

ONKRUIDDODERGROEP D HERBICIDE GROUP

Aktiewe Bestanddeel / Active Ingredient:

parakwat ioon (bipiridiel) /
paraquat ion (bipyridyl) 200 g/l
(as dichloriedsout) / (as dichloride salt) 276 g/l

UN 2922

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'n Waterige oplossing kontakonkruiddoder vir die beheer van eenjarige grasse en eenjarige breëblaaronkruid in gewasse soos aangedui en vir die uitdroging van suikerriet. Onaktief sodra dit met die grond in aanraking kom.

An aqueous solution contact herbicide for the control of annual grasses and annual broadleaf weeds in crops as listed and as a sugarcane desiccant. Inactivated on contact with the soil.

Batch No

EMERGENCY TEL. / NOOD TEL.
++27 (0) 8312 33 911
(Bateleur 911)

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Registration holder / Registrasiehouer:
Syngenta SA (Pty) Ltd. / (Edms) Bpk.
(Co./Mpy Reg. No. 1998/013761/07)
Private Bag / Privaatsak X 60
HALFWAY HOUSE, 1685 RSA.
Tel. (011) 541-4000

Date of Manufacture



1. WARNINGS:

- **Withholding periods:** (Minimum number of days between last application and feeding):

Sugarcane (feeding) and grazing 21 days

- Handle with care.
- Harmful if swallowed.
- Undiluted **GRAMOXONE** can cause eye and skin irritation.
- Keep locked up out of reach of children, uninformed persons and animals.
- Store away from food, feed, fertiliser and seed.
- Keep animals out of treated area until the spray has dried.
- **In case of poisoning contact a doctor and make this label available to him.**
- **Re-entry:** Do not enter treated area within 1 day after application unless wearing protective clothing.

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

2. PRECAUTIONS:

- Do not eat, drink or smoke while handling this product.
- Avoid contamination of food, feed, drinking water and eating utensils.
- Do not use application equipment or spray pressures which result in the formation of a fine spray mist e.g. mistblowers, ULV applicators and other similar equipment.
- Do not use muddy water.
- With knapsack and hand-held sprayers, mix each 1 part of **GRAMOXONE** with at least 40 parts of water.
- Wear rubber gloves and face shield when handling the concentrate. If you get it in your eyes, flush it out at once. If you get it on your skin, wash it off at once. If you spill it on your clothes, change and wash them. (**See first aid**).
- Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container.
- Wear rubber gloves and face shield while spraying. Do not

inhale the spray mist and avoid contact with the spray as much as you can. Avoid spray drift onto other crops, grazing rivers or dams. Avoid spray drift onto adjacent crops because the spray will damage green plant tissue.

- Do not use the empty container for any other purpose. Crush or cut it then burn or bury it. Keep unused **GRAMOXONE** in this container, tightly closed, away from food. Dispose of wash water where it will not contaminate crops, grazing, rivers or dams. Change and wash your work clothes. Wash yourself.

First Aid:

Eye splashes : flush eyes for 10 - 15 minutes with clean water. Consult a doctor. IF **GRAMOXONE** IS SWALLOWED make the person vomit. Immediately take person, and this container and label to hospital for emergency medical treatment.

Emergency Medical Treatment:

Give 1 l suspension of Fuller's Earth (15 %) or Bentonite (7 %) or activated charcoal. Also give purgative e.g. Mannitol (20 % solution). See booklet "Paraquat poisoning. A practical Guide to diagnosis, first aid and Hospital treatment." (available from **GRAMOXONE** distributors) or contact Bateleur 911 at +27 (0) 8312 33 911.

3. RESISTANCE MANAGEMENT

For resistance management, **GRAMOXONE** is a group code D herbicide. Any weed population may contain individuals naturally resistant to **GRAMOXONE** and other group code D (herbicides). The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. These resistant weeds may not be controlled by **GRAMOXONE** or any other group code D 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 disease control programs.

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

4. DIRECTIONS FOR USE

Use only as indicated.

4.1 Compatibility:

GRAMOXONE is compatible with AGRAL 90 (L2967), COMPLEMENT SUPER (L8169), DUAL GOLD (L5749), FALCON GOLD (L5750), GARDOMIL GOLD (L6246), GESAPRIM SUPER (L3914), LUMAX (L7483), MEDAL GOLD (L6396), METAGAN GOLD (L5748), MIDSTREAM (L4532), PRIMAGRAM GOLD (L6247) and TERBUZIN 600 SC (L4683).

If **GRAMOXONE** needs to be used in tankmix combinations with other herbicides, first mix small quantities of the chemicals in the same ratio in which they will be used, separately with water. Add these mixtures together while agitating and check for any signs of incompatibility e.g. flocculation, etc. In this instance, full cognisance must be taken of all warnings, precautions and directions for use mentioned on the labels of the products concerned.

