: Do not enter treated area until spray deposit has dried, 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 over or allow drift to contaminate adjacent areas or water sources.

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 weeds to the remedy concerned, as well as by the method, time and accuracy of application. The registration holder further does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal 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, which could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.

PRECAUTIONS

- Avoid inhalation of the spray mist.
- Avoid eye and skin contact.
- Wear a face shield and rubber gloves when handling the product, preparing the spray mixture and during application.
- Do not eat, drink or smoke whilst mixing and applying the product or before washing hands and face and change of clothing.
- In case of eye contamination, rinse the eyes thoroughly with plenty of clean water for at least 20 minutes, holding the eyelid(s) open. If irritation persists, obtain medical assistance immediately.
- Wash with soap and water immediately after use and accidental skin contact.
- Wash contaminated clothing after use.
- Prevent drift on to other crops, grazing, rivers, dams and areas not under treatment or to nearby water sources.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of a third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

- Destroy the empty container by perforation and flattening and dispose of it in a safe way.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

RESISTANCE WARNING

LINURON 500 SC is a group code C2 herbicide. Any weed population may contain individuals naturally resistant to **LINURON 500 SC** and other group code C2 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **LINURON 500 SC** or any other group code C2 herbicide.

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 programmes.

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

USE RESTRICTIONS

- Do not apply **LINURON 500 SC** on calcitic or newly limed soils.
- Hot summer temperatures and high sunlight intensity, may cause breakdown of residues.
- Do not use where water logging can occur.
- It is not recommended to sow or plant on soils treated with **LINURON 500 SC** with crops sensitive to **LINURON 500 SC** within 4 months of initial application. Lettuce in particular is very sensitive to **LINURON 500 SC** and crop injury may occur if it is planted during the same season as a **LINURON 500 SC** treatment.
- Weeds, which can germinate from deeper soil levels, such as Thorn apple (*Datura* spp.), Cocklebur (*Xanthium* spp.), Cosmos (*Bidens formosa*), or late germinating weeds, are not controlled effectively by pre-emergence applications.

DIRECTIONS FOR USE: Only use as indicated.

Compatibility:

- The compatibility of **LINURON 500 SC** with other products, may be influenced by the formulation of the product used, as well as the quality of the water, which differs from farm to farm, therefore, a physical compatibility test must always be performed before such a tank mixture is sprayed.
- When **LINURON 500 SC** is used in conjunction with any other agricultural remedy, all **WARNINGS, PRECAUTIONS** and **DIRECTIONS FOR USE** mentioned on that label, must be adhered to.

Mixing instructions:

- Half fill the spray tank with clean water.
- Add the required amount of **LINURON 500 SC** to the water, while stirring.
- Fill the spray tank with water to the required level while maintaining agitation, to ensure thorough mixing.
- Prepared spray mixtures must not be allowed to stand over e.g. overnight.
- Spray equipment must be cleaned and rinsed immediately after spraying.

General:

Pre-emergence sprays:

- **LINURON 500 SC** must be applied on to a moist soil surface, or application must be followed by light irrigation to activate the herbicide.
- If heavy rain seems imminent, delay application in order to prevent the product being leached too deeply into the soil.
- Prepare a good seedbed before application of **LINURON 500 SC**. Crop injury may occur if application is performed on cloddy or compacted soil, which results in improperly planted seed. Seed must be planted at the recommended depth.
- Do not cultivate or disturb the surface of the soil after application of **LINURON 500 SC**, and before emergence of the crop, as weed control efficacy may be reduced, and/or result in crop injury.
- Do a shallow cultivation after emergence of row crops if the soil moisture level is insufficient to activate the herbicide, and while weeds are still small enough to be controlled mechanically.
- Do not apply **LINURON 500 SC** pre-emergence on gravel soils or exposed subsoil.

Post-emergence application:

- The best results for post-emergence application are obtained under high humidity conditions and temperatures between 16 to 25 °C, when weeds are growing vigorously.

APPLICATION

Ground application:

- **LINURON 500 SC** can be applied with conventional high volume spray equipment. It is important that the sprayer be calibrated prior to application, to ensure that the correct delivery rate and even distribution of the spray mixture is obtained.

