

Read the label before opening the container.

For full particulars, see enclosed leaflet.

KEEP OUT OF REACH OF CHILDREN AND ANIMALS

DOUBLE UP 540 SL

South Africa Reg. No: L11295 Act No. 36 of 1947

HRAC HERBICIDE GROUP CODE: G

DoubleUp 540 SL is a non-selective post-emergence herbicide solution for the control of annual weeds and perennial as indicated on the label.

ACTIVE INGREDIENT:

Glyphosate (glycine).....540g/ℓ
Glyphosate potassium salt.....665g/ℓ

Product Information: 072 678 8226
In case of poisoning: 082 446 8946

HAZARD STATEMENTS

- Harmful if swallowed.
- May be harmful in contact with skin.
- Harmful if inhaled.
- Causes severe skin burns and eye damage.
- Causes serious eye damage.
- Harmful to aquatic life.
- Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

- Wash body thoroughly after handling.
- Avoid release to the environment.



WARNING

enviro
bio-chem

Registration holder: Mechau Holdings (Pty) Ltd

Co. Reg. No: 2021/762952/07

4924 Lakeside Drive, Bettys Bay Western Cape 7141

Tel: +27 87 231 7261 | Fax: +27 86 541 7948

Web: www.envirobiochem.co.za

Expiry Date:

Batch No:

Date of Manufacture:

UN No. 3082

WARNINGS:

Withholdings periods:

The following withholding period should be adhered to between the last application and harvesting:	
Maize (Grazing)	28 days
Maize (Green mealies)	42 days
Soy bean	14 days

- Handle with care.
- Harmful if swallowed.
- May be harmful in contact with skin.
- Harmful if inhaled.
- Causes severe skin burns and eye damage.
- Causes serious eye damage.
- Harmful to aquatic life.
- Toxic to aquatic life with long lasting effects.
- Do not mix, store or apply **DOUBLEUP 540 SL** solutions in galvanised 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 under lock and key in a cool, dry place, away from food, feeds, seed and fertilizers.
- Re-entry: Do not enter treated area until spray deposit has dried unless wearing protective clothing.
- In case of poisoning, take the patient immediately to a doctor and make this label available to him/her.
- **DOUBLEUP 540 SL** is a highly active herbicide, which 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 area under treatment: Cloudy weather with relative humidity above 80 % and low air movement of less than 5 km per hour. When such conditions prevail, **DOUBLEUP 540 SL** must not be applied where sensitive crop seedlings, deciduous fruit trees and grape vines in budding or early development stages are present within 5 km from the area under treatment.

Although this remedy has been extensively tested under a wide variety of conditions, the registration holder does not warrant that it will be effective under all conditions because the activity 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 instruction 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:

- Do not breathe dust/fume/gas/mist/ vapours/spray.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Wash body thoroughly after handling.
- Wash hands thoroughly after handling. Do not touch eyes.
- Use only outdoors or in a well-ventilated area.
- Avoid release to the environment.
- Wear protective gloves.

- In case of inadequate ventilation, wear respiratory protection.
- **SKIN CONTACT:** Wash with plenty water. Obtain medical assistance. Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
- Wash contaminated clothing before reuse.
- **INGESTION:** Rinse mouth. Do NOT induce vomiting. Obtain medical assistance. Rinse mouth.
- **INHALATION:** Remove person to fresh air and keep comfortable for breathing.
- **EYE CONTACT:** Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Store in a well-ventilated place. Keep container tightly closed.
- Collect spillage.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Prevent drift onto other crops, grazing, rivers, dams or areas not under treatment or to nearby water sources.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- Containers and packages must be completely emptied before being disposed of. Shake out thoroughly into the applicator and destroy the empty container thereafter in the described manner.
- **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
- Destroy the empty container by perforation and dispose of it in a safe manner.
- Never re-use the empty container for any other purpose.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Do not add foliar fertilisers to **DOUBLEUP 540 SL**;

RELEVANT SUBSTANCES

Chemical Name	Concentration (G/L)
Glyphosate 540	
KOH	>100
APG	>100

FIRST AID TREATMENT:

- INGESTION:** Dilute the poison immediately with large amount of water or milk and remove by gastric lavage unless the victim is already vomiting.
- EYE CONTACT:** Wash eyes immediately with large amount of water, occasionally lifting upper and lower lids, until no evidence of chemical remains
- INHALATION:** If inhaled, remove to fresh air and keep at rest. Obtain medical advice if at all worried.
- SKIN CONTACT:** Wash contaminated skin and clothes with plenty of water and soap
- ANTIDOTE:** Treat symptomatically.

