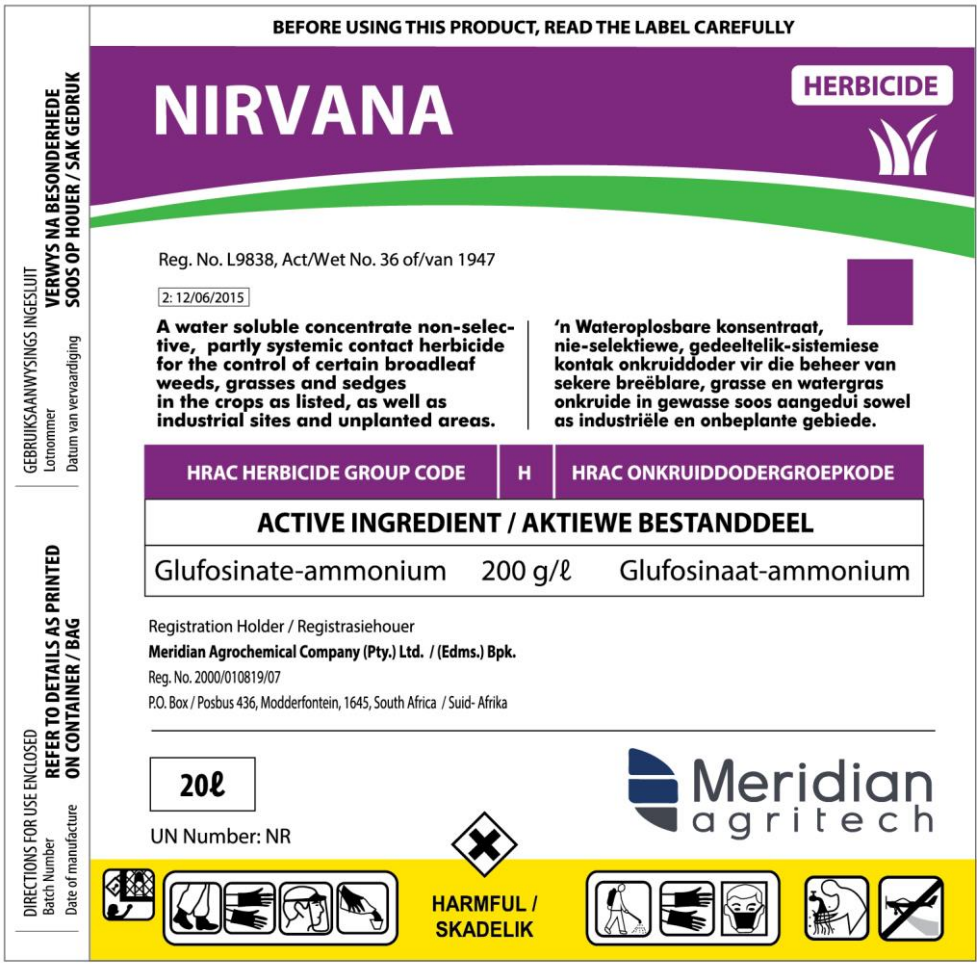
NIRVANA



BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

NIRVANA

HERBICIDE

Reg. No. L9838, Act/Wet No. 36 of/van 1947

2: 12/06/2015

A water soluble concentrate non-selective, partly systemic contact herbicide for the control of certain broadleaf weeds, grasses and sedges in the crops as listed, as well as industrial sites and unplanted areas.

'n Wateroplosbare konsentraat, nie-selektiewe, gedeeltelik-sistemiese kontak onkruiddoder vir die beheer van sekere breëblare, grasse en watergras onkruide in gewasse soos aangedui sowel as industriële en onbeplante gebiede.

HRAC HERBICIDE GROUP CODE	H	HRAC ONKRUIDDODERGROEPKODE

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL		
Glufosinate-ammonium	200 g/ℓ	Glufosinaat-ammonium

Registration Holder / Registrasiehouer

Meridian Agrochemical Company (Pty.) Ltd. / (Edms.) Bpk.

Reg. No. 2000/010819/07

P.O. Box / Posbus 436, Modderfontein, 1645, South Africa / Suid- Afrika

20ℓ

UN Number: NR

HARMFUL / SKADELIK

GEBRUIKSAANWYSINGS INGESLUIT VERWYS NA BESONDERHEDE
Lotnommer SOOS OP HOUER / SAK GEDRUK
Datum van vervaardiging

DIRECTIONS FOR USE ENCLOSED REFER TO DETAILS AS PRINTED
Batch Number ON CONTAINER / BAG
Date of manufacture

WARNINGS

- Handle concentrate with great care.
- Harmful when swallowed.
- Irritating to the eyes.
- Avoid contact with eyes.
- Store away from food, feed or seeds.
- Keep out of reach of children, animals and uninformed persons.
- Handle with care.
- Store under lock and key in a dry, cool place out of direct sunlight.
- The use of **NIRVANA** in any way or time other than that as indicated on this label may lead to plant injury or other negative effects.
- In case of poisoning: **CALL A DOCTOR AND MAKE THIS LABEL AVAILABLE TO HIM / HER.**
- **Re-entry** – Do not enter treated area within one day after treatment unless wearing protective clothing.
- **NIRVANA** has been tested on some of the most important commercial cultivars without any phytotoxic effects. More susceptible cultivars may be released in future which need to be tested; for this apply **NIRVANA** to a limited test area before commercial applications are made.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be effective under all conditions. 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, 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 by the user to follow the label instructions, or to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

PRECAUTIONS

- Do not inhale spray mist or vapours.
- Avoid contact with skin
- Wear boots, rubber gloves and a face shield when handling or applying the product.
- Wash with soap and water after use and accidental skin contact as well as contaminated clothing.
- In the case of eye contact, wash with copious amounts of water.
- Do not eat, drink or smoke while mixing or applying the product or before washing hands and face and changing clothes.
- Avoid drift of the spray onto other crops, grazing, rivers, dams and areas not under treatment.
- Clean the applicator thoroughly after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Prevent contamination of food, feeds, drinking water and eating utensils.
- Invert the empty container over the spray or mixing tank and allow it to drain for at least 30 seconds after the flow has slowed to a drip. Thereafter rinse the empty container three times with a volume of water equal to a minimum of 10% of that of the container. Add the rinsate to the contents of the spray tank.
- Destroy the empty container by puncturing and burning or burying it, and do not use it for any other purpose.
- When **NIRVANA** is used in combination with other products, consideration should be given to the instructions and crop rotation requirements of those particular products.

