



# KALACH 510 SL



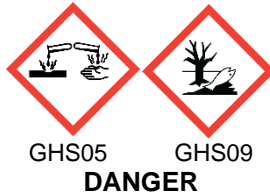
Reg. No.: L8311 Act /Wet No. 36 of/van 1947

**READ ATTACHED PACKAGED LEAFLET BEFORE USE  
AND  
KEEP OUT OF REACH OF CHILDREN AND ANIMALS**

<b>HRAC HERBICIDE GROUP CODE:</b>	<b>9</b>	<b>HRAC ONKRUIDDODER GROEP KODE:</b>
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A soluble concentrate non-selective foliar, systemic herbicide for the control of a wide range of annual and perennial grasses, broadleaf weeds and certain woody perennials as listed. Can also be used to control weeds in soybeans and maize varieties containing the glyphosate resistant gene.

'n Oplosbare konsentraat nie-selektiewe, blaartoegediende sistemiese onkruid doder vir die beheer van verskeie eenjarige en meerjarige grasse, breëblaaronkruid en sekere houtagtige onkruid soos aangedui. Kan ook gebruik word vir die beheer van onkruid in sojabone en mielievariëteite wat die glifosaatbestanddele bevat.



### Hazard statements

- Causes serious eye damage.
- Harmful if inhaled.
- Toxic to aquatic life.
- Toxic to aquatic life with long lasting effects.

### Precautionary statements

- Wear protective gloves/protective clothing/eye protection/face protection.
- Avoid release to the environment if this is not the intended use.

### ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL:

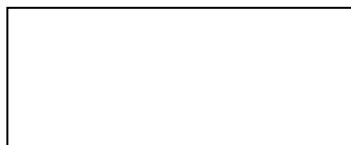
Glyphosate (glycine) / Glifosaat (glisien).....	510 g/l
As glyphosate isopropylamine salt / As glifosaat isopropielamiensout.....	680 g/l

### Registration holder /Registrasiehouer:

UPL South Africa (Pty) Ltd  
Co. Reg. No./Mpy. Reg. Nr.: 2009/019713/07  
7 Sunbury Office Park,  
Off Douglas Saunders Drive, La Lucia Ridge,  
South Africa, 4019  
Tel: 031 514 5600

Contents/Inhoud  
ℓ

Batch No. ....  
Date of Manufacture.....  
Expiry date (< 2 years)....



.....Lot Nr.  
Datum van Vervaardiging  
...( <2 jr)...Vervaldatum

**U.N. No. / VN Nr: 3082**

**Emergency number**

: **Griffon Poison Information Centre: 082 4468946,**  
**Poisons Information Helpline: 0861 555 777,**  
**In case of Spillage: Spill Tech: 086 100 0366 / 083 253 6618**

## WARNINGS

H318 – Causes serious eye damage.  
H332 - Harmful if inhaled.  
H401 - Toxic to aquatic life.  
H411 - Toxic to aquatic life with long lasting effects.

### Withholding periods:

Allow the following number of days between the last application and harvest or grazing:	
Maize: (Grazing)	28 days
Maize (Green Mielies)	42 days
Soybeans	14 days

- Avoid contact with skin or eyes since product is eye irritant and may cause skin irritation.
- Store away from food and feeds, fertilizers and other chemicals.
- Keep out of reach of children, uninformed persons and animals.
- Do not spray over or allow drift to contaminate water or adjacent areas.

**Aerial application.** Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings.

**Re-entry.** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

**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, 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 the event of any uncertainty.**

## PRECAUTIONS

P101 – If medical advice is needed, have product container or label at hand.  
P102 – Keep out of reach of children.  
P103 – Read carefully and follow all instructions.  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264+P265 - Wash hands, forearms and face thoroughly after handling. Do not touch eyes.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment if this is not the intended use.  
P280 - Wear protective clothing, eye protection, face protection, protective gloves.  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305 + P354 + P338 - IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P317 - Get medical help.  
P391 – Collect spillage.  
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

- Prevent contamination of food, feeds, drinking water and eating utensils.
- Wash yourself after use or accidental skin contact.
- Avoid contact with the spray as much as you can.
- Avoid spray drift onto other crops, grazing, rivers, dams and areas not under treatment.