RESISTANCE WARNING:

DOUBLEUP 540 SL is a group code **G9** Herbicide. Any weed population may contain individuals naturally resistant to **DOUBLEUP 540 SL** and other group code **G9** Herbicides. The resistant individuals can eventually dominate the weed population if these Herbicides are used repeatedly. These resistant weed may not be controlled by **DOUBLEUP 540 SL** or any other group code **G9** 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 programs.
- For specific information on resistance management contact the registration holder of this product.

WEED RESISTANCE MANAGEMENT

- 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 benghalensis* (Benghal wandering Jew), *Ipomoea* species (natural resistance) occur, due to resistance against Glyphosate.
- 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. **DOUBLEUP 540 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 **DOUBLEUP 540 SL** to control resistant weeds.

DIRECTIONS FOR USE: USE ONLY AS DIRECTED

General information and Use Restrictions:

- Use of **DOUBLEUP 540 SL** according to label instructions should result in normal development and growth of Glyphosate tolerant soybean or Glyphosate tolerant maize varieties. Various environmental conditions, agronomic practices and other diverse factors make it impossible to eliminate all risks associated with this product, even when applications are done according to label specifications. In certain cases, these factors can result in unforeseen results including yield loss.
- **DOUBLEUP 540 SL** must only be used for post-emergence, over the top or directed application on to genetically improved soybean maize varieties that have been developed as containing the Pioneer Glyphosate tolerant gene. Severe crop injury or total killing of the maize or soybean crop will result if any variety or hybrid, not properly indicated as containing the Glyphosate tolerant gene, is sprayed with this product.
- Herbicidal action of **DOUBLEUP 540 SL** may become visible from five (5) days after application depending on weed species, growth stage and environmental conditions.
- Apply **DOUBLEUP 540 SL** post-emergence on 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.
- Application with low volume sprayers (e.g. self-drive "high boy" sprayers) at high speeds (> 10 km per hour) may produce dust clouds that will affect the activity of the active ingredient adversely due to adsorption onto dust particles on the weeds' leaf surfaces.
- **DOUBLEUP 540 SL** is rain fast within one (1) hour after application. Rain or irrigation within 1 hour after application can have an adverse effect on efficacy.
- Allow 6 hours after application before planting operation.
- In mixed weed situations (annuals in amongst problem perennials), control annuals by mowing or chemical control. Wait for vigorous re-growth of perennials and then spray or spot spray re-growth.
- When **DOUBLEUP 540 SL** is used in conjunction with any other agricultural remedy, adhere to all WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE mentioned on that label.
- There are no crop rotation restrictions following application of this product.

Mixing instructions:

- Always use clean water. Avoid the use of brackish or muddy water, or water with a high colloid content derived from soils high in organic matter.
- Analysis of the water source is recommended to confirm the levels of sodium, calcium and magnesium salts, as well as carbonate and bicarbonate fractions, as too high levels of these compounds may cause antagonism with the Glyphosate active ingredient.
- For hard and brackish water correction, add Velocity-Glifo, Velocity-Dry, ATP Amsul-50
- Dry ammonium sulphate to the spray water before adding **DOUBLEUP 540 SL**.
- Add the Ammonium sulphate to the water first; then add the **DOUBLEUP 540 SL**, followed by the recommended tank mixture product.
- Ensure agitation during mixing and spraying.