SYMPTOMS OF HUMAN POISONING
Include vomiting, Diarrhoea, Abdominal pain, Tremors, Hypotension, muscular weakness, unconsciousness, coma, convulsions, respiratory failure, nausea, tachycardia. **Symptoms may be delayed.**

FIRST AID TREATMENT

Inhalation: Remove victim to fresh air. Keep patient calm, warm and at rest. If the patient is not breathing, **seek medical attention.** If symptoms persist, seek medical attention.

Skin contact: Immediately remove contaminated clothing and shoes and flush body and clothes with large amounts of water for at least 15 - 20 minutes. Wash thoroughly with soap and water (including hair, skin

and fingernails) Wash contaminated clothing before re-use. Persons providing first aid must wear gloves to avoid self-contamination. If symptoms persist, seek medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for at least 15 minutes holding eyelids open. Remove contact lenses if present after the first 5 minutes**.** Seek medical attention if irritation persists.

Ingestion: Rinse mouth immediately (if patient is conscious, alert and able). **Seek medical attention immediately. Do not** induce vomiting unless told to do so by a poison control centre or doctor. Never induce vomiting or give anything by mouth to a victim who is unconscious or is having convulsions.

NOTE TO PHYSICIAN

Supportive and symptomatic treatment as indicated by the patient's condition is recommended. Gastric lavage should be considered in cases of significant ingestions only within the first 2 hours.
The application of activated charcoal and sodium sulphate is advised.
Forced alkaline diuresis and haemodialysis may be considered.
No specific antidote is known
In the case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If this is not effective, phenobarbital may be used.
Contraindication: atropine
Oxygen or artificial respiration if needed.
Keep the respiratory tract clear.
ECG – monitoring (Electrocardiogram)
EEG – monitoring (Electroencephalogram)
Monitor the respiratory, cardiac and nervous system.
Keep under medical supervision for at least 48 hours.

RESISTANCE WARNING

For resistance management, **NIRVANA** is a group code H herbicide. Any weed population may contain individuals naturally resistant to **NIRVANA** and other group code H herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **NIRVANA** or any other group code H herbicide.

To delay herbicide resistance:

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

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

The presence of resistant weeds is difficult to detect prior to use and therefore neither the Registration Holder nor the Distributor can accept responsibility for any losses as a result of **NIRVANA** not controlling resistant weeds. Do not apply **NIRVANA** alone in situations where weed resistance has been confirmed. Sub-standard application of **NIRVANA** may lead to inferior weed control and may assist in the development of herbicide resistance.

MODE OF ACTION

NIRVANA is a non-selective contact herbicide with some systemic action. Translocation occurs only within the leaves, predominantly from the leaf base to the leaf tip. Glufosinate-ammonium is a glutamine synthetase inhibitor. This leads to the accumulation of ammonium ions and the inhibition of photosynthesis.

USE RESTRICTIONS

- Do not apply **NIRVANA** to any crop or situation not mentioned in this instruction leaflet.
- Only apply **NIRVANA** using an accurate and safe application technique.
- If **NIRVANA** is used in a tank mix with other recommended products, consideration should be given to the restrictions of those respective products.
- Do not allow spray drift to contact susceptible crops.
- Do not apply this product in combination or tank mixture with any other product or agricultural remedy which is not specifically listed on this label. Meridian Agrochemical Company (Pty) Ltd accepts no responsibility for any negative effects experienced if the instructions on this label are not adhered to, unless a Meridian representative was consulted beforehand.

DIRECTIONS FOR USE
Use only as directed.

MIXING INSTRUCTIONS

Shake container well before use.

Mix the required quantity of **NIRVANA** with **clean** water in the spray tank. When **NIRVANA** is used in a tank mixture with another herbicide(s) follow the mixing instruction on that label. **Maintain continuous agitation when applying tank mixtures**.
Maintain constant, thorough agitation throughout mixing and spraying. **Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank overnight.** The spraying equipment must be thoroughly flushed out at the end of the spraying operation.

APPLICATION METHODS

Make use of only correctly calibrated spray equipment that has effective agitation in the spray tank and that is checked regularly during application in order to ensure even and accurate application. **Constant agitation throughout the spray operation is essential.** Only clean water should be used.

Ground application:

Use a spray volume of 300 – 500 ℓ water / ha depending on the size of the weeds.

For weeds in the seedling stage (up to 10 cm in height), use the lower listed dosage rate. For weeds taller than 10 cm, but less than 50 cm in height, use the higher listed dosage rate. For weeds 50 cm in height and taller increase the volume of water to 800 ℓ / ha without increasing the dosage rate above that of the highest listed rate.

Spot spraying:

Where spot spraying is conducted, the same recommendations should be followed as for overall spraying and the same concentration of mixture used (15 – 25 m ℓ / ℓ water). Weeds should be thoroughly wetted with this spray mixture.

RECOMMENDATIONS: TIMING OF APPLICATION

CROP	APPLICATION TIMING
Citrus, pome fruit, stone fruit and vines in the Winter Rainfall Region.	Start spraying in the late winter or early spring, taking the recommendations for the specific weeds into consideration. Follow-up applications may be needed on perennial weeds or problem broadleaf weeds 4 – 6 weeks after the initial spray unless otherwise indicated. Commence spraying before bud burst in bush and low trellised vines. In the case of high trellises, do not spray any overhanging foliage or green portions of the vines. Do not spray vines which are 2 years and less in age unless the stems are shielded.
Citrus, subtropical fruit, nuts, pome fruit and stone fruit in the Summer Rainfall Region.	Start spraying during late spring when the soil moisture is sufficient and the weeds are actively growing. Repeat the spray 7 – 8 weeks later if needed.

