

# PIRANHA 360 SL

Reg. No. / Nr L8877 Act No. 36 of 1947/ Wet Nr 36 van 1947

HERBICIDE



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

HRAC: HERBICIDE GROUP CODE

9

HRAC: ONKRUIDDODER GROEPKODE

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. May also be used in program for Banana bunchy top control.

'n Oplosbare konsentraat nie-selektiewe, blaartoegedienende sistemiese onkruidodder vir die beheer van verskeie eenjarige en meerjarige grasse, breëblaaronkruide en sekere houtagtige onkruid soos aangedui. Mag ook in program vir piesang bossiekte beheer gebruik word.

## ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL:

glyphosate (glycine).....360 g a.i./ℓ.....glifosaat (glisien)  
as glyphosate isopropylamine salt..... 480 g/ℓ.....as glifosaat isopropielamiensout



**DANGER**

### Hazard Statements:

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
Toxic to aquatic life with long lasting effects.

### Precautionary Statements:

IF SWALLOWED: Call a doctor if you feel unwell.  
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.  
Immediately call a doctor.  
If skin irritation occurs: Get medical advice/ attention.

Batch No:

D.O.M:

D.O.E:

Net Mass:

See reverse of packaging for details.

FOR FULL PARTICULARS SEE ATTACHED PAMPHLET.  
VIR VOLLEDIGE BESONDERHEDE KYK AANGEHEGTE ETIKET.

UN No. / VR Nr: 3082



REGISTRATION HOLDER/ REGISTRASIEHOUER  
Safeguard Crop protection (Pty) Ltd.  
Reg. Nr.: Reg. No.1971/012583/07  
61 Marshall Drive, Old Mill Industrial Park,  
Mount Edgecombe, South Africa, 4300  
Tel: 031 003 3486

Poison Information Helpline (24 hrs): 0861 555 777



BARCODE

100686

165(H) x 140(W) mm

CYAN MAG YEL BLK

100686

## WARNINGS

**Hazard Statements:** Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic to aquatic life with long lasting effects.

- Handle product with caution.
- Do not mix, store or apply **PIRANHA 360 SL** solutions in galvanized steel or unlined steel (except stainless steel) containers or spray tanks, as a reaction will cause hydrogen gas to form, which is highly combustible.
- Store in a cool, dry, well-ventilated place.
- Store away from food, feeds, seed, fertilizers and other agricultural chemicals.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry Interval:** 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 water or adjacent areas.

## NOTE

**PIRANHA 360 SL** is a highly active herbicide that in small quantities, when used incorrectly can cause serious damage to crop seedlings, deciduous fruit trees and grape vines during the budding and early season growth stages. Under the following conditions it can cause serious damage as far as 3 to 5 km from the nearest spray path of the aircraft: Cloudy weather with relative humidity above 80 % and low air movement of less than 5 km per hour. When such conditions prevail, aerial application should NOT be carried out where crop seedlings, deciduous fruit trees and grape vines in budding or early development stages are present within 5 km of the nearest spray path of the aircraft.

**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

### Precautionary Statements

**General:** If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read label before use.

**Prevention:** Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

**Response:** IF SWALLOWED: Call a doctor if you feel unwell. 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. Immediately call a doctor. Specific treatment (see supplemental first aid instruction on this label). Rinse mouth. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal:** Dispose of contents and container to an approved waste disposal plant.

- Prevent drift of spray onto other crops, grazing, rivers, dams or areas not under treatment as this may cause serious crop damage.
- Clean application equipment after use and do not dispose of wash water where it can contaminate other crops, grazing, rivers or dams.
- **TRIPLE RINSE the empty container as follows:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://www.croplife.co.za)). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.
- Destroy empty container and do not use for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.
- Direct or spray drift contact by **PIRANHA 360 SL** onto leaves and/or immature bark of desired plants can result in serious localised or translocated damage.

## RELEVANT SUBSTANCES

NAME	PRODUCT IDENTIFIER
Glyphosate TC	CAS-No.: 1071-83-6
Amines, tallow alkyl, ethoxylated	CAS-No.: 61791-26-2
2-aminopropane, isopropylamine	CAS-No.: 75-31-0

## RESISTANCE WARNING

**PIRANHA 360 SL** is a group code 9 herbicide. Any weed population may contain individuals naturally resistant to **PIRANHA 360 SL** and other group code 9 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **PIRANHA 360 SL** or any other group code 9 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.

## IMPORTANT

- Inconsistent control of certain grass populations and other weeds such as *Lolium* species, *Phalaris* species, *Avena* species, (reported known resistance), *Chenopodium* species (plants with waxy leaves), *Conyza bonariensis* (Flax-leaf fleabane), *Commelina bengalensis* (Benghal wandering Jew), *Ipomoea* species (natural resistance) occur, due to resistance against Glyphosate.
- Some of these populations might be resistant to products containing Paraquat and Diquat.
- Some populations might be resistant to products containing the aryloxyphenoxy propionates, cyclohexanediones and sulfonylureas, but might also have resistance against the Glyphosate containing products e.g. **PIRANHA 360 SL**.
- Due to the fact that these resistance populations vary in size and localities and are difficult to ascertain, it is essential that each land must be inspected annually to identify possible resistance early.
- If the above mentioned preventative measures are not strictly adhered to, the registration holder cannot be held responsible for the failure of **PIRANHA 360 SL** to control resistant weeds.

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

## MODE OF ACTION

Inhibits 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS), an enzyme of the aromatic acid biosynthetic pathway. This prevents synthesis of essential aromatic amino acids needed for protein biosynthesis. Non-selective systemic herbicide, absorbed by the foliage, with rapid translocation throughout the plant.

**DIRECTIONS FOR USE: Use only as directed.**

## GENERAL INFORMATION AND USE RESTRICTIONS:

- The herbicidal action is only visible from two weeks after application onwards.
- Apply **PIRANHA 360 SL** post-emergence to vigorously growing weeds, directed to the foliage and immature bark. For difficult to control perennial weeds, application in autumn is recommended when weeds are actively translocating nutrients into their roots, bulbs, rhizomes and stolons. Any re-growth should be spot sprayed.
- Do not spray whilst weeds are wet, dormant or under stress nor when covered in a layer of dust or when damaged by frost.
- Rain or irrigation within 6 hours after application can reduce the efficacy of **PIRANHA 360 SL**.
- In mixed weed situations (annuals in amongst problem perennials), mow or spray out annuals, wait for vigorous re-growth of perennials and then spray or spot spray re-growth.
- When applied in a tank mix with other chemicals the label recommendations of all products apply.
- Pre-plant weed control on sandy soil (< 10 % clay) should take place at least 7 days before transplanting tomato or tobacco seedlings.

## COMPATIBILITY:

- **PIRANHA 360 SL** can be tank mixed with the following crop protection chemicals:  
MCPA (Potassium salt), SIMAZINE SC and WP (with the addition of a suitable adjuvant), DIURON SC and WP (with the addition of a suitable

adjuvant) (Ammonium sulphate)). Note that a pH that is too low could induce the precipitation of hormone herbicides such as MCPA. Therefore, ensure that only suitable registered adjuvants that do not alter the pH are used in mixtures of **PIRANHA 360 SL** and MCPA.

#### **NOTE**

The addition of suitable, registered adjuvants to the spray water before adding Diuron or Simazine in tank mixtures with **PIRANHA 360 SL**, improves compatibility.

#### **Surfactants / Additives:**

- For optimum results a minimum of 1.5 % **PIRANHA 360 SL** solution in the total spray volume is recommended. If it is less, a surfactant should be added to the spray mixture.
- In areas with alkaline water, a buffer should be added according to the label instructions.
- Add an Ammonium sulphate containing adjuvant to the application water, for hard and brackish water correction, before the addition of **PIRANHA 360 SL**.

#### **APPLICATION INFORMATION:**

- Correctly calibrate all sprayers under field conditions and ensure that the spraying equipment is in good working order.
- **PIRANHA 360 SL** can be applied in spray volumes ranging from 12 to 600 litres per hectare.
- Ensure that the spray equipment is clean and free of rust, dust and sediment from other chemicals.
- Always use clean water. Avoid the use of brack or muddy water, or water with a high colloid content derived from soils high in organic matter.
- In situations where drift may be hazardous, use low pressures of 100 to 200 kPa and/or low drift nozzles when spraying.
- Do not spray when wind speed exceeds 10 km per hour.
- Ensure a fine (NOT a mist spray), even droplet distribution and thorough coverage of the target weeds.

#### **AERIAL APPLICATION:**

Aerial application of **PIRANHA 360 SL** 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:

- 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 50 litres 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 aurally 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 micron is recommended. 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

Tables 1 to 3:

Tables 4 to 5:

Table 6:

Tables 7 to 9.4:

Tables 10 to 12:

Table 13:

Table 14:

Noxious and Problem weeds.

Annual weeds (broadleaved & grasses), Perennial grasses.

Crop recommendations, tree crops, pre-planting.

Specialised practises (forestry & Eucalyptus eradication, sugarcane, chemical mowing).

Industrial weed control.

Pasture renovation.

Wipe-type application.

### Weed control:

Percentage calculation, e.g.

1.5 % solution = 1.5 litres **PIRANHA 360 SL** in 98.5 litres water = 100 litres spray solution.

## 1. CONTROL OF NOXIOUS AND PROBLEM WEEDS

### 1.1 Noxious weeds

Table 1.

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<i>Acacia mearnsii</i>	Black wattle	3.0	1.5	Apply in summer to young trees from 0.1 to 2.0 m high.
<i>Acacia saligna</i>	Port Jackson willow	2.0 to 4.0	1.5	Apply in autumn or spring. <b>Seedlings only:</b> Bipinnate leaf stage = 2 litres per hectare.
<i>Caesalpinia decapetala</i>	Mauritius thorn	3.0	1.5	Apply with a knapsack sprayer during summer.
<i>Chromolaena odorata</i>	Paraffin weed	-	1.0	Slash re-growth in winter if necessary. Apply in summer to new growth when more than 0.5 m high.
<i>Convolvulus arvensis</i>	Field bindweed	6.0	3.0	Apply in summer at onset of flowering. If re-growth occurs spray with a 1.5 % solution.
<i>Lantana camara</i>	Common Lantana	6.0	3.0	Slash large bushes in winter if necessary. Apply on active growth in summer.
<i>Opuntia ficusindica</i>	Prickly pear	-	33	<b>For trees with 20 to 250 cladodes:</b> Drill 4 to 12 holes in the stem and inject 3 ml of a 33 % solution per hole.
<i>Phytolacca Heptandra</i>	Ink berry	3.0	1.5	Apply in summer with a knapsack sprayer.
<i>Plantago lanceolata</i>	Narrow-leaved ribwort	3.0	1.5	Apply in spring before flowering.
<i>Prosopis Glandulosa</i>	Mosquito tree	-	3-5	<b>Foliar applications:</b> Apply to seedlings 1 to 2 m high. Seedlings should be actively growing and should not show any signs of wilting or any other stress. Seedlings should have enough foliage before spraying. <b>Coppice applications:</b> Coppice should not exceed 1 m height. The coppice should be well foliated before spraying. The coppice should be actively growing and should not show any signs of wilting or any other stress. Care should be taken to wet the coppice thoroughly on the outside as well as on the inside of the canopy. <b>General:</b> Control will only be for a year (one season). Provision should be made to treat escapes, coppice developments and new seedlings in the following year.

<i>Rubus cuneifolius</i>	American bramble	6.0	3.0 4.0	Slash rank growth in winter. Apply in autumn or summer when new growth is more than 0.5 m high. If re-growth occurs, spray with a 1.5 % solution. Knapsack sprayer. Mist blower.
<i>Sesbania punicea</i>	Red Sesbania	3.0	1.5	<b>Seedling plants less than 1 m high:</b> Use a 1.5 % solution. <b>Tall shrubs:</b> Slash, spray re-growth with a 1.5 to 2.0 % solution at 1 m high.
<i>Solanum mauritianum</i>	Bugweed	2.0	1.5	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.