Compatibility:

- **DOUBLEUP 540 SL** can be tank mixed with 2,4-D Amine 480 SL, MCPA 400 SL, Terbutylazine 900 WDG. Ensure compatibility by preparing a small scale test mixture before a large scale field application. Observe all label recommendations.
- **DOUBLEUP 540 SL** can also be tank mixed with ammonium sulphate adjuvants, e.g. Velocity-Glifo, Velocity-Dry, ATP Amsul-50 or Amsul-Dry.
- Surfactants / Additives:
- For optimum results, a minimum of 1.0 % **DOUBLEUP 540 SL** concentration in the total spray volume is recommended. Where the application is based on a percentage solution rather than a dosage per hectare rate, apply as a full cover application (but not to the point of run-off).
- For improved control of Wandering Jew, Field bind weed, Morning glory and Common purslane, **DOUBLEUP 540 SL** can be mixed with 2,4-D Amine 480 SL or MCPA 400 SL at a maximum of 500 ml per hectare. Do not add a buffering agent when preparing tank mixtures with any of these 2 products.
- Always add ammonium sulphate (e.g. Velocity Glifo / Velocity Dry) to the spray mixture.

Application information:

- Correctly calibrate all sprayers under field conditions and ensure that the spraying equipment is in good working order.
- Apply **DOUBLEUP 540 SL** at a maximum volume rate of 200 litres spray mixture per hectare. Where the volume rate is less than 120 litres per, the application must be done with purpose designed low volume spray equipment (e.g. self-drive “high boy” sprayers).
- The application speed of low volume sprayers must not exceed 25 km per hour on an even soil bed. Where the soil bed is more uneven (e.g. due to clods) a maximum application speed of 15 km per hour must be used.
- Ensure that the spray equipment is clean and free of rust, dust and sediment from other chemicals.
- In situations where drift may be hazardous, use low pressures of 100 to 200 kPa or low drift nozzles or add a drift retardant adjuvant 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.
- Thoroughly clean the entire sprayer after application.

CROP RECOMMENDATIONS:

1. GLYPHOSATE TOLERANT CROPS

1.1 Glyphosate tolerant maize:

• Broadcast (over the top) application:

Broadcast application of **DOUBLEUP 540 SL** can only be done after the ground cracking stage up to the V8 stage (V8 stage = when the first plants in the field have 8 leaves with closed collars around the main stem; however, the actual number of leaves may be more). Do not apply broadcast applications if the spray equipment will cause mechanical crop damage. Broadcast application after the V8 stage may cause yield loss or delayed maturity. Flat fan or twin jet nozzles, suitable for low water volume deliveries, are recommended. If follow-up applications are required to control specific weed species, e.g. *Cyperus esculentus*, the second application should not be made within 10 days of the first application. If the maize has grown beyond the V8 stage at this time, a directed follow-up application will be necessary (refer below).

• Directed application:

Directed **DOUBLEUP 540 SL** applications can be made after the V8 stage, if row spacing permits the movement of the sprayer without causing mechanical damage to the crop. Row spacing of 1.5 and 2.1 metres are recommended for conventional tractor mounted spray rigs.

For the control of certain broadleaf weeds mentioned above, **DOUBLEUP 540 SL** can be mixed with either 2,4-D Amine 480 SL or MCPA 400 SL at 0.5 litre per hectare. Refer to the 2,4-D Amine 480 SL or MCPA 400 SL labels for “USE RESTRICTIONS”.

1.2 Glyphosate tolerant soybeans (broadcast application):

DOUBLEUP 540 SL may be applied post-emergent to Glyphosate tolerant soybeans from the ground cracking stage through to flowering. Allow a minimum of 2 weeks between application and harvest of the crop. Do not exceed the following **DOUBLEUP 540 SL** application volumes per hectare:

Cumulative total per season for all applications:	6.7 litres per hectare
- Pre-plant, pre-emergent applications:	2.0 litres per hectare
- Total in-crop applications from cracking to flowering:	4.7 litres per hectare
- Maximum pre-harvest application rate:	1.3 litres per hectare

Refer recommendations under “APPLICATION DOSAGES’

1.3 Application Dosages:

Weed spectra in crops are variable according to region, soil type and climatic factors that change seasonally. Therefore, varied and uneven emergence of various weed species may occur at any specific site, where one or more species may dominate. The dosages recommended, aim to cover a broad spectrum of weeds if they are sprayed before upright growing weeds reach 10 cm in height (e.g. Khaki weed), or flat growing weeds reach the 6 to 8 leaf stage (e.g. Common purslane).