Industrial sites and unplanted areas.	Apply when the weeds are actively growing and not under stress due to drought or low temperatures. The best results are achieved when application is made 1 – 3 days after rainfall and there is adequate soil moisture for active plant growth
Sugarcane (Directed post-emergence application in plant and ratoon sugarcane)	**Apply as a directed post-emergence spray between the sugarcane rows** when the weeds are actively growing and are not wilted or stressed due to drought, excessive heat, low temperatures or any other stress inducing factor. **Ensure that the sugarcane foliage is not exposed to any spray drift as the cane will then be damaged.**

WEED SPECIES NORMALLY CONTROLLED BY NIRVANA:

WINTER RAINFALL REGION

Annual grasses

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Avena fatua	Common wild oats	5 – 7.5	A
Avena sativa	Oats (cover crop)	5 – 7.5	A
Bromus diandrus	Ripgut brome	5 – 7.5	A
Bromus uniloides	Rescue grass	5 – 7.5	A
Digitaria sanguinalis	Crab fingergrass	5 – 7.5	A
Echinochloa crus-galli	Barnyard grass	5 – 7.5	A
Ehrharta longifolia	Oat-seed grass	5 – 7.5	A – Large established grass is not adequately controlled. Suppression.
Eleusine indica	Goose grass	5 – 7.5	A
Lolium sp.	Italian ryegrass	7.5 OR 3 ℓ **NIRVANA + 3** ℓ + suitable adjuvant such as Wet All	A May result in erratic weed control
Poa annua	Winter grass	3 – 5	A
Secale cereale	Rye (cover crop	5 – 7.5	A

A – Spray older plants before seed sets.

Perennial grasses

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Cynodon dactylon	Common couch	7.5	B – Multiple sprays. Spray when adequate leaf area is present for uptake, but before the grass forms a recumbent mat.
Paspalum dilatatum	Common Paspalum	5 – 7.5	B – Big clumps are suppressed. Small plants controlled
Paspalum distichum	Couch Paspalum	5 – 7.5	B
Paspalum urvillei	Tall Paspalum	5 – 7.5	B - Big clumps are suppressed. Small plants controlled
Pennisetum clandestinum	Kikuyu	5 – 7.5	B – Repeat 5-8 weeks later if re-growth occurs, 5 ℓ / ha should be sufficient for follow-up sprays.

For the above mentioned perennial grasses, sprays should be repeated hen 50 + 60 % re-growth occurs.

DO NOT USE LESS THAN 300 ℓ SPRAY MIXTURE / HA. ENSURE THOROUGH WETTING OF THE FOLIAGE.

B – Spray at any stage while actively growing. Repeat if re-growth occurs.

Sedges

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Cyperus esculentus	Yellow nutsedge	7.5	Multiple sprays. If the yellow nutsedge is shaded, 7.5 ℓ / ha should, in most cases, give good suppression if sprayed at 5% flowering under normal growing conditions. Control may be erratic under other situations due to climate and many other factors influencing growth and herbicide uptake. Re-growth normally occurs. Re-spray when sufficient leaf area (50%) is present for uptake of the herbicide.

Broadleaf weeds:

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Amaranthus spp.	Pigweed	5 – 7.5	A + C
Arctotheca calendula	Cape marigold	5 – 7.5 OR 3 ℓ **NIRVANA + 3** ℓ + suitable adjuvant such as Wet All	A
Bidens spp.	Blackjacks	5 – 7.5	A – and before plants reach a height of 50 cm
Centaurea repens	Russian knapweed	3 – 5	A
Chenopodium album	White goosefoot	7.5	A + C
Convolvulus arvensis	Field bindweed	5 – 7.5	A – Add MCPA 750 DMAX at the recommended rate. Spray re-growth
Conyza spp.	Fleabane	7.5	A + C
Datura spp.	Thorn apple	5 – 7.5	A + C
Echium lycopsis	Patterson's curse	3 – 5	C. Spray before flowers form
Emex australis	Spiny Emex	5 – 7.5	B
Erodium moschatum	Musk heron's bill	7. 5	A. Add MCPA 750 DMAX at the recommended rate. if plants have reached a height of 25 cm.
Fumaria officinalis	Fumitory	3 – 5	B
Lepidium africanum	Pepper cress	5 – 7.5	A
Malva parviflora	Small mallow	7.5	Will suppress young actively growing plants before they reach 25 cm in height.
Medicago spp.	Clover	5 – 7.5	A
Melilotus indica	Annual yellow sweet clover	3 – 5	A
Oenothera stricta	Evening primrose	5 – 7.5	A
Oxalis pes – caprae	Yellow sorrel	5 – 7.5	B – Repeat when needed. Suppression only.

Plantago lanceolata	Narrow-leaved ribwort	5.0 - 7.5	Multiple sprays. Apply just before or just after flowering. Repeat when there is sufficient leaf area for uptake of the herbicide. For improved control, add MCPA 750 DMAX at the recommended rate to 7.5 ℓ **NIRVANA** / ha.
Polygonum aviculare	Prostrate knotweed	5 – 7.5	A
Raphanus raphanistrum	Wild radish	7.5	C – Up to early flowering. After flowering add 4 ℓ MCPA to 5 ℓ **NIRVANA** / ha.
Rumex angiocarpus	Sheep sorrel	5 – 7.5	A
Senecio spp.	Senecio	3 – 5	A
Sisymbrium thellungii	Common wild mustard	3 – 5	A
Stellaria media	Chickweed	3 – 5	C
Tagetes minuta	Khaki weed	5 – 7.5	A + C
Vicia sativa	Broad-leaved purple vetch	3 – 5	A

A = Spray plants before seed sets.
B = Spray at any stage while actively growing.
C = Before plants reach a height of 25 cm.