- Clean applicator thoroughly after use and dispose of wash water where it will not contaminate crops, grazing, rivers or dams.
- Rinse the container three times with a volume of water equal to a minimum of 10% of the container. Add the rinsing to the contents of the spray tank. Destroy empty container and do not use for any other purpose.

## RELEVANT SUBSTANCES

Glyphosate-IPA salt	50 – 80%
Aqueous surfactant solution	10 – 20%

## FIRST AID TREATMENT

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell. Immediately call a POISON CENTER/doctor.

## RESISTANCE WARNING

**KALACH 510 SL** is a group code **9** (glycine) herbicide. Any weed population may contain individual weeds naturally resistant to **KALACH 510 SL** and other group code **9** herbicides. Resistance of *Lolium rigidum*, *Conyza bonariensis*, and *Plantago lanceolata* to the chemical family of glycine has been observed in South Africa. If a glycine treatment has been ineffective in the control of the above-mentioned weeds, do not re-treat with a herbicide from the same chemical groups. Resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. Resistant weeds may not be controlled by **KALACH 510 SL** or any other group code **9** herbicide.

In order to delay herbicide resistance:

- Avoid the exclusive and repeated use of herbicides from the same herbicide group code.
- Alternate or tank mix with products from different herbicide group codes.
- Integrate chemical and cultural control methods into weed control programmes.

For more information on resistance management, contact the registration holder

## DIRECTIONS FOR USE: Use only as indicated.

1. Use only clean water in spray mixture.
2. Always ensure that spray equipment is clean, and correctly calibrated before spraying.
3. Use low spray pressure (100 - 200 kPa) to avoid spray drift.
4. **KALACH 510 SL** is actively absorbed through immature bark and leaves of most plants and trees. Contact with immature bark, such as in trees younger than three years, can result in serious localised or translocated damage. **THEREFORE CONTACT WITH LEAVES, GREEN OR IMMATURE BARK AND FRUIT OF DESIRED PLANTS, WHETHER DIRECT OR BY SPRAY DRIFT, MUST BE AVOIDED. ALWAYS MAKE SURE THAT ONLY UNDESIRABLE PLANTS ARE TREATED.** Do not spray onto pruned vines or fruit trees until wounds have sealed properly. **KALACH 510 SL** is a non-selective systemic herbicide and is only active when applied to the green foliage and bark of plants. The visible effect of **KALACH 510 SL** on treated foliage usually appears at 10-14 days after treatment but may vary according to weather conditions. **KALACH 510 SL**

should be applied to actively growing weeds that are not dormant or under temperature or moisture stress. Rain or irrigation a few days prior to a **KALACH 510 SL** application ensures that weeds are actively growing, resulting in optimum efficacy. Rain or irrigation within 6 hours of application can reduce **KALACH 510 SL** efficacy. Do not spray on weed foliage covered with a layer of dust. In these situations apply after recent rain. **KALACH 510 SL** has NO pre-emergence activity, therefore repeat applications are necessary (when applied on its own) to control weeds germinating from seed. Ensure that target weeds are fully exposed to the **KALACH 510 SL** spray.

## USE RESTRICTIONS

When using **KALACH 510 SL** as a land preparation for transplanted tomatoes, tobacco or any other transplanted crop with green and soft stems, allow a minimum of 14 days between application and transplanting of seedlings.

## Mixing instructions

Half fill the spray tank with clean water and add the required quantity of **KALACH 510 SL**. Then fill the tank to the required volume with clean water, ensuring thorough agitation. When using tank mixes, the additional herbicide should be added after **KALACH 510 SL** and agitation must be continuous before and during spraying.