## 1.2 Perennial grasses:

Table 2

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<i>Cynodon dactylon</i>	Common couch grass	6.0	3.0	<b>Summer rainfall region:</b> Apply to active growth in autumn or summer. Follow-up application in summer at 4 litres per hectare. If re-growth occurs, spray with a 2.5 % solution. <b>Winter rainfall region:</b> Apply as above in autumn.
		9.0		
<i>Eragrostis curvula</i>	Weeping love grass	2.0	1.5	Only grass that germinated from seeds, i.e. not grass tufts. Apply onto actively growing plants in summer or autumn. Seedlings. Up to 60 cm height.
		4.0	1.5	
<i>Paspalum dilatatum</i>	Common Paspalum	6.0	3.0	Apply in summer at flowering, but before seed drop. If re-growth occurs, spray with a 1.5 % solution.
<i>Paspalum paspalodes</i>	Couch Paspalum	8.0 to 9.0	-	Apply in summer at flowering, but before seed drop. If re-growth occurs, spray with a 2 % solution or 4 litres per hectare. Apply the higher rate in the winter rainfall region.
<i>Panicum maximum</i>	Common buffalo grass	4.0	2.0	Apply in summer to actively growing plants in the early growth stage. If re-growth occurs, spray with a 1.5 % solution.
<i>Pennisetum clandestinum</i>	Kikuyu	4.0	2.0	Apply in summer to actively growing plants. If re-growth occurs, spray with a 1.5 % solution.
<i>Setaria megaphylla</i>	Bush buffalo grass	6.0	3.0	Apply to actively growing plants in autumn or summer. If re-growth occurs, spray with a 1.5 % solution.
<i>Sorghum halepense</i>	Johnson grass	4.0	2.0	Apply in summer or autumn. If re-growth occurs, spray with a 1.5 % solution.
<i>Sorghum verticilliflorum</i>	Common wildsorghum	2.0	1.5	Apply to actively growing plants in summer or autumn
<i>Stipa trichotoma</i>	Nassella tussock	4.0	1.5	Apply in winter using high water volumes. If re-growth occurs, spray with a 1.5 % or a 2 % solution.

### 1.3 Nutsedges

Table 3.

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<i>Cyperus esculentus</i>	Yellow nutsedge	6.0	-	Apply in summer at pre-flowering stage. If re-growth occurs, spray with a 1.5 % solution or 3.0 litres per hectare (best results attained in Feb/March).
<i>Cyperus rotundus</i>	Purple nutsedge			

## 2. CONTROL OF ANNUAL WEEDS

### 2.1 Annual broadleaved weeds

#### NOTE

- \* Even at the higher rates, the control of large established Ipomoea species\* (Common morning glory) and *Portulaca* species\* (Purslane) may be variable, necessitating a follow-up application.
- \*\* Inconsistent control of certain populations of *Chenopodium* species\*\* may be experienced. Avoid resistance by alternating the use of **PIRANHA 360 SL** with products from different chemical classes (refer “**RESISTANCE WARNING**”).
- \*\*\* Inconsistent control and resistance may occur with control of *Coryza* species.\*\*\*
- \*\*\*\* Inconsistent control.

The following broadleaved weeds will be controlled at the dosage rates and growth stages as indicated below:

Table 4.1.

PIRANHA 360 SL		
0.5 to 0.75 ℓ/ha	0.75 to 1.0 ℓ/ha	1.25 to 1.5 ℓ/ha
1 to 12-leaf	12-leaf to pre-flower	Flower
<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>		White flowered Mexican poppy
<i>Bidens Pilosa</i>		Blackjack
<i>Boerhavia diffusa</i>		Erect Boerhavia
<i>Cenia turbinata</i>		Goose daisy
<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>Cotula tenella</i>		Cotula
<i>Cucumis spp.</i>		Wild cucumber
<i>Datura ferox</i>		Large thorn apple
<i>Datura stramonium</i>		Thorn apple
<i>Galinosa parviflora</i>		Gallant soldier

<i>Gisekia pharaceoides****</i>	Gisekia
<i>Gnaphalium subfalcatum</i>	Cudweed
<i>Lepidium africanum</i>	Pepper cress
<i>Medicago spp.</i>	Medics
<i>Pentzia grandiflora</i>	Stinkweed
<i>Physalis angulata</i>	Wild gooseberry
<i>Pseudognaphalium luteo-album</i>	Cudweed
<i>Pseudognaphalium undulatum</i>	Undulate cudweed
<i>Spergula arvensis</i>	Corn spurry
<i>Stellaria media</i>	Chickweed

## 2.2 Annual broadleaved weeds

The following broadleaved weeds will be controlled at the dosage rates and growth stages as indicated below:  
Table 4.2.

PIRANHA 360 SL		
0.75 to 1.00 £/ha	1.00 to 1.50 £/ha	1.50 to 2.00 £/ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Arctotheca calendula</i>	Cape marigold	
<i>Conyza canadensis***</i>	Horseweed fleabane	
<i>Conyza floribunda***</i>	Tall fleabane	
<i>Coronopus didymus</i>	Swinecress	
<i>Crotalaria sphaerocarpa</i>	Mealie crotalaria	
<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>Oxalis pes-caprae</i>	Yellow sorrel	
<i>Portulaca oleracea*</i>	Purslane	
<i>Schkuhria pinnata</i>	Dwarf marigold	
<i>Senecio burchellii****</i>	Molteno-disease-plant	
<i>Senecio consanguineus****</i>	Starvation senecio	
<i>Sesamum triphyllum</i>	Wild sesame	
<i>Sonchus oleraceus</i>	Sowthistle	
<i>Tagetes minuta</i>	Khaki weed	
<i>Tetragonia caesia</i>	Self-sown wheat	
<i>Tribulus terrestris</i>	Dubbeltjie	
<i>Veronica spp.</i>	Veronica	

### 2.3 Annual broadleaved weeds

The following broadleaved weeds will be controlled at the dosage rates and growth stages as indicated below:  
Table 4.3.

PIRANHA 360 SL		
1.25 to 1.50 ℓ/ha	1.50 to 2.00 ℓ/ha	2.50 to 3.00 ℓ/ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Acalypha glabrata</i>	-----	
<i>Ageratum conyzoides</i>	Invading ageratum	
<i>Aizoon canariense</i>	-----	
<i>Boerhavia erecta</i>	Erect boerhavia	
<i>Cleome gynandra</i>	Spider wasp	
<i>Conyza bonariensis</i> ***	Flax-leaf fleabane	
<i>Corchorus trilocularis</i>	-----	
<i>Echium lycopsis</i>	Purple echium	
<i>Euphorbia chamaesyce</i>	Hairy creeping milk weed	
<i>Euphorbia geniculata</i>	Painted milkweed	
<i>Euphorbia hirta</i>	Red milkweed	
<i>Euphorbia inaequilatera</i>	Smooth creeping milk weed	
<i>Fimbristylis hispida</i>	Slender sedge	
<i>Flaveria bidentis</i>	Smelter's bush	
<i>Gnaphalium undulatum</i>	Undulated cudweed	
<i>Hypochoeris radicata</i>	Hairy wild lettuce	
<i>Ipomoea plebeia</i> *	-----	
<i>Lactuca seriola</i>	Wild lettuce	
<i>Lepidium bonariensis</i>	Pepper cress	
<i>Melinis nervigulumis</i>	-----	
<i>Nicandra physaloides</i>	Apple of peru	
<i>Oenothera rosea</i>	Rose evening primrose	
<i>Oxalis spp.</i>	Sorrel	
<i>Oxygonum sinuadum</i>	-----	
<i>Parthenium hysterophorus</i>	Domonion weed	
<i>Polygonum aviculare</i>	Prostrate knotweed	
<i>Raphanus raphanistrum</i>	Wild radish	
<i>Senecio apifolius</i> ****	-----	
<i>Sida cordifolia</i>	Heartleaf sida	
<i>Sida rhombifolia</i>	Arrowleaf-sida	
<i>Solanum nigrum</i>	Deadly nightshade	
<i>Tephrosia polystachya</i>	-----	
<i>Trianthema portulacastrum</i>	-----	

<i>Verbena officinalis</i>	European verbena
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#### 2.4 Annual broadleaved weeds

The following broadleaved weeds will be controlled at the dosage rates and growth stages as indicated below:

Table 4.4.

PIRANHA 360 SL		
0.75 to 3.00 $\ell$ /ha	3.00 $\ell$ /ha	3.00 $\ell$ /ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Erodium moschatum</i>	Musk heron's bill	
<i>Malva parviflora</i> +	Small mallow	

#### NOTE

+ - Not recommended for *Malva parviflora* (Small mallow) control at flowering.

+ - For control of *Malva parviflora* (Small mallow) and *Oenothera stricta* (Evening primrose) smaller than the 12 leaf stage, apply **PIRANHA 360 SL** at 3 litres per hectare, in combination with the recommended Simazine SC rate for the soil type.

#### 2.5 Annual broadleaved weeds

The following broadleaved weeds will be controlled at the dosage rates and growth stages as indicated below:

Table 4.5.

PIRANHA 360 SL		
7.50 to 9.00 $\ell$ /ha	7.50 to 9.00 $\ell$ /ha	7.50 to 9.00 $\ell$ /ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Rumex angiocarpus</i>	Sheep sorrel	

#### 2.6 Annual Grasses

#### NOTE

Even at the higher rates, the control of large, established tufted Ryegrass species\* and volunteer maize\* may be variable, which may necessitate a follow-up application. Adjust the rates for volunteer maize according to weed size and density.

The following grasses will be controlled at the dosage rates and growth stages as indicated below:

Table 4.6.

PIRANHA 360 SL		
0.5 to 0.75 $\ell$ /ha	0.75 to 1.00 $\ell$ /ha	1.25 to 1.5 $\ell$ /ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Avena spp.**</i>	Wild oats	
<i>Avena fatua**</i>	Common wild oats	
<i>Briza maxima</i>	Quaking grass	
<i>Bromus diandrus</i>	Ripgut brome	
<i>Eleusine indica</i>	Goose grass	
<i>Ehrharta longiflora</i>	Oat-seed grass	
<i>Hordeum murinum</i>	Wild barley	
<i>Lolium multiflorum*</i>	Italian ryegrass	
<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 cereal</i>	Rye
<i>Sorghum bicolor</i>	Wild grain-sorghum
<i>Tragus racemosus</i>	Large carrot-seed grass

### 2.7 Grasses

The following grasses will be controlled at the dosage rates and growth stages as indicated below:

Table 4.7.

PIRANHA 360 SL		
0.75 to 1.00 £/ha	1.00 to 1.50 £/ha	1.50 to 2.00 £/ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Chloris virgata</i>	Feathertop chloris	
<i>Paspalum urvillei</i> (seedlings)	Tall paspalum	
<i>Phalaris canariensis</i>	Canary grass	
<i>Phalaris minor**</i>	Little-seeded canary grass	
<i>Setaria pallide-fusca</i>	Red bristle grass	
<i>Setaria verticillata</i>	Sticky bristle grass	
<i>Triticum aestivum</i>	Volunteer wheat	
<i>Zea mays#</i>	Volunteer maize	

# PIRANHA 360 SL will not control **Glyphosate** resistant maize.

### 2.8 Grasses

The following grasses will be controlled at the dosage rates and growth stages as indicated below:

Table 4.8

PIRANHA 360 SL		
1.25 to 1.50 £/ha	1.50 to 2.00 £/ha	2.50 to 4.00 £/ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Bothriochloa insculpta</i>	-----	
<i>Brachiaria eruciformis</i>	Sweet signal grass	
<i>Dactyloctenium aegyptium</i>	Crowfoot	
<i>Digitaria sanguinalis</i>	Crab finger-grass	
<i>Echinochloa colona</i>	Marsh grass	
<i>Echinochloa crus-galli</i>	Barnyard grass	
<i>Eragrostis capensis</i>	-----	
<i>Eragrostis ciliaris</i>	-----	
<i>Eragrostis virescens</i>	Chilean love grass	
<i>Heteropogon contortus</i>	Common spear grass	
<i>Hyparrhenia gazensis</i>	-----	
<i>Panicum maximum</i>	Common buffalo grass	
<i>Paspalum urvillei</i>	Tall Paspalum	

<i>Pseudobrachiaria deflexa</i>	False signal grass
<i>Setaria sphacelata</i>	-----
<i>Themeda triandra</i>	Red grass
<i>Tragus berteronianus</i>	Small carrot-seed grass
<i>Urochloa mosambicensis</i>	Bushveld herringbone grass
<i>Urochloa panicoides</i>	Herringbone grass
<i>Trystachia leucotrix</i>	-----

### 2.9 Difficult to control weeds

The following application rates are recommended for spraying in midwinter in the winter rainfall areas, when conditions are less favourable for uptake and translocation of herbicides:

Table 5.

PIRANHA 360 SL		
3.0 l/ha	3.5 l/ha	3.75 l/ha
1 to 12 leaf	12 leaf to pre-flower	Flowering
<i>Arctotheca calendula</i>	Cape marigold	
<i>Chenopodium album</i>	White goosefoot	
<i>Conyza floribunda</i>	Tall fleabane	
<i>Erodium moschatum</i>	Musk heron's bill	
<i>Hypochoeris radicata</i>	Hairy wild lettuce	
<i>Lolium spp.*</i>	Ryegrass	
<i>Medicago polymorpha</i>	Clover	
<i>Raphanus raphanistrum</i>	Wild radish	
<i>Sonchus oleraceus</i>	Sow thistle	

### 3. SPECIFIC CROP RECOMMENDATIONS

Table 6.