WEEDS CONTROLLED IN THE SUMMER RAINFALL REGION

Annual grasses

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Amaranthus spp.	Pigweed	7.5	A + C
Avena fatua	Common wild oats	7. 5 ℓ /ha	A
Bromus catharticus	Rescue grass	5 – 7.5	B – Repeat when 50 – 60 % re-growth occurs.
Digitaria sanguinalis	Crab fingergrass	5 – 7.5	A
Eleusine indica	Goose grass	5 – 7.5	A
Setaria verticillata	Sticky bristle grass	5 – 7.5	A
Urochloa panicoides	Herringbone grass	5 – 7.5	A
Zea Mays	Volunteer maize	5.0	Spray when plant is in the 2 – 4 leaf stage

A = Spray plants before seed sets.
Perennial grasses

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Cynodon dactylon	Common couch	7.5	B – Multiple sprays. Spray when adequate leaf area is present for uptake, but before the grass forms a recumbent mat.
Panicum maximum	Common buffalo grass	5 – 7.5	B – Repeat at the lower rate if re-growth occurs.
Paspalum paspaloides	Couch Paspalum	7.5	B – Repeat if re-growth occurs.
Pennisetum clandestinum	Kikuyu	5 – 7.5	B – Repeat 5-8 weeks later if re-growth occurs, 5 ℓ / ha should be sufficient for follow-up sprays.

For the above mentioned perennial grasses, sprays should be repeated when 50 – 60 % re-growth occurs.

DO NOT USE LESS THAN 300 ℓ SPRAY MIXTURE / HA. ENSURE THOROUGH WETTING OF THE FOLIAGE.

B = Spray at any stage while actively growing

Sedges

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Cyperus esculentus	Yellow nutsedge	7.5	Multiple sprays. If the nutsedge is shaded, 7.5 ℓ / ha should, in most cases, give good suppression if sprayed at 5% flowering under normal growing conditions. Control may be erratic under other situations due to climate and many other factors influencing growth and herbicide uptake. Re-growth normally occurs. Re-spray when sufficient leaf area (50%) is present for uptake of the herbicide.

Broadleaf weeds:

BOTANICAL NAME	COMMON NAME	RATE ℓ / HA	REMARKS
Alternanthera pungens	Khaki bur weed	3 – 5	A
Amaranthus spp.	Pigweed	5 – 7.5	A + C
Bidens pilosa	Common blackjack	5 – 7.5	A + C
Chenopodium album	White goosefoot	5 – 7.5	A + C
Conyza spp.	Fleabane	7.5	A + C
Datura spp.	Thorn apple	5 – 7.5	A + C
Lepidium africanum	Pepper cress	5 – 7.5	A
Oxalis spp.	Sorrel	5 – 7.5	B
Schkuhria pinnata	Dwarf marigold	5 – 7.5	A
Tagetes minuta	Khaki weed	5 – 7.5	A + C

A = Spray plants before seed sets.
B = Spray at any stage while actively growing.
C = Before plants reach a height of 25 cm.

NOTES

- Seedlings that have not emerged at the time of the application will not be controlled and are not damaged. No activity via the roots is present.
- Damage symptoms in the form of yellowing and leaf scorch to the aerial portions of the - plants start to develop 7 – 10 days after treatment. Maximum control is achieved 2 – 6 weeks after spraying depending on the weed spectrum and the prevailing environmental conditions.
- Optimal herbicidal activity following leaf uptake is obtained under environmental conditions favourable for active plant growth as well as for young growing plants having a large proportion of foliage with a high metabolic rate.
- The use of **NIRVANA** sprays at the prescribed doses should remove weed competition within orchards etc., for a period of usually not less than 6 weeks in the case of an established weed population, but often greatly longer than this period, depending on the weed species, type of weed stage development, whether the weeds are annual or perennial as well as upon environmental factors.
- Irrigation before application of **NIRVANA** assists in weed control. **Do not spray weeds under environmental stress** such as drought, low temperatures, water-logging and salinity as herbicidal action may be negatively affected. This also applies to weeds which are dormant, senescing or growing slowly due to other plant stress inducing factors.
- Allow at least **12 hours** between application and the re-commencement of irrigation where perennials and waxy leafed plants have been sprayed.

- In the case of weeds which do not have waxy leaves or in the case of small annual weeds, at least **8 hours** should be allowed to lapse between application and re-commencement of irrigation.
- What has bearing on irrigation also has bearing on the effect of rainfall above 5 mm.
- No impairment of plant growth should take place if crops are planted in soil recently treated with **NIRVANA** as breakdown is rapid.
- Do not spray when weeds are wet.
- Do not spray when weeds are covered in a heavy layer of mud, dust or debris.
- Green side shoots and suckers may be sprayed and scorched without damage extending to the rest of a fruit tree or vine.
- Ensure that any direct spray or drift I kept out of contact with green leaves, active buds and fruit.
- In the case of young trees with green stems, these should be protected or spray shields used in order to prevent damage to non-suberised bark.
- It is recommended that low hanging branches be trimmed in order to avoid leaf and fruit contact as well as to prevent interference with weed control.
- Bananas should be at least 2 years of age before spray is allowed to come into contact with the plants. Only the bases of the pseudostems should be permitted to come into contact with the spray.

The registration holder does not accept any liability in respect of the control of unlisted weeds.

WAARSKUWINGS

- Hanteer produk met groot sorg.
- Skadelik indien ingesluk.
- Irriterend vir die oë.
- Vermy kontak met oë.
- Bêre weg van voedsel, voer en saad.
- Hou buite die bereik van kinders, oningeligte persone en diere.
- Hanteer versigtig.
- Bêre agter slot-en-grendel in n droë, koel plek, weg van direkte sonlig.
- Die gebruik van **NIRVANA** op enige manier of tyd anders as op die etiket aangedui, kan tot gewasskade of ander negatiewe gevolge lei.
- In geval van vergiftiging: **SKAKEL 'N GENEESHEER EN TOON HIERDIE ETIKET AAN HOM/HAAR.**
- **Herbetreding** - Moenie die behandelde gebied binne een dag na bespuiting betree nie, tensy beskermende oorklere gedra word.
- **NIRVANA** is sonder enige fitotoksisiteitskade op die mees belangrikste kommersiële kultivars getoets. Meer vatbare kultivars mag in die toekoms vrygestel word wat eers getoets moet word; hiervoor moet **NIRVANA** eers op 'n klein toetsoppervlakte aangewend word, alvorens groot kommersiële bespuitings gemaak word.