Table 1:

CROP & WEED TYPE		STAGE OF WEED GROWTH	DOSAGE RATE
Glyphosate tolerant Maize & Soybeans: General post emergence weed control			
Annual grasses and broad leaf weeds:		Apply before 100 mm height or 8-leaf stage.	1.3ℓ/ha
		Apply between 100 and 200 mm or up to the 12-leaf stage.	1.7ℓ/ha
Difficult to control species requiring a follow-up spray (variable control*):	Wandering Jew* <i>Commelina benghalensis</i>	Apply at the 3-leaf stage; follow up with 2.0 litres per hectare 10 to 20 days later.	2.0ℓ/ha
	Morning glory* <i>Ipomoea purpurea</i>	Apply at the 4- to 5- leaf stage; follow up with 2.0 litres per hectare 10 to 20 days later.	
	Common purslane* <i>Portulaca oleracea</i>	Apply before flowering	
	Devil's thorn <i>Tribulus terrestris</i>	Apply before first flowers appear.	
Difficult to control biennial and perennial weed species:	Yellow nutsedge <i>(Cyperus esculentus)</i>	Apply at the 3- to 4-leaf stage follow up with 2.0litres per hectare, 10 to 20 days later.	
	<i>Conyza spp.</i>	Apply before 8-leaf stage.	

Glyphosate tolerant Maize only:

Improved residual control of broadleaf weeds.

Above-mentioned General post-emergence weed control dosage rates PLUS 0.53 to 1.1 kg per hectare Rainbow Terbutylazine 900 WDG (L9318).

Consult the Rainbow Terbutylazine 900 WDG label for WARNINGS, PRECAUTIONS, USE RESTRICTIONS and DIRECTIONS FOR USE.

NOTE:

Carefully read “Broadcast” and “Directed application” above for application spray instructions in maize.

The following weed species will NOT be controlled at these recommended rates:

Cynodon dactylon - Common quick grass

Convolvulus arvensis - Field bind weed

Oenothera stricta - Evening primrose

Panicum maximum - Common buffalo grass

Paspalum spp. – Paspalum species

1.4 Pre- and post-emergence tank mixture combinations with DOUBLEUP 540 SL at planting in minimum / no-tillage practices in Maize:

- 2,4-D Amine 480 SL (L9332) can be added to above-mentioned mixtures for improved control of certain difficult to control broadleaf weed species.
- Refer to Table 1 above for **DOUBLEUP 540 SL** dosage rates. Use the higher dosage rate for more difficult weeds or higher weed pressure situations. Apply to young actively growing weeds.
- Follow the registration holder’s recommendations on these labels, except 2,4-D Amine 480 SL (L9332) and MCPA 400 SL (L0576), where a maximum of 0.5 litres per hectare should be applied.

1.5 Post-plant, post-emergence tank mixture combinations in GLYPHOSATE TOLERANT Maize:

- **DOUBLEUP 540 SL** may be tank mixed with 2,4-D Amine 480 SL (9332) or MCPA 400 SL (0576) for post-emergence weed control applications (before the V8-stage).
- Refer to Table 1 above for **DOUBLEUP 540 SL** dosage rates. Use the higher dosage rate for more difficult weeds or higher weed pressure situations. Apply to young actively growing weeds.
- Follow the registration holder’s recommendations on these labels, except 2,4-D Amine 480 SL (L9332) and MCPA 400 SL (0567), where a maximum of 0.5 litres per hectare should be applied..

IMPORTANT NOTES

- This tank mixture of **DOUBLEUP 540 SL** plus Alachlor 480 CS or 2,4-D Amine 480 SL (9332) or MCPA 400 SL (0567) may only be applied on certified maize cultivars containing Glyphosate tolerant genetic material.
- **DOUBLEUP 540 SL** must NOT be tank mixed with products containing Atrazine.