BANANA		
Control measures for Bunchy Top on already infected plants		
<b>STEP 1:</b> Use <b>Piranha 360 SL</b> (glyphosate glycine) as indicated below on infected plants.		
<b>STEP 2:</b> A Follow up with a treatment with <b>Apache Gold 350 SC</b> must be undertaken.		
<b>BANANA PLANTS</b> <b>Step 1</b> <b>ALREADY DISEASED</b> WITH BUNCHY TOP VIRUS ( <i>Nanoviridae: Babuvirus</i> )	<b>Piranha 360 SL</b> For the destruction of banana plants already diseased with Bunchy Top Virus.	<b>To kill the diseased plant</b> , apply <b>Piranha 360 SL</b> at a rate of 200 ml product per 1 l water or <b>APPLICATION by injection</b> . Inject 5 ml to 15 ml of prepared solution per pseudostem. Use the higher rate on larger plants
<b>BANANA PLANTS</b> <b>Step 2</b> Banana aphid ( <i>Pentalonia nigronervosa</i> ) or <b>PREVENTION OF</b> BUNCHY TOP by virus ( <i>Nanoviridae: Babuvirus</i> )	<b>Apache Gold 350 SC</b> 100 ml per 100 l water	<b>Apply 35 ml to 60 ml of the solution per pseudostem</b> by stem injection. Use the higher rate on larger plants. Where plants are already infected the treatment with glyphosate as indicated above must be applied prior to the application of <b>Apache Gold 350 SC</b>
<b>Crop</b>	<b>Remarks</b>	

3.1 Almonds, Aloes, Apples, Apricots, Avocados, Bananas, Blackberry, Cherries, Citrus, Coffee, Granadilla, Guava, Hops, Kiwi fruit, Litchi's, Macadamia nuts, Mangoes, Nectarines, Olives, Pawpaw, Peaches, Pears, Pecan nuts, Pineapples, Plums, Prickly pears, Prunes, Quince, Tea	<ol style="list-style-type: none"> <li>1. Refer to weed tables for dosage rates of <b>PIRANHA 360 SL</b>.</li> <li>2. Protect young trees with green bark from direct spray.</li> </ol>
3.2 Vines and Fruit trees	<ul style="list-style-type: none"> <li>• Apply before bud burst to vines older than 2 years. Younger vines with green bark should be shielded.</li> <li>• Spray should be directed onto weeds.</li> <li>• <b>Do not spray onto pruned vines or fruit trees until wounds have been sealed properly.</b></li> </ul> <p><b>Crop cover destruction in grapevines:</b></p> <ul style="list-style-type: none"> <li>• For the control of <i>Avena</i> species** (Bearded oats, Common oats), <i>Lolium</i> species* (Italian ryegrass, Darnel) and <i>Secale cereale</i>* (Rye), apply <b>PIRANHA 360 SL</b> at 1.0 litre per hectare.</li> <li>• Apply at 10 days or more after pruning and before bud burst.</li> </ul>
3.3 Sisal	<ul style="list-style-type: none"> <li>• Applications can be performed on nursery and mature plants.</li> </ul>
3.4 Arable land	<ul style="list-style-type: none"> <li>• Use <b>PIRANHA 360 SL</b> after harvesting of the previous crop.</li> <li>• Do not disturb target plants before 6 hours after application (before planting of crops) and prior to emergence of the new crop.</li> </ul>

#### 4. SPECIALISED PRACTICES

##### 4.1 Forestry applications

Table 7.

Situation	Weed species	DOSAGE		REMARKS
		ℓ/ha	% Solution <b>PIRANHA 360 SL</b> (ℓ in 100ℓ water)	
Maintenance weed control in established forests	<i>Acacia mearnsii</i> (Black wattle)	3.4 to 4.0	1.5 to 2.0	Apply to young trees from 0.1 to 2 m high.
	<i>Solanum mauritianum</i> (Bugweed)	2.0	1.5	<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. (Bramble)	6.0	3.0	Slash rank growth in winter. Apply when new growth is more than 0.5 m high. If re-growth occurs, spray with a 1.5 % solution.
<b>Firebreaks</b> Firebreaks preparation either tracer belts or total area	In both situations the weed population would include perennials and annuals	4.0	2.0	A minimum of 200 litres spray mixture per hectare must be applied when using a 2 % solution.
<b>Band preparation for tree seedlings</b> Situations suitable for such treatments include: a) Virgin veldt b) Clear felled forests	For list of some of the weeds controlled refer to list under <b>Industrial weed control</b>			A follow-up treatment may be necessary to control some hardy perennials, using a 2 % solution on a spot spray basis.

<i>Eucalyptus grandis</i> (Blue gum)	Single stem stumps	5 % solution	Apply 50 ml solution to a clean cambium area immediately after felling.
	Multi-stem Stumps	7 % solution	Apply 100 ml solution to a clean, fully exposed cambium layer immediately after felling. If re-growth occurs, spray with a 2 % solution.

#### 4.2 Sugarcane

Table 8.

Situation	Dosage rate	Remarks
Last ratoon eradication (Minimum tillage)	8.0 to 10.0 ℓ/ha	<b>PIRANHA 360 SL</b> will effectively kill the last ratoon sugarcane after it has been harvested and allowed to re-grow to a height of + 45 cm, when tillering is complete. Spray actively growing sugarcane when tillers have emerged, using 100 to 400 litres per hectare. Regrowth can be removed by hand. <b>Contact your distributor for detailed information on all aspects of minimum tillage before spraying.</b>
Spot eradication of diseased plants	10 % solution	For spot eradication of diseased (eg. Smut) and Off-type cane stools. Apply as a directed spray on the target plant foliage.
Pre-plant	<b>Annual weeds:</b> 1.0 to 3.0 ℓ / ha <b>Perennial weeds:</b> Refer Table 1.	Apply onto actively growing weeds.
Spot spraying fields	2 % solution	Direct spot spraying onto actively growing weeds around fields, telephone poles, etc.

#### 4.3 Growth suppression (chemical mowing)

- The growth and flowering tempo of tufted and running perennial grasses can be suppressed by applying sub-lethal dosage rates of **PIRANHA 360 SL** to the grass, 5 to 10 days after mowing and before starting of growth of seed heads. Depending on species and dosage rate, grass growth can be prevented or reduced for up to 70 days (refer to dosage rates below).
- High dosage rates will result in a longer growth suppression period and a corresponding increase in chlorosis (yellowing).
- Over-application of **PIRANHA 360 SL** can lead to severe injury or death of the plants.
- Do not apply to grasses under stress conditions, e.g. drought, water logging etc.
- Adverse climatic conditions may lead to variable results and the period of growth suppression will be determined by prevailing weather conditions.
- Prior to spraying remove excess plant material (that remained after mowing), which may prevent the spray from coming into contact with the green grass foliage.
- Grasses are most sensitive to **PIRANHA 360 SL** in autumn and chlorosis can be expected to be greater in this period. Where minimum levels of chlorosis are required, dosage rates should not exceed 0.6 litre PIRANHA SL per hectare in summer or in autumn.
- Spray volumes should be from 50 to 150 litres per hectare and ensure even droplet distribution on the green petal foliage. Spray run-off should be avoided.

**Rates of PIRANHA 360 SL and expected periods of growth suppression:**

Table 9.1. Tufted perennial grass

Weeds	PIRANHA 360 SL ℓ/ha	Period (days)
<i>Digitaria smutsii</i> (Smut's finger grass) and <i>Hyperrhenia hirta</i> (Common thatching grass)	0.4 0.6 0.8 1.0	30 50 60 70

<i>Festuca</i> spp. (Fescues) and <i>Lolium</i> spp.* (Ryegrass)	0.6 to 0.8	30
<i>Sporobolus africanus</i> (Rush grass)	0.6 0.8 1.0	20 40 50

**Table 9.2. Running and perennial grasses**

Weeds	PIRANHA 360 SL ( $\text{L/ha}$ )	Period (days)
<i>Cynodon dactylon</i> (Common couch)	0.4 0.6 0.8 1.0	10 20 30 40
<i>Pennisetum clandestinum</i> (Kikuyu)	0.2 0.4 0.6	30 40 60

**Follow-up applications**

The period of growth suppression can be extended by follow-up sprays, which must take place before excessive foliar growth and seed heads start forming. The follow-up rate of **PIRANHA 360 SL** is dependent on desired length of growth suppression. Do not exceed 0.9 litre per hectare.

**Table 9.3.**

First application ( $\text{L/ha}$ )	Follow-up application ( $\text{L/ha}$ )
0.4 to 1.0	0.4 to 0.6

**Broadleaf plants and grass seedlings**

The growth of broadleaf plants will also be suppressed by these rates of **PIRANHA 360 SL**. Seedlings and young plants may be controlled by these treatments.

**Table 9.4.**

Situation	PIRANHA 360 SL ( $\text{L/ha}$ )	Remarks

Unwanted weeds	3.0 to 6.0	<p><b>Aerial application:</b></p> <ul style="list-style-type: none"> <li>• Apply onto actively growing plants in 30 to 50 litres water per hectare.</li> <li>• Application rate depends on plants size and density.</li> <li>• Plants 500 to 900 mm; apply 3 litres per hectare.</li> <li>• Plants 1.0 to 1.9 m; apply 4 litres per hectare.</li> <li>• Plants &gt; 2.0 m; apply 5 litres per hectare.</li> <li>• On very dense plant growth, apply 6 litres per hectare.</li> <li>• Do not apply more than 3 litres per hectare in ecologically sensitive areas.</li> </ul> <p><b>Ground application:</b></p> <ul style="list-style-type: none"> <li>• Apply as above in 100 to 600 litres water per hectare.</li> </ul>
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## 5. INDUSTRIAL WEED CONTROL

The rates listed below only apply to industrial weed control.

**Table 10.**

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<b>Perennial grasses:</b> <i>Cynodon dactylon</i>	Common couch grass	6.0	3.0	Apply to vigorous growing plants in summer or in autumn when nutrients are actively translocated to roots, rhizomes and stolons. Follow-up with 4 litres per hectare (2.5 % solution) if any re-growth occurs.
<i>Cynodon nlemfuensis</i>	East African grass	6.0	3.0	
<i>Pennisetum clandestinum</i>	Kikuyu	4.0	2.0	Spray on active growth in summer. Spray re-growth with 3 litres per hectare or a 1.5 % solution.
<i>Paspalum paspalodes</i>	Couch paspalum	6.0	3.0	Apply on active growing plants. Follow-up with half the recommended dosage rate if re-growth occurs.
<i>Paspalum dilatatum</i>	Common paspalum	6.0	3.0	
<b>Nutsedges:</b> <i>Cyperus esculentus</i>	Yellow nutsedge	6.0	3.0	Apply during flowering stage. Spray re-growth with 3 litres per hectare or a 1.5 % solution.
<i>Cyperus rotundus</i>	Purple nutsedge	6.0	3.0	

**Table 11.**

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<b>Annual broadleaved weeds:</b>				
<i>Amaranthus hybridus</i>	Cape pigweed	4 to 6	2 to 3	<p>Use 4 litres per hectare (2 % solution) when weeds are in the early growth stages.</p> <p>Use 5 litres per hectare (2.5 % solution) when weeds are in the early flowering stage.</p> <p>Use 6 litres per hectare (3 % solution) when weeds are in the seeding stage, but still actively growing.</p> <p>Do not apply onto matured weeds that are in a stage of desiccation.</p>
<i>Amaranthus spinosus</i>	Thorny pigweed			
<i>Argemone subfusiformis</i>	White flowered mexican poppy			
<i>Bidens bipinnata</i>	Spanish black jack			
<i>Bidens pilosa</i>	Black jack			
<i>Chenopodium album</i>	White goosefoot			
<i>Conyza floribunda***</i>	Tall fleabane			
<i>Datura ferox</i>	Large thorn apple			
<i>Datura stramonium</i>	Thorn apple			
<i>Oxalis pes-caprae</i>	Yellow sorrel			
<i>Polygonum aviculare</i>	Prostrate knotweed			
<i>Richardia brasiliensis</i>	Tropical richardia			
<i>Senecio ilicifolius</i>	Ragwort			
<i>Schkuhria pinnata</i>	Dwarf marigold			
<i>Tagetes minuta</i>	Khaki weed			