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie. Die werking en effek kan daarvan beïnvloed word deur faktore soos abnormale grond-, klimaats- en bergingstoestande, kwaliteit van verdunningswater, verenigbaarheid met ander stowwe 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 van die betrokke middel as gevolg van die versuim van die gebruiker om die etiketaanwysings na te kom, of om die etiketaanwysings na te kom of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moenie spuitnewel of dampe inasem nie.
- Vermy kontak met die vel.
- Dra stewels, rubber handskoene en 'n gesigskerm wanneer produk gehanteer of toegedien word.
- Was met seep en water na gebruik en toevallige velkontak; so ook besoedelde klere.
- In die geval van oogkontak, spoel met groot hoeveelhede water uit.
- Moet nie eet, drink of rook tydens vermenging of toediening van die produk of voordat hande en gesig gewas is en skoon klere aangetrek is nie.
- Vermy wegdrywing van die spuitnewel na ander gewasse, weidings, riviere, damme en areas wat nie onder behandeling is nie.
- Maak die toedieningsapparaat skoon na gebruik. Raak ontslae van die spoelwater waar dit nie gewasse, weidings, riviere, damme en boorgate sal besoedel nie.
- Voorkom besoedeling van voedsel, voer, drinkwater en eetgerei.
- Keer die leë houer om oor die spuittenk of mengbak en laat dit dreineer vir minstens 30 sekondes nadat die vloei tot 'n gedrup verminder het. Spoel die leë houer daarna **drie keer** uit met 'n volume water gelykstaande aan 'n minimum van 10 % van die houer. Gooi die spoelwater by die inhoud van die spuittenk.
- Vernietig die leë houer deur gate daarin te maak, te verbrand of te begrawe en vir geen ander doel te gebruik nie.
- Wanneer **NIRVANA** in kombinasie met ander produkte gebruik word, moet oorweging geskenk word aan die voorskrifte en wisselbouvereistes van die spesifieke produkte.

SIMPTOME VAN MENSLIKE VERGIFTIGING
Kan die volgende insluit: braking, diarree, abdominale pyn, bewing, hipotensie, spierswakheid, bewusteloosheid, koma, konvulsies, respiratoriese versaking, naarheid, tagikardie. **Simptome kan vertraag wees.**

NOODHULPBEHANDELING
Inaseming: Verwyder persoon na vars lug. Hou pasiënt kalm, warm en rustig. Indien die pasiënt nie asemhaal nie, **kry mediese hulp**. Indien simptome voortduur, kry mediese hulp.

Velkontak: Verwyder besoedelde klere en skoene en spoel liggaam en klere onmiddellik met groot hoeveelheid water vir ten minste 15-20 minute af. Was deeglik met seep en water (insluitend hare, vel en naels). Was besoedelde klere voor hergebruik. Persone wat noodhulp verskaf moet handskoene dra om self-besmetting te voorkom. Indien simptome voortduur, verkry mediese hulp.

Oogkontak: Spoel oë onmiddellik uit met baie skoon water vir ten minste 15 minute en hou ooglede oop. Verwyder kontaklense, indien teenwoordig, na die eerste 5 minute. Verkry mediese hulp indien irritasie voortduur .

Ingesluk: Spoel mond dadelik uit (indien die pasiënt by bewussyn en wakker is). **Verkry onmiddellik mediese hulp. Moet nie** braking induseer, tensy deur 'n gifbeheersentrum of dokter aangesê is nie. Moet nooit braking induseer of enige iets per mond aan 'n slagoffer gee wat bewusteloos is of stuiptrekkings het nie.

NOTA AAN GENEESHEER

Ondersteunende en simptomatiese behandeling na aanleiding van die pasiënt se toestand word aanbeveel.
Maagspoeling moet oorweeg word in gevalle waar beduidende hoeveelhede ingeneem is en slegs binne die eerste 2 ure.
Die toediening van geaktiveerde koolstof en natriumsulfaat word aanbeveel.
Gedwonge alkaliese diurese en hemodialise kan oorweeg word.
Geen spesifieke teenmiddel is bekend nie.
In die geval van stuiptrekkings, moet 'n bensodiasepien (bv. diasepam) gegee word volgens standaard riglyne. As dit nie doeltreffend is nie, kan phenobarbital gebruik word.
Kontra-indikasies: atropien
Suurstof of kunsmatige asemhaling indien nodig.
Hou die lugweë oop.
EKG - monitering (Elektrokardiogram)
EEG - monitorering (Elektroënkefalogram)
Monitor die respiratoriese-, hart- en senuweestelsel.
Hou ten minste vir 48 uur onder mediese toesig.

WEERSTANDSWAARSKUWING

Vir weerstandsbestuur is **NIRVANA** 'n groepkode H onkruiddoder. Enige onkruidpopulasie mag individue insluit wat natuurlike weerstand teen **NIRVANA** en ander groepkode H onkruiddoders het. Die weerstandbiedende individue kan uiteindelik die onkruidpopulasie oorheers indien hierdie onkruiddoders herhaaldelik aangewend word. Hierdie weerstandbiedende onkruide sal waarskynlik nie deur **NIRVANA** of enige ander groepkode H onkruiddoder beheer word nie.

Om weerstand teen onkruiddoders te vertraag:

- Vermy die eksklusiewe herhaaldelike gebruik van onkruiddoders met dieselfde groepkode. Wissel af met, of gebruik tenkmengsels van, produkte in verskillende onkruiddodergroepkodes .
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in onkruidbeheerprogramme.

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

Die teenwoordigheid van weerstandbiedende onkruide is moeilik om voor gebruik te bepaal en daarom kan die Registrasiehouer of die Verspreider nie verantwoordelikheid gehou word vir enige verliese as gevolg van **NIRVANA** wat nie weerstandbiedende onkruide beheer nie. Moenie **NIRVANA** alleen toedien in situasies waar onkruidweerstand bevestig is nie. Sub-standaard toedienings van **NIRVANA** kan tot onbevredigende onkruidbeheer lei wat kan bydra tot die ontwikkeling van weerstand teen die onkruiddoder.