## Application

Remove sediments eg, residues of WP pesticides, from spray tanks before adding **KALACH 510 SL**. Avoid the use of hard or muddy water, or water with a high colloidal content derived from soils high in organic matter. Correctly calibrate all sprayers under field conditions prior to application. It is not necessary to spray to the point of run-off, but essential to ensure complete coverage of the target weed. **EVEN APPLICATION IS ESSENTIAL FOR GOOD RESULTS.**

## Ground application

**KALACH 510 SL** can be applied with conventional ground equipment (tractor mounted booms, knapsack etc). Optimum spray deposits are obtained with ground equipment calibrated to spray 30 – 600 l/ha with suitable nozzles to ensure adequate coverage. Where drift is a problem do not exceed 2 Bar. Use only the pressures recommended for specific nozzles to avoid drift.

## Aerial application

Aerial application of **KALACH 510 SL** may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of South African National Standard 10118: The Aerial Application of 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:

- **The use of a suitable drift retardant adjuvant and / or low drift nozzles (e.g. straight stream nozzles) is recommended. In the case of fixed-wing aircraft flying at a speed faster than 130 mph, the maximum deflection angle of the nozzles or spray stream, as measured from a horizontal straight backwards orientation, may not exceed 30 degrees. In the case of slower flying fixed wing aircraft the maximum deflection angle, as described above, may not exceed 55 degrees.**
- **Volume:** a spray mixture volume of 30 to 35 l per hectare is recommended. 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:** 30 to 40 droplets per cm<sup>2</sup> must be recovered at the target area.
- **Droplet size:** a droplet spectrum with a VMD of 300 to 350 microns is recommended. Limit the production of fine droplets less than 150 microns (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/h.
- 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:
  - 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 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

**KALACH 510 SL** will control most emerged annual weeds germinating from seed in situations such as fallow land, pre-plant of crops, reduced or conservation tillage, perennial vine and tree crops. Apply the **KALACH 510 SL** dosage rate according to the weed growth stage - the higher dosage rates within the range should be used when the weeds are older and more established in the specific growth stage.

## 1. CONTROL OF PERENNIAL WEEDS

1.1 NOXIOUS WEEDS		DOSAGE RATE		REMARKS
BOTANICAL NAME	COMMON NAME	ℓ/ha	% Soln	
<i>Sesbania punicea</i>	Red Sesbania	2,0	1,0	<b>Seedling plants less than 1 m high:</b> Use 1,0% solution.  <b>Tall shrubs:</b> Slash, spray re-growth with 1,0-1,4% solution at 1 m high.
<i>Solanum mauritianum</i>	Bugweed	1,5	1,0  0,4	Apply in spring or summer. <b>Large trees:</b> Cut to 50 cm, allow new growth of at least 50 cm before application.  <b>Saplings:</b> Apply directly to foliage.
<i>Acacia dealbata</i>	Silver wattle	1,5	14,4	<b>Summer application:</b> Applied to low cut stumps, cut 10 cm above ground level. Freshly cut stumps must be sprayed to the point of run-off. Spray must be directed to the cambium layer and exposed bark.
<i>Mimosa pigra</i>	Giant sensitive plant	4,3	2,2	Apply to foliar part of seedlings and plants up to 1 m in height.
<i>Chromolaena odorata</i>	Triffid weed		0,7	Apply in summer and autumn. Slash established plants and allow to regrow. Spray when regrowth is between 50 and 120 cm. Ensure complete coverage of foilage. Previously slashed multisystem plants may require a follow up treatment.