Field crops:

- Use a properly calibrated tractor-mounted fixed-boom power sprayer and ensure a constant speed and rate of delivery.
- Use filters with openings equal to or larger than 50 mesh.
- Ensure continuous agitation in the spray tank, to keep the spray mixture in suspension.
- Use mechanical or hydraulic agitation. When using a by-pass or return line system, it must terminate at the spray tank's bottom, in order to minimize foaming. **Do not** use an air agitation system.
- Avoid overlapping between swaths and shut off booms when starting, turning, slowing or stopping, as higher spray volumes under these conditions may cause crop injury.
- Use flat fan nozzles for both pre- and post-emergence applications with, a spray pressure between 2.5 to 3 bar.

Horticultural crops:

- A knapsack sprayer operated at constant speed using the same nozzles as described above, is suitable.

Aerial application:

Aerial application of **LINURON 500 SC** may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Pesticides). 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. It is therefore essential that the following criteria be met:

- Volume: The following spray volumes are recommended: **Pre-emergence** - 30 litres per hectare. **Post-emergence** - 30 to 35 litres per hectare. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended above.
- Droplet coverage: **Pre-emergence** - 20 to 30 droplets per cm² must be recovered at the target area, and **Post-emergence** - 35 to 45 droplets per cm².
- Droplet size: A droplet spectrum with a VMD of **Pre-emergence** - 350 to 400 micron is recommended, and **Post-emergence** - 300 to 350 micron. Limit the production of fine droplets less than 150 micron (high drift and evaporation potential) to a minimum.
- Flying height: Maintain the height of the spray boom at 3 to 4 metres above the target. Do not spray when aircraft dives, is in a climb or when banking.
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers within the inner 60 to 75 % of the wingspan to prevent droplets from entering the wingtip vortices.
- 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 per hour.
- Stop spraying under turbulent, unstable and dry conditions during the heat of the day.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:
 - a) reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
 - b) damage to other sensitive crops and/or non-target areas through drifting of the suspended spray cloud away from the target field.
- Ensure that the aerial spray operator knows exactly which fields to spray.

Obtain an assurance from the aerial spray operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.

APPLICATION RATES**Table 1:** Application of **LINURON 500 SC** in carrots, parsley and parsnips.

Crop	Application method and Soil type	Dosage per hectare
Carrots, Parsley and Parsnips	Pre-emergence: Loamy sand, 11 to 15 % clay	1.0 ℓ in 300 ℓ water
	Sandy loam, 16 to 20 % clay	1.5 ℓ in 300 ℓ water
	Sandy clay loam, 21 to 35 % clay	2.0 ℓ in 300 ℓ water
	Post-emergence: Dosage depends upon growth stage of the weeds	1.0 to 1.5 ℓ in 300 to 500 ℓ water
REMARKS		
<ul style="list-style-type: none"> • Pre-emergence application: <ul style="list-style-type: none"> - Seed should be sown deeper than 1.25 cm in a fine seedbed (Refer “General”). • Post-emergence application: <ul style="list-style-type: none"> - Do not apply before carrots reached the 4-leaf stage. - The optimum time for application is when the weeds are in the 2 to 3-leaf stage and not higher than 50 mm. - Apply 300 litres spray mixture per hectare. - Where weeds are in the 3 to 5-leaf stage, but not taller than 75 mm, apply at 500 litres spray mixture per hectare. - Do not apply if temperatures exceed 30 °C. - Do not apply at a spray pressure higher than 3 bar, as it may result in crop injury. - Note that the addition of a wetter at full concentration may result in crop injury. • Re-application: <ul style="list-style-type: none"> - Re-sprays are permissible for both pre- and post-emergence, as long as the total dosage is not more than 2X the prescribed dosage for the situation for which it has been recommended and should in no instance exceed 4 litres per hectare. - As it is not possible to evaluate LINURON 500 SC on all new cultivars, it is not advised to apply LINURON 500 SC for a second time during the same growing season, if phytotoxic symptoms (e.g. leaf tip burn) are observed on any cultivar, after an application. 		