2. PRE-PLANT APPLICATION OF DOUBLEUP 540 SL IN CEREALS IN WINTER RAINFALL AREA

Table 2.

DOUBLEUP 540 SL	
0.7 to 1.3ℓ / ha or 1.0 % solution	1.5ℓ/ha or 1.5 % solution
1 to 8-leaf	8-leaf to pre-flower
<i>Arctotheca calendula</i>	Cape marigold
<i>Avena spp.</i>	Wild oats
<i>Bromus diandrus</i>	Ripgut brome
<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

0.7 to 1.3 L / ha or 1.0 % solution	1.5L/ha or 1.5 % solution
1 to 8-leaf	8-leaf to pre-flower
<i>Lolium spp.*</i>	Ryegrass
<i>Medicago polymorpha</i>	Clover
<i>Raphanus raphanistrum</i>	Wild radish
<i>Sonchus oleraceus</i>	Sow thistle

Difficult to control / variably controlled annual weeds:

- Inconsistent control of certain difficult to control species (refer also “WEED RESISTANCE MANAGEMENT” may be experienced. Avoid resistance by alternating the use of DOUBLEUP 540 SL with products from different chemical classes (refer to “RESISTANCE WARNING”).
- Inconsistent control and resistance may occur with Conyza & Lolium species.
- Use the higher dosage rate on difficult to control species or on established weeds.
- Add 0.5 litre per hectare maximum MCPA 400 SL (0567) or 2,4-D Amine 480 SL (9332) to control broadleaf weeds that are normally difficult to control.

3. FORESTRY AND INDUSTRIAL WEED CONTROL

Table 3.1. Dosage rates for weed control in forestry.

SITUATION	WEED SPECIES	DOSAGE RATE			REMARKS
		ℓ/ha	%Solution* (100ℓ water)*	Spot Spraying (in 100ℓ water)**	
Maintenance weed control in established forests	<i>Acacia mearnsii</i> (Black wattle)	2.0	0.8	1.0 to 1.3	Apply to young trees from 0.1 to 1.5m high. Apply the lower dosage rate on trees up to 1.0m height.
	<i>Solanum mauritianum</i> (Bugweed)	1.3	0.5	1.0	Large trees: Cut to 50cm, allow new growth of at least 50cm before application. Saplings: Apply directly to foliage
	<i>Rubus spp.</i> (Bramble)	4.0	1.6	1.0	Cut and remove lush growth in winter. Apply when new growth is more than 0.5m high. If re-growth occurs, spray with a 1.0% solution.

SITUATION	WEED SPECIES	DOSAGE RATE			REMARKS
		ℓ/ha	%Solution* (100ℓ water)*	Spot Spraying (in 100ℓ water)**	
<p>Firebreaks Firebreaks preparation, either tracer belts or total area.</p> <p>Band preparation for tree seedlings Situations suitable for such treatments include: a) Virgin veld b) Clear felled forests</p>	<p>In both situations the weed population would include perennials and annuals.</p> <p>For some of the weeds controlled refer to the list under Industrial weed control.</p>	2.8	1.2	1.5	<p>A minimum of 250 litres spray mixture per hectare must be applied when using the 1.2 % solution.</p> <p>A follow-up treatment may be necessary to control some hardy perennials using a 1.5% solution on a spot spray basis.</p>
<i>Eucalyptus grandis</i> (Blue gum)	Single stem stumps	3.3% solution			Apply a 50mℓ solution to a clean cambium area immediately after felling.
	Multi-stem stumps	4.6% solution			Apply a 100mℓ solution to a clean, fully exposed cambium layer immediately after felling. If re-growth occurs, spray with a 1.3 % solution.

* Based on knapsack application delivering 250 litres spray mixture per hectare. Application of a % solution with a knapsack sprayer must be calibrated such that it will equal the delivery of the corresponding litres per hectare dosage rate.

** Where spot spraying is done using a percentage solution, apply as a full cover application (but not to the point of run-off).