METODE VAN WERKING

NIRVANA is 'n nie-selektiewe kontak onkruiddoder met gedeeltelike sistemiese werking. Translokasie kom slegs binne die blare, hoofsaaklik uit die blaarbasis na die blaarpunt voor. Glufosinaat-ammonium is 'n glutamiensintetase-inhibeerder. Dit lei tot die opbou van ammoniumione en die inhibisie van fotosintese.

GEBRUIKSBEPERKINGS

- Moenie **NIRVANA** op enige gewas of situasie toedien wat nie op hierdie etiket verskyn nie.

- Dien slegs **NIRVANA** met akkurate en veilige toedieningsmetodes toe.
- Indien **NIRVANA** in 'n tenkmengsel met ander aanbevole produkte gebruik word, moet oorweging aan die beperkings van daardie betrokke produkte geskenk word.
- Moenie die toelaat dat die wegdrywing van die spuitmengsel ander gevoelige gewasse bereik nie.
- Moet nie hierdie produk in kombinasie of tenkmengsel met enige ander produk of landboumiddel gebruik wat nie spesifiek op hierdie etiket gelys is nie. Meridian Agrochemical Company (Edms.) Bpk. aanvaar geen verantwoordelikheid vir enige negatiewe gevolge indien die instruksies op die etiket nie nagekom word nie, tensy 'n
  Meridian verteenwoordiger vooraf geraadpleeg is.

GEBRUIKSAANWYSINGS
Gebruik slegs soos aangedui.

MENGINSTRUKSIES

Skud houer goed voor gebruik.

Meng die verlangde hoeveelheid **NIRVANA** met skoon water in die spuittenk. Wanneer **NIRVANA** in 'n tenkmengsel met ander onkruiddoder(s) gebruik word, volg die menginstruksies op daardie etiket .
Handhaaf deurlopende roering tydens toediening van tenkmengsels.
Handhaaf konstante en deeglike roering tydens vermenging en bespuiting. **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om oornag in die spuittenk te staan nie.** Die spuittoerusting moet deeglik uitgespoel word aan die einde van die toediening.

TOEDIENINGSMETODES

Maak seker dat korrek gekalibreerde spuittoerusting gebruik word wat effektiewe roering in die spuittenk verseker en gereeld tydens toediening nagegaan word om egalige en akkurate toediening te verseker.
Konstante roering tydens toediening is noodsaaklik. Slegs skoon water moet gebruik word.

Grondtoediening:

Gebruik 'n spuitvolume van 300 – 500 ℓ water/ha afhangende van die grootte van die onkruid.

Vir onkruide in die saailingstadium (tot 10 cm in hoogte), gebruik die laer aanbevole dosis. Vir onkruide langer as 10 cm, maar minder as 50 cm in hoogte, gebruik die hoër aanbevole dosis. Vir onkruide 50 cm in hoogte en langer verhoog die volume van die water tot 800 ℓ/ha sonder om die dosis hoër as dié van die hoogste aanbevole dosis te verhoog.

Kolbespuitings:

Waar kolbespuiting gedoen word, moet dieselfde aanbevelings gevolg word as by algehele bespuiting en dieselfde konsentrasie van die mengsel (15 - 25 mℓ/ℓ water) gebruik word. Onkruide moet deeglik met hierdie spuitmengsel benat word.

AANBEVELINGS: TOEDIENINGSTYD

GEWAS	TOEDIENINGSTYD
Sitrus, kernvrugte, steenvrugte en wingerde in die Winterreënvalgebied .	Begin bespuiting in die laat winter of vroeë lente deur die aanbevelings vir die spesifieke onkruide in ag te neem. Opvolgbespuitings mag op meerjarige onkruide of probleem-breëblaaronkruide 4 - 6 weke na die aanvanklike bespuiting benodig word, tensy anders aangedui . Begin bespuiting voor bot in boswingerde en laag opgeleide wingerde. In die geval van hoë opleiwingerde, moenie enige oorhangende blare of groen gedeeltes van die stokke spuit nie. Moet nie wingerde spuit wat 2 jaar en minder in die ouderdom is nie, tensy die stamme beskerm is.

Sitrus, subtropiese vrugte, neute, kern– en steenvrugte in die Somerreënvalgebied.	Begin bespuiting gedurende die laat lente wanneer die grondvog voldoende is en die onkruid aktief groei. Herhaal die bespuiting 7-8 weke later indien nodig.
Industriële terreine en ongeplant gebiede.	Dien toe wanneer die onkruid aktief groei en nie aan stres as gevolg van droogte of lae temperature onderworpe is nie. Die beste resultate sal verkry word wanneer toediening 1-3 dae na reënval plaasvind en daar voldoende grondvog is vir die aktiewe groei van die plant .
Suikerriet (Gerigte na-opkoms toediening in plant- en ratoenriet)	**Dien toe as 'n gerigte na-opkoms toediening tussen die suikerrietrye** wanneer die onkruide aktief groei en nie verlep of onder strestoestand verkeer as gevolg van droogte, oormatige hitte, lae temperature of enige ander stres-veroosakende toestand nie. **Maak seker dat die suikerrietblare nie blootgestel word aan enige oorwaai van spuitnewel, aangesien die rottang beskadig sal word .**

ONKRUIDSOORTE WAT NORMAALWEG DEUR NIRVANA BEHEER WORD:

WINTERREËNVALGEBIED

Eenjarige grasse

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Avena fatua	Gewone wildehawer	5 – 7.5	A
Avena sativa	Hawer (dekgewas)	5 – 7.5	A
Bromus diandrus	Predikantsluis	5 – 7.5	A
Bromus uniloides	Reddingsgras	5 – 7.5	A
Digitaria sanguinalis	Kruisvingergras	5 – 7.5	A
Echinochloa crus-galli	Hanepootmanna	5 – 7.5	A
Ehrharta longifolia	Hawersaadgras	5 – 7.5	A – Groot gevestigde gras word nie voldoende beheer nie. Onderdrukking
Eleusine indica	Jongosgras	5 – 7.5	A
Lolium sp.	Italiaanse raaigras	7.5 OF 3 ℓ **NIRVANA** + 3 ℓ geskikte bevorderingsmiddel soos Wet All	A Kan lei tot wisselvallige onkruidbeheer
Poa annua	Wintergras	3 – 5	A
Secale cereale	Rog(dekgewas)	5 – 7.5	A

A = Spuit ouer plante voor saadvorming.