**Table 12.**

BOTANICAL NAME	COMMON NAME	DOSAGE		REMARKS
		ℓ/ha	% SOLUTION	
<b>Annual grasses</b>				
<i>Aristida junciformis</i>	Bristle grass	4 to 6	2 to 3	<p>Use 4 litres per hectare (2 % solution) when weeds are in the early growth stages.</p> <p>Use 5 litres per hectare (2.5 % solution) when weeds are in the early flowering stage.</p> <p>Use 6 litres per hectare (3 % solution) when weeds are in the seeding stage, but still actively growing.</p> <p>Do not apply onto matured weeds that are in a stage of desiccation.</p>
<i>Cymbopogon plurinodis</i>	Bitter turpentine grass			
<i>Digitaria sanguinalis</i>	Crab finger-grass			
<i>Diheteropogon filifolius</i>	Wire blue stem			
<i>Eleusine indica</i>	Goose grass			
<i>Eragrostis curvula</i>	Weeping love grass			
<i>Eulalia villosa</i>	Golden velvet grass			
<i>Loudetia simplex</i>	Russet grass			
<i>Monocymbium ceresiiforme</i>	Wild oat grass			
<i>Panicum maximum</i>	Common buffalo grass			
<i>Panicum natalense</i>	Natal buffalo grass			
<i>Rhynchelytrum repens</i>	Natal red-top			
<i>Sporobolus africanus</i>	Rush grass			
<i>Stiburus alopecuroides</i>	Pongwa grass			
<i>Tragus racemosus</i>	Large carrot-seed grass			
<i>Urochloa panicoides</i>	Herring-bone grass			

## 6. PASTURE RENOVATION

Table 13

Situation	Remarks
<b>Conventional Perennial running grass infestation</b>	<b>Mechanical and chemical renovation:</b>
Light pressure	Prepare seedbed. Allow perennial running grass and annual weeds to emerge. Apply <b>PIRANHA 360 SL</b> at recommended dosage rates for the weeds (Table 2). Sow new pasture 3 to 4 days after spraying.
Heavy pressure	Cultivate weeds and allow for re-growth. Apply the recommended rate of <b>PIRANHA 360 SL</b> . Allow one week after spraying before a second cultivation, seedbed preparation and planting/sowing.
Pre-sowing weed control	New germinating weeds can be controlled with 1.0 to 3.0 litres per hectare. <i>Cyperus</i> spp. (Nutsedge) will require 6 litres per hectare. Sow new pasture 3 to 4 days after application.

<b>Pasture replacement and field improvement</b>	Reduce trash by mowing or heavy grazing 3 to 4 weeks prior to application of <b>PIRANHA 360 SL</b> on re-growth. Plant new pasture 3 to 4 days after application.
<b>Pasture maintenance</b>	Control perennial and annual weeds in pastures by spot spraying with a 2 % solution or using wipe type equipment where weeds project above the pasture (Table 2).

#### NOTES

- Refer to the recommended dosage from the **Tables** above, to control annual and perennial weeds during renovation of established pastures.
- Use conventional or direct drill planting methods.
- Ensure that rank weed growth does not prevent spray coverage on the target area.
- Do not spray onto heavy growth of Kikuyu or Common quick grass with a reduced green leaf area. Burn at the end of winter to reduce dry mass. Allow re-growth during summer and spray re-growth late summer or spring. Establish new pasture in the autumn thereafter.

#### 7. WIPE TYPE APPLICATION

**Table 14**

<b>Type of applicator</b>	<b>Dosage rate ℓ/ha</b>	<b>Remarks</b>
Hand held roller applicators	Annuals: 5 % Perennials: 10 %	100 to 150 litres per hectare solution recommended where conventional spraying is not practical, i.e. low trellised or bush vines, etc.
Handheld or tractor mounted rope wick applicators	Delivery of up to 3 ℓ / ha OR a 50 % solution	Apply up to 3 litres per hectare solution in orchards and where weed/crop height differentiation exist e.g. control of a volunteer crop or resistant late germinating weeds in beans and groundnuts.
<b>NOTES</b>		
<ul style="list-style-type: none"> <li>• Use an approved wipe type applicator. These applicators make use of an absorbent material to transfer the <b>PIRANHA 360 SL</b> solution onto plants with which the applicator comes into contact.</li> <li>• Ensure that the wiper surface is kept clean. The wiper must not come into contact with the crop.</li> </ul>		

## WAARSKUWINGS

**Gevaarstellings:** Skadelik indien ingesluk. Veroorsaak velirritasie. Veroorsaak ernstige oogskade. Giftig vir waterlewe met langdurige effekte.

- Hanteer produk versigtig.
- Moet nie **PIRANHA 360 SL** meng, berg of toedien in gegalvaniseerde staal of ongevoerde staal (behalwe vlekvrystaal) houers of spuitennies nie, aangesien dit chemies met die staal reageer om waterstofgas te vorm, wat hoogs vlambaar is.
- Berg in 'n koel, droë, goed geventileerde plek.
- Stoor weg van voedsel, voer, saad, kunsmis en ander landbouchemikalieë.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Herbetreding:** Moet nie behandelde gebied betree alvorens die spuitneerslag droog is nie, tensy beskermende oorklere gedra word.
- **Lugtoediening:** Stel die inwoners in die onmiddellike omgewing van die lande, wat bespuit word, in kennis en reik die nodige waarskuwings uit. Moet nie oor water spuit of toelaat dat spuitnewel wegdryf en water of aangrensende areas besoedel nie.

**LET WEL:** **PIRANHA 360 SL** is 'n uiters aktiewe onkruidodder wat in klein hoeveelhede, indien verkeerdlik aangewend, ernstige skade kan aanrig aan gewassaailinge, sagtevrugtebome en wingerde, tydens bot en vroeë seisoensgroei. Onder die volgende klimaatstoestande kan dit ernstige skade aanrig vir so ver as 3 tot 5 km vanaf die naaste spuitbaan van die vliegtuig: Bewolkte weer met relatiewe humiditeit hoër as 80 % en stadige lugbeweging van minder as 5 km per uur. Waar sulke toestande heers, moet toediennings NIE gedoen word indien gewassaailinge, sagtevrugtebome of wingerde in bot of vroeë ontwikkelingsstadia voorkom binne 5 km vanaf die naaste spuitbaan van die vliegtuig nie.

**Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie, aangesien die werking en effek daarvan beïnvloed kan word deur faktore soos abnormale grond-, klimaats- en bergingstoestande, kwaliteit van verdunningswater, verenigbaarheid met ander produkte wat nie op die etiket aangedui is nie en die voorkoms van weerstand van die onkruid teen die betrokke middel, sowel as die metode, tyd en akkuraatheid van toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei, die omgewing of vir nadelige effek op mens of dier of vir 'n gebrek aan prestasie, as gevolg van die versuim van die gebruiker om die etiketaanwysings na te kom of as gevolg van die ontstaan van toestande welke nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in geval van enige onsekerheid.**

## VOORSORGMAATREÛLS:

### Voorsorgstellings

**Algemeen:** Indien mediese advies benodig word, hou produkhouer of etiket byderhand. Hou buite bereik van kinders. Lees etiket voor gebruik.

**Voorkoming:** Was hande, voorarms en gesig deeglik na hantering. Moet nie eet, drink of rook wanneer hierdie produk gebruik word nie. Verminder vrylating na die omgewing. Dra beskermende handskoene/beskermende kleres/oogbeskerming/gesigbeskerming.

**Reaksie:** INDIEN INGESLUK: Ontbied 'n dokter as jy onwel voel. INDIEN OP DIE VEL: Was met baie seep en water. INDIEN IN OË: Spoel versigtig uit met water vir 'n paar minute. Verwyder kontaklense, indien teenwoordig en maaklik om te doen. Gaan voort met spoel. Bel dadelik 'n dokter. Spesifieke behandeling (sien aanvullende noodhulpinstruksies op hierdie etiket). Spoel mond uit. Indien velirritasie voorkom: Kry mediese advies/aandag. Trek besoedelde kleres uit en was dit voor hergebruik. Versamel gemors.

**Berging:** Berg in 'n goed geventileerde plek. Hou die houer dig toe. Winkel toegesluit.

**Wegdoening:** Gooi inhoud en houer weg na 'n goedgekeurde afvalverwyderingsaanleg.

- Verhoed wegdrywing van die spuitnewel na ander gewasse, weiding, riviere, damme en areas nie onder behandeling nie, aangesien dit ernstige skade aan gewasse kan veroorsaak.
- Maak toedienningsapparaat deeglik skoon na gebruik en gooi spoelwater uit waar dit nie ander gewasse, weiding, boorgate, riviere of damme sal besoedel nie.
- **SPOEL die leë houer DRIEKEER UIT soos volg:** Keer die leë houer om oor die spuit- of mengtenk en dreineer vir ten minste 30 sekondes nadat die vloeitot drup verlangsaam het. Spoel die leë houer daarna drie keer agtereenvolgens uit met een kwart van die houervolume vars water en gooi die spoelwater in die spuit- of mengtenk. Prik die drievoudig uitgespoelde houer deur en gooi weg via 'n goedgekeurde versamelaar of herwinner ([www.cropife.co.za](http://www.cropife.co.za)). Moenie die houer begrawe, verbrand of skenk aan enige ander partye wat dit as 'n houer vir kos of drank kan gebruik nie.
- Moet nie die leë houer vir enige ander doel hergebruik nie.
- Voorkom besoedeling van voedsel, voer, drinkwater en eetgerei.
- Direkte of spuitnewelkontak van **PIRANHA 360 SL** met blare en/of onvolwasse bas van gewenste plante, kan lei tot gelokaliseerde of getranslokeerde skade.

## RELEVANTE STOWWE

NAAM	PRODUK IDENTIFISEERDER
Glifosaat TS	CAS-Nr.: 1071-83-6
Amiene, talk alkiel, geëtoksileerde	CAS-Nr.: 61791-26-2
2-Aminopropaan, isopropylamien	CAS-Nr.: 75-31-0

### WEERSTANDSWAARSKUWING:

**PIRANHA 360 SL** is 'n groepkode 9 onkruidodder. Enige populasie van 'n spesifieke onkruid mag individue insluit wat 'n natuurlike weerstand teen **PIRANHA 360 SL** of enige ander groepkode 9 onkruidodder het. Indien hierdie onkruidodder herhaaldelik aangewend word, kan die weerstandbiedende individue uiteindelik die onkruidpopulasie oorheers. Hierdie weerstandbiedende onkruid sal waarskynlik nie deur **PIRANHA 360 SL** of enige ander groepkode 9 onkruidodder beheer word nie.

Om weerstand teen onkruidodders te verhoog:

- Vermy die eksklusiewe herhaaldelike gebruik van onkruidodders met dieselfde groepkode. Wissel af met, of gebruik tenkingsels van produkte in verskillende onkruidodder groeikodes.
- Integreer ander beheermaatreels (chemies, verbouing, biologies) in onkruidodderprogramme.

### BELANGRIK:

- Wisselvallige beheer van sommige populasies grasse en ander onkruid soos *Lolium* spesies, *Phalaris* spesies, *Avena* spesies, (gerapporteerde bevestigde weerstand), *Chenopodium* spesies (hondebossie), *Commelina bengalensis* (Bengalse wandelende Jood), *Ipomoea* spesies (natuurlike weerstand) kan voorkom, as gevolg van weerstand teen Glifosaat.
- Van hierdie populasies mag ook weerstandbiedend teen produkte soos Parakwat en Dikwat wees.
- Sekere van hierdie populasies mag ook weerstandbiedend wees, teen onkruidodders van die arieloeksiefenoksie propionaat groep, sikloheksaan-dioon groep en sulfonielureum groepe en weerstand teen Glifosaat soos **PIRANHA 360 SL** mag ondervind word.
- Aangesien die grootte en omvang van hierdie weerstandbiedende populasies moeilik is om te bepaal, is dit noodsaaklik, dat lande jaarlikse ondersoek moet word om moontlike weerstand vroeg te identifiseer.
- Indien bostaande noodmaatreels nie nageset nagekom word nie, kan die registrasiehouer nie verantwoordelik gehou word indien **PIRANHA 360 SL** nie die weerstandbiedende onkruid beheer nie.

Vir spesifieke inligting oor weerstandsbestuur kontak die registrasiehouer van hierdie produk.

### WYSE VAN AKSIE

Inhibeer 5-enolpiruvylshikimate-3-phosphate sintase (EPSPS), 'n ensiem van die aromatiese suur biosintetiese pad. Dit verhoed die sintese van essensiële aromatiese aminosure wat nodig is vir proteïenbiosintese. Nie-selektiewe sistemiese onkruidodder, geabsorbeer deur die blare, met vinnige translokasie deur die plant.