1.2. GRASSES	DOSAGE RATE	REMARKS
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BOTANICAL NAME	COMMON NAME	ℓ/ha	% Soln	
<i>Cynodon dactylon</i>	Common couch	4,3	--	<b>Summer rainfall region:</b> Apply to active growth in autumn or summer. If re-growth occurs, spray with 1,8 % solution.
		6,5	--	<b>Winter rainfall region:</b> As above in autumn.
<i>Eragrostis curvula</i>	Weeping love grass	2,2	1,0	Apply to active growth in summer or autumn.
<i>Paspalum dilatatum</i>	Common Paspalum	4,3	2,2	Apply in summer at flower but before seed drop. If re-growth occurs, spray with 1,0 % solution
<i>Paspalum paspalodes</i>	Couch Paspalum	5,8 - 6,5	--	Apply in summer at flowering but before seed drop. If re-growth occurs, spray with 1,5 % solution or 2,9 ℓ/ha. Apply the higher rate in the winter rainfall region.
<i>Panicum maximum</i>	Common buffalo grass	4,3	2,2	Apply in summer to actively growing plants in the early growth stage. If regrowth occurs, spray with 1,0 % solution.
<i>Pennisetum clandestinum</i>	Kikuyu	2,9	1,0	Apply in summer to actively growing plants. If regrowth occurs, spray with 1,0 % solution.
<i>Setaria megaphylla</i>	Bush buffalo grass	4,3	2,2	Apply to actively growing plants in autumn or summer. If regrowth occurs, spray with 1,0 % solution.
<i>Sorghum halepense</i>	Johnson grass	2,9	1,5	Apply in summer or autumn. If regrowth occurs, spray with 1,0 % solution.
<i>Sorghum verticilliflorum</i>	Common wild-Sorghum	2,2	1,0	Apply to actively growing plants in summer or autumn.

1.3 SEDGES		DOSAGE RATE		REMARKS
BOTANICAL NAME	COMMON NAME	ℓ/ha	% Soln	
<i>Cyperus esculentus</i>	Yellow nutsedge	4,3	--	Apply in summer at pre-flowering stage. If regrowth occurs, spray with 1,0 % so-lution or 2,2 ℓ/ha. (Best results in Feb/March).
<i>Cyperus rotundus</i>	Purple nutsedge	4,3	--	

## 2. CONTROL OF ANNUAL WEEDS

### 2.1. Broadleaf weeds

The following broadleaf weeds will be controlled at the rates and growth stages as indicated below.

KALACH 510 SL ℓ/ha		
0,7 – 1,5	1,5	2,2
1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Alternanthera pungens</i>	Khaki bur weed	
<i>Amaranthus hybridus</i>	Cape pigweed	
<i>Amaranthus spinosus</i>	Thorny pigweed	
<i>Amaranthus thunbergii</i>	Red pigweed	
<i>Arctotis venusta</i>	Free State daisy	
<i>Argemone subfusiformis</i>	Mexican poppy	
<i>Bidens pilosa</i>	Blackjack	

<i>Chenopodium album</i>	White goosefoot
<i>Chenopodium ambrosioides</i>	American goosefoot
<i>Chenopodium carinatum</i>	Green goosefoot
<i>Chenopodium murale</i>	Nettle-leaved goosefoot
<i>Cirsium arvense</i>	Canada thistle
<i>Citrullus lanatus</i>	Bitter apple
<i>Conyza albida</i>	Tall fleabane
<i>Cucumis spp</i>	Wild cucumber
<i>Datura ferox</i>	Large thorn apple
<i>Datura stramonium</i>	Thorn apple
<i>Galinsoga parviflora</i>	Gallant soldier
<i>Gisekia pharnaceoides</i>	Gisekia
<i>Gnaphalium subfalcatum</i>	Cudweed
<i>Lepidium africanum</i>	Pepper cress
<i>Pentzia grandiflora</i>	Stinkweed
<i>Physalis angulata</i>	Wild gooseberry
<i>Pseudognaphalium luteo-album</i>	Jersey cudweed
<i>Richardia brasiliensis</i>	Tropical Richardia
<i>Spergula arvensis</i>	Corn spurry