Meerjarige grasse

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Cynodon dactylon	Gewone kweek	7.5	B – Verskeie bespuitings. Spuit wanneer voldoende blaaroppervlakte vir opname teenwoordig is, maar voordat die gras 'n mat vorm.
Paspalum dilatatum	Gewone Paspalum	5 – 7.5	B – Groot polle word onderdruk. Klein plante word beheer.
Paspalum distichum	Rusbank Paspalum	5 – 7.5	B
Paspalum urvillei	Langbeen Paspalum	5 – 7.5	B - Groot polle word onderdruk. Klein plante word beheer.
Pennisetum clandestinum	Kikoejoe	5 – 7.5	B – Herhaal 5-8 weke later indien hergroei voorkom, 5 ℓ / ha behoort genoeg te wees vir opvolgbespuitings.

Vir bogenoemde meerjarige grasse, moet bespuitings herhaal word wanneer 50 + 60 % hergroei voorkom.

MOENIE minder as 300 ℓ spuitmengsel/ha gebruik nie. Verseker deeglike benatting van die blare.

B = Spuit op enige stadium terwyl aktief groeiend is. Herhaal indien hergroei voorkom.

Watergrasse

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Cyperus esculentus	Geeluintjie	7.5	Verskeie bespuitings. As die geeluintjies in koelte voorkom, sal 7.5 ℓ / ha in die meeste gevalle goeie onderdrukking gee indien by 5 % blom onder normale groeitoestande gepuit word. Beheer kan wisselvallige onder sekere toestande wees as gevolg van klimaat en baie ander faktore wat groei en onkruiddoderopname beïnvloed. Hergroei vind normaalweg plaas. Herbespuit wanneer genoegsame blaaroppervlak (50 %) teenwoordig is vir opname van die onkruiddoder.

Breëblaaronkruide:

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Amaranthus spp.	Misbredie	5 – 7.5	A + C
Arctotheca calendula	Soetgousblom	5 – 7.5 OR 3 ℓ **NIRVANA + 3** ℓ + geskikte bevorderingsmiddel soos Wet All	A
Bidens spp.	Knapsekêrel	5 – 7.5	A – Voor plante ‘n hoogte van 50cm bereik.
Centaurea repens	Bitterbossie	3 – 5	A
Chenopodium album	Withondebossie	7.5	A + C
Convolvulus arvensis	Akkerwinde	5 – 7.5	A – Voeg MCPA 750 DMAX teen die aanbevole dosis by. Spuit hergroei weer.
Conyza spp.	Skraalhans	7.5	A + C
Datura spp.	Stinkblaar	5 – 7.5	A + C
Echium lycopsis	Bloudisseldoring	3 – 5	C. Spuit voor blomme vorm.
Emex australis	Kaapse dubbeltjie	5 – 7.5	B
Erodium moschatum	Turknael	7. 5	A. Voeg MCPA 750 DMAX teen die aanbevole dosis by as plante 'n hoogte van 25 cm bereik het.
Fumaria officinalis	Duiwekerwel	3 – 5	B
Lepidium africanum	Peperbossie	5 – 7.5	A
Malva parviflora	Kiesieblaar	7.5	Sal jong aktief groeiende plante onderdruk voor hulle ‘n hoogte van 25 cm bereik.
Medicago spp.	Klawer	5 – 7.5	A
Melilotus indica	Jaarlikse geel soet klawer	3 – 5	A
Oenothera stricta	Aandblom	5 – 7.5	A
Oxalis pes – caprae	Geelsuring	5 – 7.5	B – Herhaal indien nodig. Onderdrukking alleenlik.

Plantago lanceolata	Smal blare weëblaar	5.0 - 7.5	Verskeie bespuitings. Spuit net voor of net na blom. Herhaal wanneer daar voldoende blaaroppervlakte vir onkruiddoderopname is. Vir verbeterde beheer, voeg MCPA 750 DMAX teen die aanbevole dosis by 7.5 ℓ **NIRVANA**/ha toe.
Polygonum aviculare	Voëlduisendknoop	5 – 7.5	A
Raphanus raphanistrum	Wilderadys	7.5	C - Tot vroeë blom. Na blom voeg 4 ℓ MCPA by 5 ℓ **NIRVANA** / ha.
Rumex angiocarpus	Skaapbossie	5 – 7.5	A
Senecio spp.	Senecio	3 – 5	A
Sisymbrium thellungii	Gewone wildemosterd	3 – 5	A
Stellaria media	Muurkruid	3 – 5	C
Tagetes minuta	Kakiebos	5 – 7.5	A + C
Vicia sativa	Breëblaar perswieke	3 – 5	A

A = Spuit plante voor saadvorming.
B = Spuit op enige stadium terwyl aktief groeiend.
C = Voordat plante 'n hoogte van 25 cm bereik.

ONKRUIDE WAT IN DIE SOMERREËNVALSTREEK BEHEER WORD

Eenjarige Grasse

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Avena fatua	Gewone Wildehawer	7. 5 ℓ /ha	A
Bromus catharticus	Slanggras	5 – 7.5	B – Herhaal wanneer 50 - 60 % hergroei voorkom.
Digitaria sanguinalis	Kruisvingergras	5 – 7.5	A
Eleusine indica	Jongosgras	5 – 7.5	A
Setaria verticillata	Klitsborselgras	5 – 7.5	A
Urochloa panicoides	Beesgras	5 – 7.5	A
Zea Mays	Oplasgmielies	5.0	Spuit wanneer plant in die 2-4 blaarstadium is.

A = Spuit plante voor saadvorming.