### GEBRUIKSAANWYSINGS: Gebruik alleenlik soos aangedui.

#### ALGEMENE INLIGTING EN GEBRUIKSBEPERKINGS:

- Die onkruidodder-effek is eers vanaf twee weke na toediening sigbaar.
- Dien **PIRANHA 360 SL** na-opkoms van aktiefgroeiende onkruid toe, gerig op die blare en onvolwasse bas. Bespuit moeilik beheerbare meerjarige onkruid in die herfs, ten tye van aktiewe translokasie van plantvoedingsstowwe na die wortels, knolle, wortelstokke of uitlopers. Beheer hergroei met koltoediening.
- Moet nie spuit indien die onkruid nat, dormant, onder stremming, met stof bedek of deur ryp beskadig is nie.
- Reen of besproeiing binne 6 uur na toediening mag die effektiwiteit van **PIRANHA 360 SL** verminder.
- In gemengde onkruidsituasies (waar een- en meerjarige onkruid saam voorkom) moet die eenjarige onkruid chemies of meganies beheer word. Wag vir geïl hergroei van meerjarige onkruid en bespuit of kolbehandel hergroei.
- Indien in 'n tenkingsel met ander chemikalie toegedien word, geld die etiketaanbevelings van alle betrokke produkte.
- Voorplant onkruidbeheer op sandgrond (<10 % klei) moet ten minste 7 dae voor uitplant van tamatie- of tabaksaailing plaasvind.

### VERENIGBAARHEID:

• **PIRANHA 360 SL** kan in 'n tenkingsel met die volgende gewas beskermings chemikalie gebruik word: MCPA (Kaliumsout), SIMAZINE SC en WP (met die byvoeging van 'n geregistreerde bymiddel wat nie die Ph van die oplossing beïnvloed nie) DIURON SC en WP (met die

byvoeging van 'n geregistreerde bymiddel wat nie die pH van die oplossing beïnvloed nie (Ammoniumsulfaat). Lae pH kan 'n neerstig van hormoonokruiddoders soos MCPA veroorsaak en daarvoor moet die verbruiker verseker dat slegs toegelatte bymiddels wat nie die pH drasties sal verlaag nie gebruik word.

**NOTA:** Die byvoeging van geregistreerde bymiddels in die spuitenk voor Diuron of Simasien bygevoeg word, in tenkmengsels met **PIRANHA 360 SL**, verbeter mengbaarheid.

#### **Byvoegmiddels/benatters:**

- 'n Minimum **PIRANHA 360 SL** oplossing van 1.5 % in die totale spuitvolume word aanbeveel. Ingeval van 'n laer konsentrasie moet 'n benattingsmiddel by die spuitmengsel bygevoeg word.
- Voeg 'n buffer volgens etiketinstruksies by in areas met alkaliese water.
- In geval van harde- of brakwater, voeg 'n geregistreerde Ammoniumsulfaat bevattende byvoegmiddel by in die toedieningswater, voordat **PIRANHA 360 SL** by die mengsel gevoeg word.

#### **TOEDIENINGSINLIGTING:**

- Kalibreer alle spuite korrek onder veldtoestande en verseker dat die spuitapparaat in 'n goeie werkende toestand is.
- **PIRANHA 360 SL** kan toegedien word in spuitvolumes van 12 tot 600 liter per hektaar.
- Verseker dat spuittoerusting skoon en vry is van roes, stof of sediment van ander chemikalieë.
- Gebruik altyd skoon water. Voorkom die gebruik van brak- of modderige water of water met 'n hoe kolloïedinhoud afkomstig van gronde hoog in organiese materiaal.
- In situasies waar spuitnewel gevaarlik kan wees moet 'n lae druk van 100 tot 200 kPa en/of lae drywingspuitkoppe gebruik word.
- Moet nie in windspoed van hoër as 15 km per uur spuit nie.
- Verseker 'n fyn (NIE 'n missproei nie), egalige druppelverspreiding en 'n deeglike bedekking van die teikenonkruid.

#### **LUGTOEDIENING:**

**PIRANHA 360 SL** kan slegs deur 'n geregistreerde lugbespuitingsoperateur met 'n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SANS Kode 10118 (Aerial Application of Agricultural Pesticides) uit die lug bespuit word. Verseker dat die spuitmengsel eweredig oor die teikenarea versprei word en die verlies aan spuitmengsel tydens toediening tot 'n minimum beperk word. Dit is daarom belangrik om aan die volgende vereistes te voldoen:

- **Die gebruik van 'n geregistreerde drywingsbeheermiddel en/of lae drywing lugbespuiting spuitneuse (bv. "straight stream nozzles") word aanbeveel. In die geval van vastevlerkvliegtuie met 'n vliegspoed vinniger as 130 mph, mag die defleksiehoek van die spuitneuse of spuitstroom, soos gemeet vanaf 'n horisontale reguit oriëntasie na agter, nie 30 grade oorskry nie. In die geval van vastevlerk vliegtuie wat stadiger vlieg, mag die defleksiehoek, soos hierbo beskryf, nie 55 grade oorskry nie.**
- **Volume:** 'n Spuitmengsel volume van 30 tot 50 liter per hektaar word aanbeveel. Hierdie produk is nie teen 'n verlaagde volume getoets nie. Die registrasiehouer kan nie effektiwiteit waarborg, of verantwoordelik gehou word vir enige nadelige effekte indien hierdie produk teen 'n laer volume as hierbo aanbeveel, toegedien word nie.
- **Druppelbedekking:** 30 tot 40 druppels per cm<sup>2</sup> moet op die teikenarea herwin word.
- **Druppelgrootte:** 'n Druppelspektrum met 'n VMD van 300 tot 350 mikron word aanbeveel. Beperk die produksie van druppels kleiner as 150 mikron (hoe drywing en verdampingspotensiaal) tot 'n minimum.
- **Vlieghoogte:** Handhaaf die hoogte van die spuitbalk bo die teiken op 3 tot 4 meter. Moet nie spuit wanneer die vliegtuig duik, uitklim of draai nie.
- Gebruik geskikte **atomiseringsapparaat** wat die vereiste druppelgrootte en bedekking sal produseer, maar die minste verlies van produk verseker. Die spuitstelsel moet 'n druppelspektrum met die kleinste moontlike relatiewe Span produseer.
- Plaas al die atomiseerders in die binneste 60 tot 75 % van die vlerkspan om te verhoed dat druppels binne-in die **vlerkpuntvorteks** beweeg.
- Die verskil in **temperatuur** tussen die nat- en droeoboltermometer van 'n swaaighigrometer, moet nie 8°C oorskry nie.
- Stop bespuiting indien die **windspoed** 15 km per uur oorskry.
- Stop bespuiting tydens **turbulente**, onstabiele en droe toestande gedurende die hitte van die dag.
- Bespuiting onder temperatuur **inversie toestande** (deur bo of binne die inversie laag te spuit) en/of hoe **lugvogtoestande** (relatiewe humiditeit 80 % en meer) mag tot die volgende aanleiding gee:
  - a) verlaagde effektiwiteit aangesien die druppels as 'n wolk in die lug bly hang en moontlik verdamp (onvoldoende bedekking op teiken),
  - b) skade aan nie-teiken gewasse of sensitiewe areas as gevolg van wegdrywing van die spuitwolk na nie-teiken area.
- Verseker dat die lugbespuitingsoperateur presies weet watter lande bespuit moet word. Dit is noodsaaklik om 'n versekering van die lugbespuitingsoperateur te verkry dat aan al die bogenoemde vereistes voldoen sal word en dat data van belang in 'n logboek saamgevat word vir toekomstige verwysing.

**TOEDIENINGSHOEVEELHEDE:**

Tabelle 1 tot 3:	Indringer- en Probleemonkruid.
Tabelle 4 tot 5:	Eenjarige onkruid (breeblaaronkruid & grasse), Meerjarige grasse.
Tabel 6:	Gewasaanbevelings, boomgewasse, voor-plant
Tabelle 7 tot 9.4:	Gespesialiseerde praktyke (bosbou & Eucalyptus uitwissing, suikerriet, chemiese sny).
Tabelle 10 tot 12:	Industriële onkruidbeheer.
Tabel 13:	Weidingsopknapping.
Tabel 14:	Stryktype toediening.

**ONKRUIDBEHEER:**

Persentasie oplossing berekening, bv.  
1.5 % oplossing = 1.5 liter **PIRANHA 360 SL** in 98.5 liter water = 100 liter spuitoplossing.

**1. BEHEER VAN INDRINGER EN PROBLEEMONKRUID****1.1 Indringeronkruid****Tabel 1.**

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		ℓ/ha	% OPLOSSING	
<i>Acacia mearnsii</i>	Swart wattel	3.0	1.5	Dien toe in die somer op jong bome van 0.1 tot 2.0 m hoog.
<i>Acacia saligna</i>	Goudwilger	2.0 tot 4.0	1.5	Dien toe in herfs of lente. <b>Slegs saailinge:</b> Dubbelgeveerde blaarstadium = 2 liter per hektaar. Tot 60 cm hoog = 4 liter per hektaar.
<i>Caesalpinia decapetala</i>	Mauritius doring	3.0	1.5	Dien toe met rugsakspuit gedurende somer.
<i>Chromolaena odorata</i>	Paraffienbos	-	1.0	Kap hergroeï in die winter indien nodig. Dien toe in die somer op hergroeï wanneer dit hoër is as 0.5 m.
<i>Convolvulus arvensis</i>	Akkerwinde	6.0	3.0	Dien toe in die somer teen aanvang van blom. Indien hergroeï voorkom spuit met 'n 1.5 % oplossing.
<i>Lantana camara</i>	Lantana	6.0	3.0	Kap groot bosse in die winter indien nodig. Dien toe op aktiewe groei in die somer.
<i>Opuntia ficusindica</i>	Turksvy	-	33	<b>Vir bome met 20 tot 250 kladode:</b> Boor 4 tot 12 gate in die stam en spuit 3 ml van 'n 33 % oplossing in per gat.
<i>Phytolacca Heptandra</i>	Boesmandruiwe	3.0	1.5	Dien toe in somer met rugsakspuit.
<i>Plantago lanceolata</i>	Smalweebaar	3.0	1.5	Dien toe in lente voorblom.
<i>Prosopis Glandulosa</i>	Muskietboom	-	3-5	<b>Blaarbespuitings:</b> Dien toe op saailinge 1 to 2 m hoog. Saailinge moet aktief groei en nie enige tekens van verletheid of ander stresstoestand toon nie. Saailinge moet genoeg blare he voor bespuiting. <b>Stompgroei toedienings:</b> Stompgroei moet nie 1 m hoogte oorskry nie. Stompgroei moet oor goeie blaaroppervlak beskik voor bespuiting. Stompgroei moet aktief groei en nie tekens van verwelking of ander stresstoestand toon nie. Verseker deeglike benutting aan buite- en binnekant van die blaardak. <b>Algemeen:</b> Slegs een jaar (seisoen) beheer sal verkry word. Tref voorsorg om die volgende jaar onbespuitte plante ("escapes"), stompgroei ontwikkeling en nuwe saailinge te spuit.

<i>Rubus cuneifolius</i>	Braam	6.0	3.0 4.0	Kap welige groei in die winter. Dien toe in die herfs of somer wanneer nuwe groei hoer is as 0.5 m. Indien hergroeï plaasvind, spuit met 'n 1.5 % oplossing. Rugsakspuit. Newelblaser.
<i>Sesbania punicea</i>	Rooisesbania	3.0	1.5	<b>Saailinge laer as 1 m hoog:</b> Gebruik 'n 1.5 % oplossing. <b>Hoë struik:</b> Kap en spuit hergroeï met 'n 1.5 tot 2.0 % oplossing sodra 1 m hoog is.
<i>Solanum mauritianum</i>	Luisboom	2.0	1.5	Dien toe in die lente of somer. <b>Groot bome:</b> Sny tot 50 cm, laat hergroeï van minstens 50 cm toe, voor toediening. <b>Klein boompies:</b> Dien direk op blare toe.