**2.2. Grasses:** The following grasses will be controlled at the rates and growth stages as indicated below.

<b>KALACH 510 SL <i>l</i>/ha</b>	
<b>1,0 – 2,2</b>	<b>2,2</b>
<b>1 leaf to pre-bloom</b>	<b>Flowering</b>
<i>Avena fatua</i>	Common wild oats
<i>Avena spp</i>	Wild oats
<i>Briza maxima</i>	Quaking grass
<i>Bromus diandrus</i>	Ripgut brome
<i>Ehrharta longifolia</i>	Oat-seed grass
<i>Eleusine indica</i>	Goose grass
<i>Eragrostis curvula</i>	Weeping love grass
<i>Hordeum murinum</i>	Wild barley
<i>Lolium multiflorum</i>	Italian rye grass
<i>Lolium temulentum</i>	Darnel
<i>Panicum schinzii</i>	Sweet buffalo grass
<i>Poa annua</i>	Winter grass
<i>Rhynchelytrum repens</i>	Natal red-top
<i>Secale cereale</i>	Rye
<i>Sorghum bicolor</i>	Wild grain-Sorghum
<i>Tragus racemosus</i>	Large carrot-seed grass

### 2.3. Broadleaf weeds and grasses

KALACH 510 SL €/ha		
1,0 – 1,5	1,5 – 2,2	2,2 – 2,9
1- 12 leaf	12 leaf to pre-bloom	Flowering
<i>Arctotheca calendula</i>	Cape marigold	
<i>Chamaesyce hirta</i>	Red milkweed	
<i>Chamaesyce inaequilatera</i>	Smooth creeping milkweed	
<i>Chloris virgata</i>	Feathertop Chloris	
<i>Commelina benghalensis</i>	Wandering Jew	
<i>Conyza canadensis</i>	Canadian fleabane	
<i>Conyza albida</i>	Tall fleabane	
<i>Coronopus didymus</i>	Swine cress	
<i>Crotolaria sphaerocarpa</i>	Mealie Crotolaria	
<i>Emex australis</i>	Spiny emex	
<i>Fumaria muralis</i>	Fumitory	
<i>Hibiscus cannabinus</i>	Kenaf	
<i>Hibiscus trionum</i>	Bladderweed	
<i>Ipomoea purpurea</i>	Common morning glory	
<i>Paspalum urvillei</i> (seedlings)	Tall Paspalum	
<i>Phalaris minor</i>	Little seeded canary grass	
<i>Portulaca oleracea</i>	Common purslane	
<i>Raphanus raphanistrum</i>	Wild radish	
<i>Schkuhria pinnata</i>	Dwarf marigold	
<i>Senecio burchellii</i>	Moltene-disease Senecio	
<i>Sesamum triphyllum</i>	Wild sesame	
<i>Setaria pallide-fusca</i>	Red bristle grass	
<i>Setaria verticillata</i>	Sticky bristle grass	
<i>Sonchus oleraceus</i>	Common sowthistle	
<i>Tagetes minuta</i>	Tall khaki weed	
<i>Tribulus terrestris</i>	Common dubbeltjie	
<i>Veronica spp.</i>	Speedwell	
<i>Zea mays</i>	Volunteer maize	
<i>Triticum spp</i>	Volunteer wheat	

### 2.4 Broadleaf weeds and grasses

KALACH 510 SL €/ha		
1,8 – 2,2	2,2 – 3,6	3,6 – 4,3
1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Cleome gynandra</i>	Spider-wisp	
<i>Digitaria sanguinalis</i>	Crab finger-grass	
<i>Echinochloa crus-galli</i>	Barnyard grass	
<i>Echium lycopsis</i>	Patterson's curse	
<i>Hypochoeris radicata</i>	Hairy wild lettuce	
<i>Panicum maximum</i>	Common buffalo grass	
<i>Paspalum urvillei</i>	Tall Paspalum	
<i>Plantago lanceolata</i>	Narrow-leaved ribwort	
<i>Polygonum aviculare</i>	Prostate knotweed	
<i>Sida cordifolia</i>	Heartleaf Sida	
<i>Solanum nigrum</i>	Nightshade	
<i>Urochloa panicoides</i>	Garden Urochloa	
<i>Verbena officinalis</i>	European Verbena	