4.2 Mixing instructions:

Mix the required quantity of **GRAMOXONE** with **clean** water in the spray tank. When **GRAMOXONE** is used in a tank mixture with another herbicide(s) follow the mixing instructions on that label.

Continuous agitation is essential when applying tank mixtures.

GRAMOXONE is a contact herbicide and should only be applied to weeds in the early growth stages for optimum control. **AVOID** spraying large established weeds since the control will not be satisfactorily and more than one application may be needed. Re-growth may also occur under these conditions.

Apply by ground sprayers or by knapsack sprayer. USE HIGH VOLUME AND HIGH DOSAGE RATE FOR SPRAYING DENSE WEED GROWTH. Ensure thorough coverage of the weeds. Do not spray buds or green parts of any crop. **GRAMOXONE** kills green tissue but does not harm brown mature bark.

A. HERBICIDE - TREE CROPS		
Add either AGRAL 90 (L5279) at 50 ml/100 ℓ (2,5 ml/5 ℓ water) spray mixture or Complement Super at 100 ml/ha.		
CROP	DOSAGE / ha	REMARKS
A1. Deciduous fruit orchards e.g. Apples, Pears, etc.	1,25 - 5 ℓ	Apply in 200 - 750 ℓ water/ha as necessary in spring. Mix with simazine for residual effect. (in pome fruit only). Where Cape marigold is present, replace half GRAMOXONE with MIDSTREAM. (Refer to MIDSTREAM label).
	1,5 - 2,5 ℓ GRAMOXONE plus 5 ℓ MCPA	Apply in 200 - 750 ℓ water/ha for the control of ribwort (<i>Plantago</i> spp), <i>Convolvulus</i> spp as well as annual winter grasses.
A2. Subtropical fruit and nut orchards eg. Bananas, tea, coffee, citrus, avocados, papayas, pecans, macadamias, etc.	1,25 - 5 ℓ	Apply in 200 - 750 ℓ water/ha using a low pressure floodjet nozzle. In citrus only: can be mixed with a suitable registered residual herbicide.
A3. Vineyards	1,25 - 5 ℓ	Apply in 200 - 750 ℓ water/ha as an overall application before bud burst. Subsequently as a directed spray. Where Cape marigold is present, replace half the GRAMOXONE with MIDSTREAM. (Refer to MIDSTREAM label). For longer residual control add Simazine at the registered rate.
	1,5 - 2,5 ℓ GRAMOXONE plus 5 ℓ MCPA	Apply in 200 - 750 ℓ water/ha to control ribwort (<i>Plantago</i> spp.) and <i>Convolvulus</i> spp. as well as annual winter grasses.

B. HERBICIDE - ROW CROPS		
Add either AGRAL 90 (L5279) at 50 ml/100 ℓ (2,5 ml/5 ℓ water) spray mixture or Complement Super at 100 ml/ha.		
CROP	DOSAGE / ha	REMARKS
B1. Maize Post-emergence weed control during the fallow period i.e. between harvest and planting	1,25 - 5 ℓ	Apply in 200 - 500 ℓ water/ha. The dosage rate will depend on weed size and density. Where the control of well established winter weeds is required apply 2 - 3 ℓ 2,4-D /ha followed by 2 - 3 ℓ GRAMOXONE /ha 3 to 4 weeks later.
Inter-row weed control	1,25 - 5 ℓ For residual weed control use 1 - 2 ℓ GRAMOXONE plus a suitable registered residual herbicide	Apply in 200 - 300 ℓ water/ha as a low pressure directed spray to weeds not taller than 10 cm. Use "flood-jet" or "LP" nozzles with drop arms or drop legs. Maize plants must be at least 30 cm tall. Do not apply to maize under stress or maize with a low yield potential or during windy conditions or to fields with uneven surfaces. IMPORTANT: Consult all the label(s) of the product(s) in the mixture with GRAMOXONE for directions for use, safety precautions, rates, use restrictions, mixing instructions and weeds controlled. NOTE: Scorch of the lower leaves of the maize plant will occur. Care must be taken to avoid spray contact with more than the 2 lower leaves as more damage to the maize plant may result in yield reduction.