## 1.2 MEERJARIGE GRASSE TABEL 2.

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		ℓ/ha	% OPLOSSING	
<i>Cynodon dactylon</i>	Gewone kweek gras	6.0	3.0	<b>Somer reënvalarea:</b> Dien toe op aktiewe groei in die herfs of somer. Volg toediening op in die somer teen 4 liter per hektaar. Spuit enige hergroeï met 'n 2.5 % oplossing. <b>Winter reënvalarea:</b> Dien toe soos hierbo in die herfs.
		9.0	-	
<i>Eragrostis curvula</i>	Oulandsgras	2.0	1.5	Slegs gras wat van saad ontkiem het, nie polgrasse nie. Dien toe op aktief groeiende plante in die somer of herfs. Saailinge. Tot met 60 cm hoogte.
		4.0	1.5	
<i>Paspalum dilatatum</i>	Gewone paspalum	6.0	3.0	Dien toe in die somer gedurende blom, maar voor saadval. Spuit enige hergroeï met 'n 1.5 % oplossing.
<i>Paspalum paspalodes</i>	Kweek-paspalum	8.0 tot 9.0	-	Dien toe in die somer gedurende blom, maar voor saadval. Spuit enige hergroeï met 'n 2% oplossing of 4 liter per hektaar. Dien die hoer hoeveelheid toe in die winter reënvalarea.
<i>Panicum maximum</i>	Buffelsgras	4.0	2.0	Dien toe in die somer op aktief groeiende plante in die vroeë groei stadium. Spuit enige hergroeï met 'n 1.5 % oplossing.
<i>Pennisetum clandestinum</i>	Kikuyu	4.0	2.0	Dien toe in die somer op aktief groeiende plante. Spuit enige hergroeï met 'n 1.5 % oplossing.
<i>Setaria megaphylla</i>	Breeblaarborselgras	6.0	3.0	Dien toe op aktief groeiende plante in die herfs of somer. Spuit enige hergroeï met 'n 1.5 % oplossing.
<i>Sorghum halepense</i>	Johnsons gras	4.0	2.0	Dien toe in die herfs of somer. Spuit enige hergroeï met 'n 1.5 % oplossing.
<i>Sorghum verticilliflorum</i>	Wilde-sorghum	2.0	1.5	Dien toe op aktief groeiende plante in die herfs of somer.
<i>Nassella trichotoma</i>	Nassela polgras	4.0	1.5	Dien toe in die winter en gebruik hoe water volumes. Spuit enige hergroeï met 'n 1.5 of 2 % oplossing.

### 1.3 Uintjies

Tabel 3.

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		ℓ/ha	% OPLOSSING	
<i>Cyperus esculentus</i>	Geeluintjie	6.0	-	Dien toe in die somer teen voorblomstadium. Spuit enige hergroei met 'n 1.5 % oplossing of 3.0 liter per hektaar (beste resultate word verkry in Feb/Maart).
<i>Cyperus rotundus</i>	Rooi-uintjie			Dien toe in die herfs of somer. Spuit enige hergroei met 'n 1.5 % oplossing.

## 2. BEHEER VAN EENJARIGE ONKRUIDE

### 2.1 EENJARIGE BREËBLAARONKRUIDE

#### LET WEL

\* Selfs teen die hoer dosisse kan die beheer van groot gevestigde *Ipomoea* spesies\* (Purperwinde) en *Portulaca* spesies\* (Porslein) wisselvallig wees en 'n opvolgbehandeling nodig wees.

\*\* Wisselvallige beheer in sekere populasies van *Chenopodium* spesies\*\* mag ondervind word. Vermyn weerstandbiedendheid deur die gebruik van **PIRANHA 360 SL** af te wissel met produkte van ander chemiegroepe (verwys "WEERSTANDSWAARSKUWING").

\*\*\* Wisselvallige beheer en weerstand mag ondervind word met die beheer van *Coryza* spesies.\*\*\*

\*\*\*\* Wisselvallige beheer.

Die volgende breëblaaronkruid word beheer teen die dosis en groeistadia soos hieronder aangedui:

Tabel 4.1.

PIRANHA 360 SL		
0.5 tot 0.75 ℓ / ha	0.75 tot 1.0 ℓ / ha	1.25 tot 1.5 ℓ / ha
1 tot 12-BLAAR	12-blaar tot voorblom	Blom
<i>Alternanthera pungens</i>	Kakiedubbeltjie	
<i>Amaranthus hybridus</i>	Misbredie	
<i>Amaranthus spinosus</i>	Doringmisbredie	
<i>Amaranthus thunbergii</i>	Roويمisbredie	
<i>Arctotis venusta</i>	Soetgousblom	
<i>Argemone subfusiformis</i> ****	Witblom bloudissel	
<i>Bidens Pilosa</i>	Knapsekereel	
<i>Boerhavia diffusa</i>	Cotula	
<i>Cenia turbinata</i>	Wilde komkommer	
<i>Chenopodium album</i> **	Grootstinkblaar	
<i>Chenopodium ambrosioides</i> **	Olieboom	
<i>Chenopodium carinatum</i> **	Knopkruid	
<i>Chenopodium murale</i> **	Gisekia	
<i>Cirsium arvense</i>	Cudweed	
<i>Citrullus lanatus</i>	Regop Boerhavia	
<i>Cotula tenella</i>	Ganskos	
<i>Cucumis spp.</i>	Withondebossie	

<i>Datura ferox</i>	Kruiehondebossie
<i>Datura stramonium</i>	Groenhondebossie
<i>Galinsoga parviflora</i>	Muurhondebossie
<i>Gisekia pharnaceoides****</i>	Speedissel
<i>Gnaphalium subfalcatum</i>	Karkoer
<i>Lepidium africanum</i>	Peperbossie
<i>Medicago spp.</i>	Medics
<i>Pentzia grandiflora</i>	Stinkkruid
<i>Physalis angulata</i>	Wilde-appelliefie
<i>Pseudognaphalium luteo-album</i>	Roerkruid
<i>Pseudognaphalium undulatum</i>	Groenbossie
<i>Spergula arvensis</i>	Sporrie
<i>Stellaria media</i>	Sterremuur

## 2.2 EENJARIGE BREËBLAARONKRUIDE:

Die volgende breëblaaronkruidе word beheer teen die dosisse en groeistadia soos hieronder aangedui:

Tabel 4.2.

PIRANHA 360 SL		
0.75 tot 1.00 ℓ/ha	1.00 tot 1.50 ℓ/ha	1.50 tot 2.00 ℓ/ha
1 tot 12 blaar	12 blaar tot voorblom	Blom
<i>Arctotheca calendula</i>	Witgousblom	
<i>Conyza canadensis***</i>	Peperkruid	
<i>Conyza floribunda***</i>	Wildelusern	
<i>Coronopus didymus</i>	Kaapse dubbeltjie	
<i>Crotalaria sphaerocarpa</i>	Duiwekerwel	
<i>Emex australis</i>	Kenaf	
<i>Fumaria muralis</i>	Terblansbossie	
<i>Hibiscus cannabinus</i>	Purperwinde	
<i>Hibiscus trionum</i>	Geelsuring	
<i>Ipomoea purpurea*</i>	Porslein	
<i>Oxalis pes-caprae</i>	Klein kakiebos	
<i>Portulaca oleracea*</i>	Burshell senecio	
<i>Schkuhria pinnata</i>	Hongerbos senecio	
<i>Senecio burchellii****</i>	Wildesesam	
<i>Senecio consanguineus****</i>	Sydissel	
<i>Sesamum triphyllum</i>	Kakiebos	
<i>Sonchus oleraceus</i>	Klappiesbrak	
<i>Tagetes minuta</i>	Dubbeltjie	
<i>Tetragonia caesia</i>	Veronica	
<i>Tribulus terrestris</i>	Dubbeltjie	
<i>Veronica spp.</i>	Veronica	

### 2.3 EENJARIGE BREËBLAARONKRUIDE

Die volgende breëblaaronkruidе word beheer teen die dossise en groeistadia soos hieronder aangedui:

Tabel 4.3.

PIRANHA 360 SL		
1.25 tot 1.50 ℓ/ha	1.50 tot 2.00 ℓ/ha	2.50 tot 3.00 ℓ/ha
1 tot 12 blaar	12 blaar tot voorblom	Blom
<i>Acalypha glabrata</i>	-----	
<i>Ageratum conyzoides</i>	Indringer ageratum	
<i>Aizoon canariense</i>	-----	
<i>Boerhavia erecta</i>	Regop boerhavia	
<i>Cleome gynandra</i>	Oorpynpeultjie	
<i>Conyza bonariensis</i> ***	Kleinskraalhans	
<i>Corchorus trilocularis</i>	Wilde jute	
<i>Echium lycopsis</i>	Pers echium	
<i>Euphorbia chamaesyce</i>	Harige kruipmelkkruid	
<i>Euphorbia geniculata</i>	Melkkruid	
<i>Euphorbia hirta</i>	Rooi melkkruid	
<i>Euphorbia inaequilatera</i>	Gladde kruipmelkkruid	
<i>Fimbristylis hispidula</i>	Fynbiesie	
<i>Flaveria bidentis</i>	Smeltersbossie	
<i>Gnaphalium undulatum</i>	Groenbossie	
<i>Hypochoeris radicata</i>	Harige skaapslaa	
<i>Ipomoea plebeia</i> *	-----	
<i>Lactuca seriola</i>	Wildeslaai	
<i>Lepidium bonariensis</i>	Peperbossie	
<i>Melinis nerviglumis</i>	-----	
<i>Nicandra physaloides</i>	Basterappelliefie	
<i>Oenothera rosea</i>	Rooskleurige nagblom	
<i>Oxalis spp.</i>	Suring	
<i>Oxygonum sinuadum</i>	-----	
<i>Parthenium hysterophorus</i>	Demoina bossie	
<i>Polygonum aviculare</i>	Voelduisendknoop	
<i>Raphanus raphanistrum</i>	Ramenas	
<i>Senecio apifolius</i> ****	-----	
<i>Sida cordifolia</i>	Hartblaartaaiman	
<i>Sida rhombifolia</i>	Smalblaartaaiman	
<i>Solanum nigrum</i>	Nastergal	
<i>Tephrosia polystachya</i>	-----	
<i>Trianthema portulacastrum</i>	-----	
<i>Verbena officinalis</i>	Verbena	

#### 2.4 EENJARIGE BREËBLAARONKRUIDE:

Die volgende breëblaaronkruid word beheer teen die dossise en groeistadia soos hieronder aangedui:

Tabel 4.4.

PIRANHA 360 SL		
0.75 tot 3.00 ℓ/ha	3.00 ℓ/ha	3.00 ℓ/ha
1 tot 12 blaar	12 blom tot voorblom	Blom
<i>Erodium moschatum</i>	Turknael	
<i>Malva parviflora+</i>	Kiesieblaar	

#### LET WEL:

+ - Nie aanbeveel vir beheer van *Malva parviflora* (Kiesieblaar) teen blomstadium nie.

+ - Vir beheer van *Malva parviflora* (Kiesieblaar) en *Oenothera stricta* (Nagblom) kleiner as die 12-blaarstadium, dien **PIRANHA 360 SL** toe teen 3 liter per hektaar in kombinasie met die aanbevole dosis Simazine SC vir die grondtipe.

2.5 EENJARIGE BREËBLAARONKRUIDE: Die volgende breëblaaronkruid word beheer teen die dossise en groeistadia soos hieronder aangedui:

Tabel 4.5.

PIRANHA 360 SL		
7.50 tot 9.00 ℓ/ha	7.50 tot 9.00 ℓ/ha	7.50 tot 9.00 ℓ/ha
1 tot 12 blaar	12 blaar tot voorblom	Blom
<i>Rumex angiocarpus</i>	Steenboksuring	

2.6 EENJARIGE GRASSE: LET WEL: Selfs teen die hoer dosisse sal die beheer van groot, gevestigde polle Raaigrasspesies\* en opslagmielies\*, wisselvallig wees, wat 'n opvolgtoediening mag benodig. Pas die hoeveelhede vir opslagmielies aan volgens onkruidgrootte en digtheid. Die volgende grasse word beheer teen die dossise en groeistadia soos hieronder aangedui:

Tabel 4.6.