### 2.5 Broadleaf weeds

KALASH 510 SL €/ha		
1,0 – 4,3	4,3	4,3

1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Erodium moschatum</i>	Musk heron's bill	

## 2.6 Broadleaf weeds

KALACH 510 SL ℓ/ha		
4,3	4,3	4,3
1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Malva parviflora</i> <i>Oenothera stricta</i>	Small mallow Evening primrose	

## 2.7 Broadleaf weeds

KALACH 510 SL ℓ/ha		
3,6 – 4,3	3,6 – 4,3	3,6 – 4,3
1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Rumex angiocarpus</i>	Sheep sorrel	

## 2.8 Broadleaf weeds

KALACH 510 SL ℓ/ha		
2,9	5,8	2,2 % Solution:
1 – 12 leaf	12 leaf to pre-bloom	Flowering
<i>Acacia saligna</i>	Port Jackson willow	

## NOTES

- For *Malva parviflora* [small mallow] and *Oenothera stricta* [evening primrose] (smaller than 12 leaf stage) control, spray **KALACH 510 SL** at 2,2 ℓ/ha in combination with the recommended simazine SC rate for the soil type.
- For problem ***Erodium moschatum*** [Musk heron's bill] (low growing type) control in grapevines and deciduous fruit, apply 1,5 ℓ/ha **KALACH 510 SL** prior to budburst. Regrowth must be sprayed 4 to 6 weeks later with PARAQUAT plus SIMAZINE SC. Refer to PARAQUAT and SIMAZINE SC labels for rates and details.

## 3. SPECIFIC RECOMMENDATIONS

CROP	REMARKS
3.1 Almonds, Aloes, Apples, Apricots, Avocados, Bananas, Blackberry, Cherries, Citrus, Coffee, Granadilla, Guava, Hops, Kiwi fruit, Litchies, Macadamia nuts, Mangoes, Nectarines, Olives, Pawpaw, Peaches, Pears, Pecan nuts, Pineapples, Plums, Cactus pear, Prunes, Quince, Tea.	1. See weed tables for dosage rates of <b>KALACH 510 SL</b> . 2. Protect young trees with green bark from direct spray.
3.2 Vines and fruit trees.	Apply before bud burst to vines older than 2 years. Younger vines with green bark should be shielded. Spray should be directed onto weeds. <b>Do not spray onto pruned vines or fruit trees until wounds have sealed properly.</b> <b>CROP COVER DESTRUCTION IN GRAPEVINES:</b> Apply <b>KALACH 510 SL</b> at 1,0 – 2,2 ℓ/ha. Apply 10 days or more after pruning and before bud burst.
3.3 Sisal	Applications can be made to nursery and mature plants.
3.4 Arable land	Use <b>KALACH 510 SL</b> after harvesting of previous crop. Do not disturb target plants before 6 hours after application (before planting of crops) and prior to emergence of new crop.