Table 2: Application of **LINURON 500 SC** in sweet potatoes.

Crop	Application method and Soil type	Dosage per hectare
Sweet potatoes (transplanted cuttings)	Pre-emergence (of weeds): Loamy sand, 11 to 15 % clay	1.5 ℓ in 300 ℓ water
	Sandy loam, 16 to 20 % clay	1.75 ℓ in 300 ℓ water
	Sandy clay loam, 21 to 35 % clay	2.0 ℓ in 300 ℓ water
REMARKS		
<ul style="list-style-type: none"> • Apply as soon as possible after transplanting, before active growth starts. • Use of light sprinkle irrigation after application is recommended, to wash the herbicide off the leaves of the cuttings. Alternatively, apply first and transplant directly thereafter. In the case of the latter, do not disturb the soil excessively, and ensure that the minimum trampling takes place. 		

Table 3: Application of **LINURON 500 SC** in gladioli.

Crop	Application method and Soil type	Dosage per hectare
Gladioli	Post-emergence (of weeds): Dosage depends on growth stage of the weeds	1.5 to 2.0 ℓ in 300 to 500 ℓ water
REMARKS		
<ul style="list-style-type: none"> • Do not apply later than 2 days before expected emergence of the crop. • Apply at 300 litres spray mixture per hectare on weeds in the 2 to 3-leaf stage, which are smaller than 50 mm in height. Apply at 500 litres spray mixture on weeds in the 2 to 5-leaf stage, but that are smaller than 75 mm. • Use the lower dosage in 300 litres water and the higher dosage in 500 litres water per hectare, respectively. 		

Table 4: Application of **LINURON 500 SC** in roses.

Crop	Application method and Soil type	Dosage per hectare
Roses	<u>Pre-budburst, pre-emergence:</u> Loamy sand, 11 to 15 % clay	2.0 ℓ in 300 ℓ water
	Sandy loam, 16 to 20 % clay	2.5 ℓ in 300 ℓ water
	Sandy clay loam, 21 to 35 % clay	3.0 ℓ in 300 ℓ water
	<u>Post budburst, post-emergence:</u> Dosage depends on growth stage of the weeds	3.0 to 4.0 ℓ in 300 to 500 ℓ water

REMARKS

- **Pre-bud burst and pre-emergence:**
Apply during spring before bud-burst commences. Apply 20 to 30 ml in 3 litres water per 100 m². (2 to 3 litres per hectare depending on soil type, 1 hectare = 10000 m²).
- **Post-bud burst and post-emergence:**
Direct post-emergence sprays and ensure that growing roses are well shielded. Apply 3 litres of **LINURON 500 SC** in 300 litres water per hectare for weeds in 2 to 5-leaf stage which do not exceed 50 mm in height. Apply 4 litres **LINURON 500 SC** in 500 litres water per hectare for weeds in the 5 to 7-leaf stage that do not exceed 75 mm in height.

WEEDS CONTROLLED BY LINURON 500 SC:

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Broadleaf weeds:	
<i>Amaranthus deflexus</i>	Perennial pigweed
<i>Amaranthus spinosus</i>	Thorny pigweed
<i>Amaranthus hybridus</i>	Common pigweed
<i>Bidens bipennata</i>	Spanish blackjack
<i>Bidens pilosa</i>	Common blackjack
<i>Chenopodium album</i>	White goosefoot
<i>Galinsoga parviflora</i>	Small flowered quickweed
<i>Physalis angulata</i>	Wild gooseberry
<i>Portulaca oleracea</i>	Common purslane
<i>Raphanus raphanistrum</i>	Wild radish
<i>Tagetes minuta</i>	Khaki weed
Grass weeds:	
<i>Chloris pycnothrix</i>	Spiderweb chloris
<i>Echinochloa crusgalli</i>	Barnyard grass
<i>Eleusine indica</i>	African goosegrass
<i>Panicum schinzii</i>	Sweet buffalo grass
<i>Poa annua</i>	Annual blue grass
<i>Setaria pallide-fusca</i>	Red bristle grass
<i>Tragus racemosus</i>	Carrot-seed grass