PIRANHA 360 SL		
0.5 tot 0.75 ℓ/ha	0.75 tot 1.00 ℓ/ha	1.25 tot 1.5 ℓ/ha
1 tot 12 blaar	12 blaar tot voorblom	Blom
<i>Avena spp.**</i>	Wildehawer	
<i>Avena fatua**</i>	Gewone wildehawer	
<i>Briza maxima</i>	Bewertjiegras	
<i>Bromus diandrus</i>	Predikantsluis	
<i>Eleusine indica</i>	Jongosgras	
<i>Ehrharta longiflora</i>	Hawersaadgras	
<i>Hordeum murinum</i>	Wildegars	
<i>Lolium multiflorum*</i>	Italiaanse raaigras	
<i>Lolium temulentum*</i>	Drabok	
<i>Panicum schinzii</i>	Soetbuffelsgras	
<i>Poa annua</i>	Wintergras	
<i>Rhynchelytrum repens</i>	Natalse rooipluim	
<i>Secale cereal</i>	Rog	
<i>Sorghum bicolor</i>	Wilde graansorghum	
<i>Tragus racemosus</i>	Groot wortelsaadgras	

**2.7 GRASSE:** Die volgende grasse word beheer teen die dossise en groeistadia soos hieronder aangedui:  
Tabel 4.7.

PIRANHA 360 SL		
0.75 tot 1.00 ℓ/ha	1.00 tot 1.50 ℓ/ha	1.50 tot 2.00 ℓ/ha
1 tot 12 blaar	12l blaar tot voorblom	Blom
<i>Chloris virgata</i>	Witpluimchloris	
<i>Paspalum urvillei</i> (seedlings)	langbeen paspalum	
<i>Phalaris canariensis</i>	Kanariegras	
<i>Phalaris minor</i> **	Kleinsaad kanariegras	
<i>Setaria pallide-fusca</i>	Rooiborselgras	
<i>Setaria verticillata</i>	Klitsborselgras	
<i>Triticum aestivum</i>	Opslag koring	
<i>Zea mays</i> #	Opslag mielies	

# - PIRANHA 360 SL beheer nie opslag van Glifosaat weerstandbiedende mielies nie.

**2.8 GRASSE:** Die volgende grasse word beheer teen die dossise en groeistadia soos hieronder aangedui:  
Tabel 4.8

PIRANHA 360 SL		
1.25 tot 1.50 ℓ/ha	1.50 tot 2.00 ℓ/ha	2.50 tot 4.00 ℓ/ha
1 tot 12 blaar	12 blaar tot voorblom	Blom
<i>Bothriochloa insculpta</i>	-----	
<i>Brachiaria eruciformis</i>	Litjiesinjalgras	
<i>Dactyloctenium aegyptium</i>	Hoenderspoor	
<i>Digitaria sanguinalis</i>	Kuisvingergras	
<i>Echinochloa colona</i>	Moerasgras	
<i>Echinochloa crus-galli</i>	Hanepootmanna	
<i>Eragrostis capensis</i>	-----	
<i>Eragrostis ciliaris</i>	-----	
<i>Eragrostis virescens</i>	Chileense Eragrostis	
<i>Heteropogon contortus</i>	Gewone pylgras	
<i>Hyparrhenia gazensis</i>	-----	
<i>Panicum maximum</i>	Gewone buffelsgras	
<i>Paspalum urvillei</i>	Langbeen paspalum	
<i>Pseudobrachiaria deflexa</i>	Bastersinjalgras	
<i>Setaria sphacelata</i>	-----	
<i>Themeda triandra</i>	Rooigras	
<i>Tragus berteronianus</i>	Klein wortelsaadgras	
<i>Urochloa mosambicensis</i>	Bosveld beesgras	
<i>Urochloa panicoides</i>	Beesgras	
<i>Trystachia leucotrix</i>	-----	

**2.9 MOEILIK BEHEERBARE ONKRUIDE:** Die volgende toedieningshoeveelhede word aanbeveel vir bespuiting gedurende middel winter in die winter- reënvalareas, wanneer toestande minder gunstig is vir opname en translokasie van onkruidodders:

Tabel 5.

PIRANHA 360 SL		
3.0 ℓ/ha	3.5 ℓ/ha	3.75 ℓ/ha
1 tot 12 blaar	12ℓ blaar tot voorblom	Blom
<i>Arctotheca calendula</i>	Witgousblom	
<i>Chenopodium album</i>	Withondebossie	
<i>Conyza floribunda</i>	Turknael	
<i>Erodium moschatum</i>	Harige wildeslaai	
<i>Hypochoeris radicata</i>	Raaigras	
<i>Lolium spp.*</i>	Kliitsklawe	
<i>Medicago polymorpha</i>	Ramenas	
<i>Raphanus raphanistrum</i>	Sydissel	
<i>Sonchus oleraceus</i>	Klappiesbrak	

### 3. SPESIFIEKE GEWASAANBEVELINGS

PIESANGS		
Beheer matreels vir die beheer van piesang bossiekte		
STAP 1: Gebruik eers PIRANHA 360 SL (glifasaate glycine) soos hieronder aanbeveel		
STAP 2: Dien agterna Apache Gold 350 SC toe		
<b>PIESANGS</b> <b>Stap 1</b> <b>Alreeds besmette plante met</b> <i>(Nanoviridae: Babuvirus)</i>	<b>Piranha 510 SL</b> Vir die vernietiging van plante alreeds besmet met Piesandbossiekte	<b>Om alreeds besmette plante te vernietig:</b> Maak oplossing van PIRANHA 360 SL teen van 200 ml product per 1 ℓ water deur <b>inspuiting</b> . <b>Dien</b> 5 ml tot 15 ml van die oplossing deur <b>inspuiting</b> in die pseudostam toe. Gebruik die hoer dosis vir groter plante
<b>PIESANGS</b> <b>Stap 2</b> Piesang plantluis <i>(Pentalonia nigronervosa)</i> Vir <b>Voorkoming van</b> Piesangbossiekte <i>(Nanoviridae: Babuvirus)</i>	<b>Apache Gold 350 SC</b> 100 ml per 100 ℓ water	Dien 35 ml tot 60 ml van die oplossing per pseudostam <b>by middle van stam isuiting</b> . Gebruik hoer dosis op groter plante. Waar plante <b>reeds besmet is</b> moet die behandeling met glifosaat soos hiebo aangedui, toegedien word alvorens <b>Apache Gold 350 SC</b> toegedien word.

Tabel 6.

GEWAS	OPMERKINGS
3.1 Aalwyne, Amandels, Appels, Appelkose, Avokodo's, Grenadilla, Guava, Hops, Kersies, Kiwivrug, Koffie, Kwepers, Litchi's, Makadamia's, Mango's, Nektariens, Olywe, Papaja, Perskes, Pere, Pekanneute, Piesangs, Pruime, Pruimedante, Pynappels, Turksyve, Sitrus, Swartbessie, Tee	1. Verwys na onkruidtabelle vir dosisse van PIRANHA 360 SL. 2. Beskerm jong bome met groen bas teen direkte bespuiting.

3.2 Wingerde en vrugtebome	<ul style="list-style-type: none"> <li>• Dien toe voor knopbars op wingerde ouer as 2 jaar. Jonger wingerde met groen bas moet afgeskerm word.</li> <li>• Rig bespuiting na die onkruide.</li> <li>• Moet nie toedien op gesnoeide wingerde of vrugtebome voordat die wonde behoorlik geseël het nie.</li> </ul> <p><b>Gewas deklaagvernietiging in wingerde:</b></p> <ul style="list-style-type: none"> <li>• Vir die beheer van <i>Avena spesies</i>** (Wildebaardhawer, Gewone hawer), <i>Lolium spesies</i>** (Italiaanse raagras, Drabok) en <i>Secale cereale</i> (Rog), dien <b>PIRANHA 360 SL</b> toe teen 1,0 liter per hektaar.</li> <li>• Dien toe teen 10 dae of meer na snoei en voor knopbars.</li> </ul>
3.3 Sisal	Toediening kan gedoen word op kwekery en volwasse plante.
3.4 Bewerkbare landerye	<ul style="list-style-type: none"> <li>• Gebruik <b>PIRANHA 360 SL</b> na-oes van die vorige gewas.</li> <li>• Moet nie teikenplante versteur binne 6 ure na toediening (voor aanplanting van gewasse) en vooropkoms van die nuwe gewas nie.</li> </ul>

#### 4. GESPECIALISEERDE PRAKTYKE

##### 4.1 BOSBOU TOEDIENINGS

Tabel 7.

SITUASIE	ONKRUID SPESIES	DOSAGE		OPMERKINGS
		ℓ/ha	% OPLOSSING PIRANHA 360 SL (ℓ in 100ℓ water)	
Instandhouding onkruidbeheer in gevestigde plantasies	<i>Acacia mearnsii</i> (Swartwattel)	3.4 tot 4.0	1.5 tot 2.0	Dien toe op jong bome van 0.1 to 2 m hoog.
	<i>Solanum mauritianum</i> (Luisboom)	2.0	1.5	<b>Groot bome:</b> Sny tot 50 cm, laat nuwe groei toe tot minstens 50 cm voor toediening. <b>Klein boompies:</b> Dien direk op die blare toe.
	<i>Rubus</i> spp. (Braam)	6.0	3.0	Kap struikgewas in winter. Dien toe wanneer nuwe groei meer as 0.5 m hoog is Indien hergroei plaasvind, herspuit met 'n 1.5 % oplossing.
<p><b>Vuurbane</b> Vuurbaan voorbereiding as voorbrandstrok of die totale area.</p> <p><b>Band- voorbereiding vir boom saailinge</b></p> <p>Toestande gunstig vir sodanige behandelings sluit in: a) Natuurlike veld b) Skoon, gekapte plantasies</p>	<p>In beide situasies sal een- en meerjarige onkruid populasie gevind word</p> <p>Verwys na lys van onkruidbeheer onder <b>Industriële onkruidbeheer</b></p>	4.0	2.0	<p>Dien minstens 200 liter spuitmengsel per hektaar toe wanneer 2 % oplossing gebruik word.</p> <p>'n Opvolgbehandeling mag nodig wees om sommige geharde meerjarige onkruid te beheer deur 'n 2 % oplossing as 'n kolbespuiting te gebruik.</p>

<i>Eucalyptus grandis</i> (Salignabloekom)	Enkelstam	5 % oplossing	Dien 50 mℓ oplossing toe op die skoon kambiumarea direk na afkap.
	Multi-stam stompe	7 % oplossing	Dien 100 mℓ oplossing toe op skoon, volledig blootgestelde kambiumlaag direk na afkap. Ingeval van hergroei spuit met 'n 2 % oplossing.

#### 4.2 SUIKERRIET

Tabel 8.

SITUASIE	DOSIS	OPMERKINGS
Laaste "ratoon" uitwissing (Minimum bewerking)	8.0 tot 10.0 ℓ / ha	<b>PIRANHA 360 SL</b> sal die laaste "ratoon" suikerriet effektief beheer nadat dit ge-oes is en toegelaat word om te hergroei tot 'n hoogte van + 45 cm, nadat bewerking voltooi is. Spuit aktiefgroeiende suikerriet wanneer uitlopers opgekom het, gebruik 100 tot 400 liter per hektaar. Hergroei kan met die hand verwyder word. <b>Kontak jou verspreider vir volledige inligting op alle aspekte van minimum bewerking voor bespuiting.</b>
Koluitwissing van siek plante	10 % oplossing	Vir koluitwissing van siek plante (bv. Brand) en Atipiese suikerriet stamme. Dien toe as gerigte bespuiting op die teikenplante se blare.
Voorplant	<b>Eenjarige onkruid:</b> 1.0 tot 3.0 ℓ / ha <b>Meerjarige onkruid:</b> Verwys Tabel 1.	Dien toe op aktief groeiende onkruid.
Kolbespuiting van lande	2 % oplossing	Direkte kolbespuiting op aktief groeiende onkruid rondom landerye, telefoonpale, ens.

#### 4.3 GROEI-ONDERDRUKKING (CHEMIESE SNOEI):

- Die groei en blom tempo van pol en rankende meerjarige grasse kan onderdruk word deur sub-letale dosisse van **PIRANHA 360 SL**, 5 tot 10 dae na sny op die gras toe te dien, voordat die saadstruksture begin groei. Afhangend van die spesie en dosis kan groei voorkom of verminder word vir 'n tydperk van tot 70 dae (verwys na dosisse hieronder).
- Hoer dosisse het langer groei-onderdrukking tot gevolg en ooreenkomstige verhoging in die mate van chlorose (vergeling).
- Oortoediening van **PIRANHA 360 SL** kan ernstige skade of afsterwing van die plante veroorsaak.
- Moet nie op grasse toedien wat onder stresstoestande, bv. droogte, oorvloedig, ens. verkeer nie.
- Ongunstige weerstoestande kan aanleiding gee tot wisselvallige resultate en die tydperk van groei- onderdrukking sal deur die heersende weerstoestande bepaal word.
- Verwyder oortollige plantmateriaal (wat na sny agtergebly het) voor toediening, wat mag verhoed dat die sporeidruppels met die groen grasblare in aanraking kom.
- Grasse is die mees sensitiefste vir **PIRANHA 360 SL** in die herfs en dus word vermag dat chlorose meer ernstig is gedurende hierdie tydperk. Waar minimum vlakke van chlorose vereis word, moet dosisse tydens die somer of herfs nie 0.6 liter **PIRANHA 360 SL** per hektaar oorskry nie.
- Spuitvolumes moet wissel tussen 50 tot 150 liter per hektaar en verseker egalige druppelverspreiding op die groen blare. Voorkom bespuiting tot die punt van afloop.