Table 3.2. Dosage rates for Industrial weed control.

BOTANICAL NAME	COMMON NAME	DOSAGE RATE		REMARKS
		ℓ/ha	%Solution*	
Perennial grasses:				
<i>Cynodon dactylon</i>	Common couch grass	4	1.6	Apply to vigorously growing plants in summer or autumn when nutrients are actively translocated to roots, rhizomes and stolons. Follow-up with 2.8 litres per hectare (a 1.7% solution) if any re-growth occurs.
<i>Cynodon nlemfuensis</i>	East African grass	4	1.6	
<i>Pennisetum clandestinum</i>	Kikuyu	2.8	1.2	Spray on active growth in summer. Spray re-growth with 2.0 litres per hectare or a 1.0% solution.

BOTANICAL NAME	COMMON NAME	DOSAGE RATE		REMARKS
		ℓ/ha	%Solution*	
<i>Paspalum paspalodes</i>	Couch Paspalum	4	1.6	Apply on active growing plants. Follow-up with half the recommended dosage rate if re-growth occurs.
<i>Paspalum dilatatum</i>	Common Paspalum	4	1.6	
Nutsedges:				
<i>Cyperus esculentus</i>	Yellow nutsedge	4	4	Apply during flowering stage. Spray re-growth with 2.0 litres per hectare or a 1.0% solution.
<i>Cyperus rotundus</i>	Purple nutsedge	4	4	
Annual broadleaf weeds:				
<i>Amaranthus hybridus</i>	Cape pigweed	2.8 to 4	1.0 to 1.6	Use 2.8 litres per hectare (a 1.0% solution) when weeds are in the early growth stages. Use 3.5 litres per hectare (a 1.4% solution) when weeds are in the early flowering stage. Use 4.0 litres per hectare (a 1.6% solution) when weeds are in the seeding stage, but still actively growing. Do not apply on to matured weeds that are in a stage of desiccation.
<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			

* Even at higher rates, the control of *Conyza* species may be variable, necessitating a follow-up application.

** Based on knapsack application delivering 250 litres spray mixture per hectare. Application of a % solution with a knapsack sprayer must be calibrated such that it will be equal to the corresponding litres per hectare dosage rate (NOTE - where spot spraying is done, using a percentage solution, apply as a full cover application (but not to the point of run-off)).

WEED CONTROL IN GRAPE VINES

Table 4. Dosage rates for weed control in grape vines.

CROP	DOSAGE RATE	REMARKS
Grape vines	1.0ℓ/ha PLUS 3.0L/ha MCPA 400 SL	Early winter: (Weeds under 15cm height). Not for Small mallow (<i>Malva parviflora</i>), Cape marigold (<i>Arctotheca calendula</i>), Oat seed grass (<i>Eriophora spp.</i>), Blue echium (<i>Echium vulgare</i>), Ryegrass (<i>Lolium spp.</i>), Sow thistle (<i>Sonchus oleraceus</i>) and Brome spp. (<i>Bromus spp.</i>)
	1.3ℓ/ha PLUS 4.0 L / ha MCPA 400 SL	Late winter: (Weeds under 30cm height). Use the higher rates for Bur clover (<i>Medicago polymorpha</i>), Prostrate knotweed (<i>Polygonum aviculare</i>) and Sheep sorrel, (<i>Rumex angiocarpus</i>).

IMPORTANT

- Prevent contact of spray droplets/mist with leaves, green and young bark of stems as well as fruit.
- Allow 10 days after pruning, or the removal of low branches and/or suckers before spraying weeds.

2,4-D Amine 480 SL (L9332) registered by Rainbow Agrosiences (Pty) Ltd, under Act 36 of 1947, alternated products, Aminespray 480 SL (9962) registered by Rainbow Agrisciences (Pty) Ltd
 Rainbow Terbutylazine 900 WDG (L9318) registered by Rainbow Agrosiences (Pty) Ltd
 MCPA 400 SL (L0576) Registered by Calchem (Pty) Ltd under act 36 of 1947