### 3.5 FORESTRY USAGE:

SITUATION	WEED SPECIES	DOSAGE RATE		REMARKS
		ℓ/ha	% SOLUTION (ℓ KALASH 510 SL IN 100ℓ WATER)	
<b>MAINTENANCE IN ESTABLISHED FORESTS</b>	<i>Acacia mearnsii</i> (black wattle)	2,2	1,0	Apply to young trees up to 1m high.
	<i>Solanum mauritianum</i> (bugweed)	1,5	1,0 0,4	<b>Large trees:</b> Cut to 50 cm, allow new growth of at least 50 cm before application. <b>Saplings:</b> Apply directly to foliage.
	<i>Rubus</i> spp (American bramble)	4,3	2,2	Slash rank growth in winter. Apply when new growth is more than 0,5m high. If regrowth occurs, spray with 1,0% solution.
<b>1. FIREBREAKS</b> Firebreaks pre-paration either tracer belts or total area.  <b>2. BAND PRE-PARATION FOR TREE SEEDLINGS</b> Situations suit-able for such treatments include: a) Virgin veld b) Clear felled forests	In both situations (1 and 2) weed population would include peren-nials and annuals. For list of some of the weeds control-led refer to list.	2,9	1,5	A minimum of 200 ℓ spray mixture / ha must be applied when using the 1,5 % solution.  A follow-up treatment may be necessary to control some hardy perennials using a 1,5 % solution on a spot spray basis.

CROP	DOSAGE	REMARKS
<i>Eucalyptus grandis</i> (bluegum)	3,6 % solution	<b>Single stem stumps:</b> Apply 50 mℓ solution to a clean cambium area immediately after felling.
	5.0 % solution	<b>Multistem stumps:</b> Apply 100 mℓ solution to a clean, fully exposed cambium layer immediately after felling. If regrowth occurs, spray with 1,5 % solution.

### 3.6 SUGARCANE LAST RATOON ERADICATION

CROP	DOSAGE	REMARKS
Minimum tillage.	5,8 – 7,2 ℓ/ha	Allow regrowth after final harvest to grow up to 45 cm – 1,0 m in height [ tillering stage ] , then apply the spray mixture in 100 – 400 ℓ/ha as a post -emergence spray on the leaves of the tillers.
Combination tillage.	2,9 – 5,8 ℓ/ha.	Use the higher rate on fertile soils where regrowth might be a problem. Spray the <b>KALACH 510 SL</b> solution on regrowth of the sugarcane when the ratoon cane is about 0,35 – 1 m in height. Allow 5 – 10 days application before the cane stool is sheared at a depth of 10 – 15 cm below soil surface with a blade shear implement or similar implement.
Spot eradication.	7,2 % solution	This treatment will also control certain grasses and broadleaf weeds. Apply spray solution directly on cane stools.
Preplant land preparation.	0,7 – 2,2 ℓ/ha	Annual weeds: Apply to active growing annual weeds. Perennial weeds: Refer to tables under part 1 for details.
Spot spraying around sugarcane field.	1,5 % solution.	Direct sprays to active growing plants around field in problem areas to be cleaned.

### 4. MAIZE AND SOYBEAN VARIETIES CONTAINING THE GLYPHOSATE RESISTANT GENE

The use of **KALACH 510 SL** on maize and soybean varieties containing the glyphosate resistant gene in accordance with the following label directions is expected to result in the normal growth of these crops. **Do not use KALACH 510 SL on maize and soybean varieties that do not contain the glyphosate resistant gene since this will result in the severe injury and death of these crops.**

The spray mixture must always contain at least 1.5 % **KALACH 510 SL**. When necessary the water volume must be adjusted to achieve 1.5 % spray solution. Apply in a maximum water volume of 125 ℓ water/ha. Avoid spraying to the point of run-off from the target leaf surfaces. This should not be a concern at volumes of 100 to 125 ℓ/ha. Use low pressures of 100–150 kPa with appropriate nozzles (eg flat fan or twin jet nozzles) to deliver the required water volume and dosage rate per hectare.