**Toedieningshoeveelhede van PIRANHA 360 SL en verwagte tydperke van groei-onderdrukking:**

**Tabel 9.1. MEERJARIGE POLGRAS**

ONKRUIDE	PIRANHA 360 SL (ℓ/ha)	TYDPERK (DAE)
<i>Digitaria smutsii</i> (Smutsvinger) EN <i>Hyperrhenia hirta</i> (Tamboekie dekgras)	0.4 0.6 0.8 1.0	30 50 60 70
<i>Festuca</i> spp. (Fescues) and <i>Lolium</i> spp.* (Ryegrass)	0.6 tot 0.8	30
<i>Sporobolus africanus</i> (Rush grass)	0.6 0.8 1.0	20 40 50

**Tabel 9.2. RANK EN MEERJARIGE GRASSE**

ONKRUIDE	PIRANHA 360 SL (ℓ/ha)	TYDPERK (DAE)
<i>Cynodon dactylon</i> (Gewone kweekgras)	0.4 0.6 0.8 1.0	10 20 30 40
<i>Pennisetum clandestinum</i> (Kikuyu)	0.2 0.4 0.6	30 40 60

**OPVOLGTOEDIENINGS:**

Die tydperk van groei-onderdrukking kan deur opvolgtoedienings verleng word, wat moet toegedien word voordat oormatige blaargroei en saadkopvormig plaasvind. Die opvolgdosis van **PIRANHA 360 SL** is afhanklik van die verlangde tydsduur van groei-onderdrukking. Moet nie 0.9 liter per hektaar oorskry nie.

**Tabel 9.3.**

EERSTE TOEDIENING (ℓ/ha)	OPVOLG TOEDIENING (ℓ/ha)
0.4 to 1.0	0.4 tot 0.6

**BREËBLAARPLANTE EN GRASSAAILINGE:** Die groei van breekblaarplante sal ook deur hierdie dosisse van **PIRANHA 360 SL** onderdruk word. Saailinge en jong plante mag deur bogenoemde behandelings beheer word.

Tabel 9.4.

SITUASIE	PIRANHA 360 SL (l/ha)	OPMERKINGS
Ongewenste onkruid	3.0 to 6.0	<p><b>Lugtoediening:</b></p> <ul style="list-style-type: none"> <li>• Dien toe op aktief groeiende plante in 30 tot 50 liter water per hektaar.</li> <li>• Toedieningshoeveelheid hang af van plantgrootte en digtheid.</li> <li>• Plante 500 tot 900 mm; dien 3 liter per hektaar toe.</li> <li>• Plante 1.0 tot 1.9 m; dien 4 liter per hektaar toe</li> <li>• Plante &gt; 2.0 m; dien 5 liter per hektaar toe.</li> <li>• Op baie digte plantegroei, dien 6 liter per hektaar toe.</li> <li>• Moet nie meer as 3 liter per hektaar toedien in ekologies sensitiewe areas nie.</li> </ul> <p><b>Grondtoediening:</b></p> <ul style="list-style-type: none"> <li>• Dien toe soos hierbo in 100 tot 600 liter water per hektaar.</li> </ul>

## 5. INDUSTRIËLE ONKRUIDBEHEER: Die hoeveelhede hieronder verwys slegs na industriële onkruidbeheer.

Tabel 10.

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		l/ha	% Oplossing	
<b>Meerjarige grasse:</b> <i>Cynodon dactylon</i>	Gewone kweek gras	6.0	3.0	Dien toe op vinnig groeiende plante in die somer of herfs wanneer voedingstowwe aktief na die wortels, risome en stolons getranslokeer word. Volg op met 4 liter per hektaar (2.5 % oplossing) indien enige hergroei plaasvind.
<i>Cynodon nlemfuensis</i>	Stergras	6.0	3.0	
<i>Pennisetum clandestinum</i>	Kikuyu	4.0	2.0	Dien toe op aktiewe groei in die somer. Spuit hergroei later met 3 liter per hektaar of 'n 1.5 % oplossing.
<i>Paspalum paspalodes</i>	Kweek paspalum	6.0	3.0	Dien toe op aktief groeiende plante. Volg op met die helfte van die aanbevole dosis indien hergroei plaasvind.
<i>Paspalum dilatatum</i>	Gewone paspalum	6.0	3.0	
<b>Uintjies:</b> <i>Cyperus esculentus</i>	Geeluintjie	6.0	3.0	Dien toe tydens die blomstadium. Spuit hergroei met 3 liter per hektaar of 'n 1.5 % oplossing.
<i>Cyperus rotundus</i>	Rooi-uintjie	6.0	3.0	

Tabel 11.

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		ℓ/ha	% OPLOSSING	
<b>Eenjarige breëblaar onkruid:</b>				
<i>Amaranthus spinosus</i>	Doringmisbredie	4 tot 6	2 to 3	<p>Gebruik 4 liter per hektaar (2 % oplossing) wanneer onkruid in die vroeë groeistadia is.</p> <p>Gebruik 5 liter per hektaar (2.5 % oplossing) wanneer onkruid in die vroeë blomstadium is.</p> <p>Gebruik 6 liter per hektaar (3 % oplossing) wanneer onkruid in die saadstadium is, maar steeds aktief groeiend.</p> <p>Moet nie op volwasse onkruid wat in 'n stadium van uitdroging is, toedien nie.</p>
<i>Argemone ochroleuca</i>	Meksikaanse papawer			
<i>Bidens bipinnata</i>	Spaanse knapsekerel			
<i>Bidens pilosa</i>	Knapsekerel			
<i>Chenopodium album</i>	Withondebossie			
<i>Datura ferox</i>	Groot stinkblaar			
<i>Datura stramonium</i>	Stinkblaar			
<i>Oxalis pes-caprae</i>	Geelsuring			
<i>Polygonum aviculare</i>	Voelduisendknoop			
<i>Richardia brasiliensis</i>	Meksikaanse richardia			
<i>Senecio ilicifolius</i>	Gifbossie			
<i>Schkuhria pinnata</i>	Klein kakiebos			
<i>Tagetes minuta</i>	Kakiebos			

Tabel 12.

WETENSKAPLIKE NAAM	GEWONE NAAM	DOSIS		OPMERKINGS
		ℓ/ha	% SOLUTION	
<b>Eenjarige grasse:</b>				
<i>Aristida junceiformis</i>	Koperdraadgras	4 tot 6	2 to 3	<p>Gebruik 4 liter per hektaar (2 % oplossing) wanneer onkruid in die vroeë groeistadia is.</p> <p>Gebruik 5 liter per hektaar (2.5 % oplossing) wanneer onkruid in die vroeë blomstadium is.</p> <p>Gebruik 6 liter per hektaar (3 % oplossing) wanneer onkruid in die saadstadium is, maar steeds aktief groei.</p> <p>Moet nie op volwasse onkruid wat in stadium van uitdroging is, toedien nie.</p>
<i>Cymbopogon plurinodis</i>	Bosveld terpenyngras			
<i>Digitaria sanguinalis</i>	Kruisvingergras			
<i>Diheteropogon filifolius</i>	Smalblaar blougras			
<i>Eleusine indica</i>	Jongosgras			
<i>Eragrostis curvula</i>	Oulandsgras			
<i>Eulalia villosa</i>	Geel fluweelgras			
<i>Loudetia simplex</i>	Stingelgras			
<i>Monocymbium ceresiforme</i>	Wildehawergras			
<i>Panicum maximum</i>	Gewone buffelsgras			
<i>Panicum natalense</i>	Natalse buffelsgras			
<i>Rhynchelytrum repens</i>	Natalse rooipluimgras			
<i>Sporobolus africanus</i>	Taaipol			
<i>Stiburus alopecuroides</i>	Koperdraadgras			
<i>Tragus racemosus</i>	Groot wortelsaadgras			
<i>Urochloa panicoides</i>	Beesgras			

## 6. WEIDINGSOPKNAPPING

Tabel 13.

SITUASIE	OPMERKINGS
<b>Konvensioneel Meerjarige rankgras infestasië</b>	<b>Meganiese en chemiese opknapping:</b>
Ligte druk	Berei saadbed voor. Laat meerjarige rankgras en eenjarige onkruid toe om op te kom. Dien <b>PIRANHA 360 SL</b> toe teen aanbevole dosisse vir die onkruid (Tabel 2). Saai nuwe weiding 3 tot 4 dae na bespuiting.
Swaar druk	Bewerk onkruid en laat hergroeï toe. Dien die aanbevole hoeveelheid <b>PIRANHA 360 SL</b> toe. Laat een week na bespuiting toe vir 'n tweede bewerking, saadbed voorbereiding en aanplanting/saai.
Voor-saai onkruidbeheer	Nuut ontkiemde onkruid kan beheer word met 1.0 tot 3.0 liter per hektaar. Cyperus spp. (Uintjies) sal 6 liter per hektaar benodig. Saai nuwe weiding 3 tot 4 dae na toediening.
<b>Weiding vervanging en verbetering van veld</b>	Verwyder plantreste deur te sny of beweï 3 tot 4 weke voor toediening van <b>PIRANHA 360 SL</b> op hergroeï. Plant nuwe weiding 3 tot 4 dae na toediening.
<b>Onderhoud van weiding</b>	Beheer een- en meerjarige onkruid in weidings deur kolbespuiting met 'n 2% oplossing, of deur stryktipe toerusting te gebruik waar onkruid bo die weiding uitstaan. (Tabel 2).

**NOTAS:**

- Verwys na die aanbevole dosis volgens die Tabele hierbo, vir die beheer van een- en meerjarige onkruid, tydens opknapping van gevestigde weidings.
- Gebruik konvensionele of direkte plantmetodes.
- Waak dat oormatige onkruidgroei nie bedekking op die teikenarea voorkom nie.
- Moet nie op 'n mat van diggroeiende Kikuyu of kweekgras, met 'n verkleinde groen blaaroppervlak, toedien nie. Brand teen einde van die winter om die droe massa te verminder. Laat hergroei toe tydens die somer en spuit hergroei laat somer of lente. Vestig die nuwe weiding in die opvolgende herfs.

**7. STRYKTIPE TOEDIENING****Tabel 14**

<b>TIPE TOEDIENER</b>	<b>Dosis rate ℓ/ha</b>	<b>OPMERKINGS</b>
Handgedraagte roller toediensers	<b>Eenjariges:</b> 5 % <b>Meerjariges:</b> 10 %	100 tot 150 liter per hektaar oplossing aanbeveel waar konvensionele bespuiting onprakties is, bv. laag opgeleide of bosstok wingerde, ens.
Handgedraagte of trekker gemonteerde toutipe toediensers	Lewering van tot 3 ℓ/ha OF 'n 50 % oplossing	Dien tot 3 liter per hektaar oplossing toe in boorde en waar onkruid/gewas hoogte differensiasie voorkom bv. beheer van 'n opslaggewas of laat kiemende onkruid in bone en grondbone.
<b>NOTAS:</b>		
<ul style="list-style-type: none"> <li>• Gebruik 'n goedgekeurde stryktipe toedieningsapparaat. Hierdie toediensers maak gebruik van 'n absorberende materiaal om die <b>PIRANHA 360 SL</b> oplossing oor te dra op die plante waarmee dit in aanraking kom.</li> <li>• Verseker dat die strykkoppervlak skoon gehou word. Die strykkoppervlak moet nie met die gewas in aanraking kom nie.</li> </ul>		



# PIRANHA 360 SL

Reg. No. / Nr L8877 Act No. 36 of 1947/ Wet Nr 36 van 1947

HERBICIDE



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

HRAC: HERBICIDE GROUP CODE

9

HRAC: ONKRUIDDODER GROEPKODE

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. May also be used in program for Banana bunchy top control.

'n Oplosbare konsentraat nie-selektiewe, blaartoegedienende sistemiese onkruidodder vir die beheer van verskeie eenjarige en meerjarige grasse, breëblaaronkruid en sekere houtagtige onkruid soos aangedui. Mag ook in program vir piesang bossiekte beheer gebruik word.

## ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL:

glyphosate (glycine).....360 g a.i./ℓ.....glifosaat (glisien)  
as glyphosate isopropylamine salt..... 480 g/ℓ.....as glifosaat isopropielamiensout



**DANGER**

### Hazard Statements:

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
Toxic to aquatic life with long lasting effects.

### Precautionary Statements:

IF SWALLOWED: Call a doctor if you feel unwell.  
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.  
Immediately call a doctor.  
If skin irritation occurs: Get medical advice/ attention.

Batch No:

D.O.M:

D.O.E:

Net Mass:

See reverse of packaging for details.

FOR FULL PARTICULARS SEE ATTACHED PAMPHLET.

VIR VOLLEDIGE BESONDERHEDE KYK AANGEHEGTE ETIKET.

UN No. / VR Nr: 3082



REGISTRATION HOLDER/ REGISTRASIEHOUER

Safeguard Crop protection (Pty) Ltd.

Reg. Nr.: Reg. No.1971/012583/07

61 Marshall Drive, Old Mill Industrial Park,

Mount Edgecombe, South Africa, 4300

Tel: 031 003 3486

Poison Information Helpline (24 hrs): 0861 555 777



BARCODE

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