Meerjarige Grasse

BOTANIESE NAAM	GEWONE NAAM	DOSIS ℓ / HA	OPMERKINGS
Cynodon dactylon	Gewone kweek	7.5	B – Verskeie bespuitings. Spuit wanneer voldoende blaaroppervlakte vir opname teenwoordig is, maar voordat die gras ‘n lêende mat vorm.
Panicum maximum	Gewone buffelsgras	5 – 7.5	B – Herhaal teen die laer dosis indien hergroei voorkom.
Paspalum paspaloides	Bermudagras	7.5	B – Herhaal indien hergroei voorkom.
Pennisetum clandestinum	Kikoejoe	5 – 7.5	B – Herhaal 5-8 weke later indien hergroei voorkom; 5 ℓ / ha behoort genoeg te wees vir opvolgbespuitings.

Vir bogenoemde meerjarige grasse, moet bespuitings herhaal word wanneer 50 - 60 % hergroei voorkom.

MOENIE in minder as 300 ℓ spuitmengsel/ha toedien nie. Verseker deeglike benatting van die blare.

B = Spuit op enige stadium terwyl aktief groei.

Watergrasse

BOTANIESE NAAM	GEWONE NAAM	RATE ℓ/ HA	OPMERKINGS
Cyperus esculentus	Geeluintjies	7.5	Verskeie bespuitings. As die uintjies in skadu groei sal 7,5 ℓ/ha in die meeste gevalle goeie onderdrukking gee as teen 5% blom onder normale groeitoestande gespuit word. Beheer kan wisselvallige onder sekere omstandighede wees as gevolg van klimaat en baie ander faktore wat groei en onkruiddoder opname beïnvloed. Hergroei vind normaalweg plaas. Herbespuit wanneer genoegsame blaaroppervlak (50 %) vir opname van die onkruiddoder teenwoordig is.

Breëblaaronkruide

BOTANIESE NAAM	GEWONE NAAM	RATE ℓ / HA	OPMERKINGS
Alternanthera pungens	Kakiedubbeltjie	3 – 5	A
Amaranthus spp.	Misbredie	5 – 7.5	A + C
Bidens pilosa	Gewone knapsekêrel	5 – 7.5	A + C
Chenopodium album	Withondebossie	5 – 7.5	A + C
Conyza spp.	Skraalhans	7.5	A + C
Datura spp.	Stinkblaar	5 – 7.5	A + C
Lepidium africanum	Pepperbossie	5 – 7.5	A
Oxalis spp.	Suring spp.	5 – 7.5	B
Schkuhria pinnata	Klein Kakiebos	5 – 7.5	A
Tagetes minuta	Kakiebos	5 – 7.5	A + C

A = Spuit plante voor saadvorming.
B = Spuit op enige stadium terwyl aktief groeiend.
C = Voordat plante die hoogte van 25 cm bereik.

NOTAS

- Saailinge wat met tyd van bespuiting nie opgekom het nie, word nie beheer of beskadig nie. Geen werking via die wortels is teenwoordig nie.
- Simptome van beskadiging in die vorm van vergeling en blaarskroei van die boonste dele van die plante ontwikkel 7 - 10 dae na behandeling. Maksimum beheer word 2 - 6 weke na bespuiting bereik afhangende van onkruidspektrum en omgewingstoestande.
- Optimale onkruiddodende aktiwiteit na blaaropname word onder omgewingstoestande wat gunstig vir aktiewe groei van die plant verkry, sowel as vir jong groeiende plante met 'n groot gedeelte van die blare met 'n hoë metaboliese tempo.
- Die gebruik van **NIRVANA** bespuitings teen die voorgestelde dosisse sal onkruidkompetisie binne boorde ens. verminder vir 'n periode van gewoonlik nie minder as 6 weke in die geval van 'n gevestigde onkruidpopulasie, maar dikwels baie langer, afhangende van die onkruidspesies, tipe onkruid, stadium van ontwikkeling, hetsy eenjarige of meerjarige sowel as omgewingsfaktore.
- Besproeiing voor toediening van **NIRVANA** help met onkruidbeheer. **Moenie onkruide onder die omgewings strestoestande spuit nie.** Droogte, lae temperature, versuiptoestande en hoë soutinhoud van gronde sal onkruiddodende werking negatief beïnvloed. Dit geld ook vir onkruide wat aan die oud word is, rustend is, of stadig groei weens ander plant-stresveroorsakende faktore.
- Laat ten minste 12 uur tussen toediening en die heraanvang van besproeiing toe waar meerjariges en wasagtige blaarplante gespuit is.
- In die geval van onkruide wat nie wasagtige blare het nie of in die geval van klein eenjarige onkruid, moet ten minste 8 ure tussen toediening en heraanvang van besproeiing verloop.
- Wat betrekking het op besproeiing, het ook betrekking op die effek van reënval bo 5 mm.
- Geen benadeling van plantegroei vind plaas as gewasse op behandelde lande geplant word, wat kort tevore met **NIRVANA** bespuit is, omdat afbreek in die grond vinnig is.

- Moet nie spuit wanneer die onkruide nat is nie.
- Moet nie spuit wanneer onkruide met 'n swaar laag modder, stof of plantreste bedek is nie.
- Groen sylote en suiers kan gespuit en geskroei word sonder om die res van die vrugteboom of wingerdstok te beskadig.
- Maak seker dat enige direkte bespuiting of oorwaai van spuitnewel weg van kontak met die groen blare, aktiewe knoppe en vrugte gehou word.
- In die geval van jong bome met groen stamme, moet dit beskerm word of spuitskilde gebruik word om skade aan ongekurkte bas te voorkom.
- Dit word aanbeveel om laag hangende takke te snoei om vrug- en blaarkontak te verhoed, asook om die toedieningproses van die onkruiddoder te vergemaklik.
- Piesangs moet ten minste 2 jaar oud wees voordat spuitstof in kontak met die plante mag kom. Slegs die basisse van die pseudostamme mag in kontak met die spuitstof kom.

Die registrasiehouer aanvaar geen aanspreeklikheid ten opsigte van die beheer van ongelyste onkruide nie.