## Application information

CROP	APPLICATION	REMARKS
<b>Glyphosate tolerant Maize &amp; Soybeans</b>	<p><b>Overall application.</b> Apply from ground cracking stage up to the V8 stage, when the first plants in a field have 8 leaves with closed collars around the main stem (the actual number of leaves may be more). Application after this stage could result in delayed maturity and/or yield loss. Only apply if the passing of the spray equipment will not cause mechanical damage to the crop.</p> <p><b>Directed application.</b> Apply after the V8 stage where row spacing permits the passage of the application equipment without causing mechanical damage to the crop.</p>	<p>Where sequential applications are necessary the second application should not occur within 10 days of the first application. If the maize is beyond the V8 stage a directed application will be necessary.</p> <p>Directed applications can be made after the V8 stage where the row spacing permits the passage of the application equipment without causing mechanical damage to the crop. Row spacings of 150 cm and 210 cm is recommended for conventional tractor mounted spray rigs.</p>

## Dosage rates

WEEDS	DOSAGE (ℓ/ha)	REMARKS
Annual grasses and broadleaf weeds	1,5	Apply before weeds are 100 mm high.
Annual grasses and broadleaf weeds	1,8	Apply when weeds are between 100 and 200 mm high.
<i>Commelina benghalensis</i> (wandering jew)	1,8	Apply at the three leaf stage followed by a second application of 1,8 ℓ/ha 10–20 days later.
<i>Ipomoea purpurea</i> (morning glory)	1,8	Apply at the three to five stage followed by a second application of 1,8 ℓ/ha 10–20 days later.
<i>Portulaca oleracea</i> (common purslane)	1,8	Apply before flowering.
<i>Cyperus esculentus</i> (yellow nutsedge)	1,8	Apply before plants are 100 mm high.
<i>Cyperus esculentis</i> (yellow nutsedge)	1,8	Apply at the three to four leaf stage followed by a second application of 1,8 ℓ/ha 10–20 days later.

### Notes on the use with other herbicides and tank mixes

When other herbicides are used as pre-plant, pre-plant incorporated, pre-emergence and post-emergence treatments in maize varieties with the glyphosate resistant gene, followed by **KALACH 510 SL** applications, the recommendations on the labels of these products must be followed.

In maize varieties with the glyphosate resistant gene **KALACH 510 SL** may also be tank mixed with DIAMANT 700 S (L7050) or ALACHLOR (L6667) for pre-emergent applications or with SAFFIER 750 (L7049) for post-emergence overall (before V8 stage) and directed (after V8 stage) applications. Follow the label recommendations of these herbicides. **Do not mix KALACH 510 SL and ATRAZINE containing herbicides.**

## 5. SOYBEANS CONTAINING THE GLYPHOSATE RESISTANT GENE

**KALACH 510 SL** may be applied as post-emergence to glyphosate resistant soybeans on active growing weeds up to flowering. Allow a minimum of 14 days between applications and harvesting. Any plants that do not contain the glyphosate resistant gene would die when sprayed with glyphosate based products.

On glyphosate resistant soybeans up to three applications of **KALACH 510 SL** could be made without any damage to crop. Do not spray more than 6 litres per hectare cumulatively in one particular season.

CROP	DOSAGE (ℓ/ha)	REMARKS (Refer to the tables above for individual weeds)
Glyphosate resistant gene soybeans	0,98	Apply before weeds are 100 mm high.
	1,3	Apply when weeds are between 100 and 200 mm high.
	2,6	Apply in summer at pre-flowering stage. <i>Commelina bengalensis</i> , <i>Cyperus esculentus</i> , <i>Ipomeae purpurea</i> and <i>Porulaca oleracea</i> are controlled inconsistently and would require a follow on spray:

### Notes

- Special care should be taken to apply it only over glyphosate resistant crops or cultivars within the crop.
- Avoid drift or the application of **KALACH 510 SL** on non-glyphosate resistant gene crops as this will result in severe crop injury, reduced yields and crop losses.
- **KALACH 510 SL** may not be applied by means of aerial application to glyphosate torelant crops.

### Explanatory note:

**Saffier 750 (L7049)** is registered by UPL South Africa (Pty) Ltd

**Diamant 700 S (L7050)** is registered by UPL South Africa (Pty) Ltd

**Alachlor (L6667)** is registered by UPL South Africa (Pty)Ltd