CROP	DOSAGE / ha	REMARKS
B2. Potatoes Weed control (early post-emergence)	1,25 - 5 ℓ	Apply in 300 - 500 ℓ water/ha. For residual grass control, spray lands with a mixture of 1 ℓ GRAMOXONE plus WENNER or RELAY at the registered rates before the crop has reached 10 % emergence.
B3. CASSAVA Post-emergence weed control	1,25 - 5 ℓ For longer residual action, use 1,5 - 2 ℓ GRAMOXONE plus a suitable registered residual herbicide	Apply as a directed spray after plants have lost their leaves. The application rate depends on the growth stages of the weeds.
B4. Vegetables	1,25 - 5 ℓ	Apply in 200 - 500 ℓ water/ha as a directed inter-row spray for all row crops where weeds have already germinated but are not bigger than 10 cm OR use a knapsack sprayer fitted with a shield.
B5. Sugarcane	1,25 - 5 ℓ For residual weed control use 0,5 - 3 ℓ GRAMOXONE plus a suitable registered residual herbicide	The dosage will depend on weed size and density. IMPORTANT: Consult all the label(s) of the product(s) in the mixture with GRAMOXONE for safety precautions, rates, mixing instructions and weeds controlled.
	0,5 ℓ/ha + 4 - 5 ℓ LUMAX / ha	Apply in 200 - 300 ℓ water/ha for early post emergence weed control. Add Complement Super at 100 ml/ha or adjuvants as specified on the LUMAX label. Applications with LUMAX + GRAMOXONE can be applied broadcasted in ratoon cane up to a height of 30 cm. In plant cane GRAMOXONE should not be applied later than the spike stage of the crop.
B6. Wheat Post-emergence weed control during the fallow period i.e. between harvest and planting	1,25 - 5 ℓ	Apply in 200 - 500 ℓ water/ha before planting. Where Cape marigold (<i>Arctotheca calendula</i>) is present half the GRAMOXONE should be replaced by MIDSTREAM. (Refer to MIDSTREAM label).
B7. Hops	1,25 - 5 ℓ	Apply in 200 - 500 ℓ water. Apply as an overall application or on plant rows before emergence of Hops cuttings to control young annual grasses and broadleaf weeds. Apply prior to the emergence of first year cuttings. GRAMOXONE can be used together with recommended registered pre-emergence herbicides. In established hop plants GRAMOXONE can be used to control young weeds and can also be used as a burn-down agent in mature hops during winter but not later than September.
	3 - 5 ℓ	Apply in 200 - 500 ℓ water. Apply to control annual grasses and broadleaf weeds between plant rows and/or on plant rows when the hop plants are in a dormant stage. Can be applied together with other registered pre-emergence herbicides.

C. HERBICIDE - NON ROW CROPS

Add either **AGRAL 90** (L5279) at 50 ml/100 ℓ spray (2,5 ml/5 ℓ water) mixture or **Complement Super** at 100 ml/ha.

CROP	DOSAGE / ha	REMARKS
C1. Lucerne (over 6 months old)	1,25 - 5 ℓ	Apply in 300 ℓ water/ha just before dormancy breaks or after harvesting before re-growth of lucerne occurs.

D. OTHER USES

Add either **AGRAL 90** (L5279) at 50 ml/100 ℓ (2,5 ml/5 ℓ water) spray mixture or **Complement Super** at 100 ml/ha.

CROP	DOSAGE / ha	REMARKS
D1. Industrial areas as a herbicide	2,5 - 5 ℓ	Apply in 500 - 1 000 ℓ water/ha. Use high spray volume and high dosage rates for dense weeds.
D2. Sugarcane Desiccation	2 - 3 ℓ	Apply in 100 ℓ water/ha. Burn cane as soon as practical after treatment.

NB: Avoid drift onto adjacent crops as green plant tissue will be damaged by the spray.

Weeds which are controlled by GRAMOXONE:

Most annual weeds that have already germinated.

Weeds mentioned below will only be controlled variable:

Perennial weeds,
volunteer maize, peanuts and potatoes
Domonia weed
Commelina benghalensis
Chenopodium spp
Conyza bonariensis
Lolium spp
Plantago lanceolata
Portulaca oleracea
tuft-grasses (>15 cm diameter)

GRAMOXONE scorches and controls the green above soil parts of most annual weeds. Regrowth often happens due to subsoil parts regenerating e.g. from stolons or bulbs.

Inconsistent and variable control of weeds even at these high rates may be experienced due to a number of reasons namely:

- drought stress
- cold or heat stress
- plants with waxy layers e.g. *Portulaca oleracea*, *Chenopodium album*, *Gisekia pharnecoides*,
- natural resistance to the control with paraquat based products e.g. *Commelina benghalensis*, *Ipomoea* spp., *Malva parviflora* and *Conyza bonariensis*,
- acquired resistance due to the repeated use of paraquat and/or glyphosate e.g. *Lolium* spp and *Conyza bonariensis* (confirmed resistance in the RSA),
- poor coverage and penetration of exposed leaves e.g. *Argemone subfusiformis*,
- plants with bulbs and tubers e.g. *Cyperus* spp (regrowth),
- growth tips being protected either by leave sheets covering growth points or subsurface growth points.
- inconsistent relationship between above soil parts and below soil parts e.g. *Conyza bonariensis* after dry periods or growth during the winter.

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