



BITRAD IOXYNIL

Reg.No. L9889 Act No. 36 of 1947

Reg.Nr. L9889 Wet Nr. 36 van 1947

READ ATTACHED LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

LEES DIE INGESLOTE ETIKET VOOR GEBRUIK
HOU BUITE BEREIK VAN KINDERS EN DIERE

HERBICIDE GROUP B

A herbicide formulated as an emulsifiable concentrate, for the selective control of certain broadleaf weeds in onions and garlic.



DANGER

ONKRUIDDODER GROEP B

'n Onkruidodder geformuleer as emulgeerbare konsentraat, vir die selektiewe beheer van breëblaar onkruid in uie en knoffel.

Hazard Statements:

Combustible liquid. May be fatal if swallowed and enters airways (aspiration hazard). Harmful if swallowed. May cause allergic skin reaction. Causes serious eye damage. Suspected of damaging to fertility or the unborn child. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust, fumes, mist, vapours or spray. Do not eat, drink, or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear PPE. Wash hands, face, and any exposed skin thoroughly after handling. Do not touch eyes.

ACTIVE INGREDIENT

ioxynil (nitrile) octanoate ester

.....225 g/litre.....

AKTIEWE BESTANDDEEL

loksoniel (nitriel) oktanoaat ester

Net Volume

Netto Volume

Registered by/Geregistreer deur:

BITRAD CONSULTING (PTY) LTD

41 Rudolph Str, Sunderland Ridge, Centurion. Tel: 012 666 7331

BATCH NUMBER
DATE MANUFACTURED

LOTNOMMER
DATUM VERVAARDIG

Expiry date
Vervaldatum



< 2 years/jaar

UN No.
Emergency number

3082
082 446 8946

VN nr.
Noodnommer

WARNINGS

- **Hazard Statements**

Combustible liquid
Harmful if swallowed and may be fatal if product enters lungs
Causes serious eye damage, mild skin irritation and may cause allergic skin reaction
Suspected of damaging to fertility of unborn child
Very toxic to aquatic life with long lasting effects

- **ALLOW A MINIMUM OF 70 DAYS BETWEEN APPLICATION AND HARVESTING.**
- **RE-ENTRY:** Do not enter treated area within one day after treatment 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 weeds 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 label instructions or to the occurrence of conditions that could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

PRECAUTIONS

- **Prevention**

Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing spray mist/fumes.
Do not eat drink or smoke when using the product
Wash hands, face, and any exposed skin thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection. Contaminated work clothing should not be allowed out of the workplace
Avoid release to the environment

- **Response**

Get medical help if exposed and concerned.
IF SWALLOWED: Get emergency medical help immediately
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses
IF ON SKIN: Wash with plenty of water. If rash occurs, get medical help
Specific treatment (see on the label).
Rinse mouth and do NOT induce vomiting.
Collect spillage.
If skin irritation or rash occurs: Get medical help.
If eye irritation persists: Get medical help.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use carbon dioxide, dry chemical (powder) foam or water spray to extinguish the fire.

- **Storage**

Store behind lock and key in well ventilated place, away from food and feed

- **Disposal**

Triple rinse empty container in the following manner: 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 percent of that of the container. Add the rinsing to the contents of the spray tank
Dispose empty containers to an approved recycling facility in accordance with local and national regulations

RELEVANT SUBSTANCES

Hazardous Component	Weight - %	GHS Classification
loxynil octanoate	22.5%	Acute Toxicity Oral, Category 3. Skin Sensitization, Category 1. Serious Eye Damage/Irritation, Category 2 A. Reproductive Toxicity, Category 2. Aquatic Toxicity Acute, Category 1 (M Factor = 10). Aquatic Toxicity Chronic, Category 1 (M Factor = 1).
Calcium Dodecyl Benzene Sulphonate	<10%	Skin Corrosion/Irritation, Cat.2. Serious Eye Damage/Irritation, Cat.1. Aquatic Toxicity Acute, Category 2. Aquatic Toxicity Chronic Category 3.
Isobutyl Alcohol	<10%	Flammable Liquid, Cat. 3. Skin Corrosion/Irritation, Cat 2. Serious Eyes Damage/Irritation, Cat.1. STOT SE, Cat.3. Respiratory & Central Nervous System.
Heavy Aromatic Petroleum Solvent	>60%	Aspiration Toxicity, Category 1.
Medium Aliphatic Petroleum Solvent	<10%	Aspiration Toxicity, Category 1. STOT RE, Category 1. Central nervous system.

FIRST AID: Note to Physician

Always obtain treatment by Physician immediately.

No specific antidote. Treat symptomatically.

Remove person from affected area and remove contaminated clothes and seek medical advice. If in eyes, rinse gently for 15 minutes. Wash skin with plenty of water. If breathing is difficult administer oxygen. If breathing stopped, do artificial respiration. Do not use mouth to mouth resuscitation. If ingested, treat symptomatically and supportively. Administer gastric lavage and symptomatic treatment e.g., anti-convulsants (barbituates) when necessary.

RESISTANCE WARNING:

Bitrad loxynil is a member of the nitrile group of herbicides. The mode of action of this group is the inhibition of photosynthesis at photosystem II (Group Code C₃) and also uncoupling (membrane disruption) (Group Code M). Classified by HRAC as a herbicide belonging to Group Codes C₃ & M. Since **Bitrad loxynil** has two different modes of action, resistance is less likely to develop than herbicides with a single mode of action. However, any weed population may contain individuals naturally resistant to **loxynil** and other Group Codes C₃ & M herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. Such resistant weeds may not be controlled by **Bitrad loxynil** or any other Group Codes C₃ & M herbicides.

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.

Note: Sub-standard applications may lead to unsatisfactory control and assist in the development of resistance.

MODE OF ACTION

Acts by inhibiting the electron photosynthetic transportation, resulting in reactive chemicals oxidise and degrades lipids and proteins and also uncouples phosphorylation resulting in the disruption of ATP production.

DIRECTIONS FOR USE:

USE ONLY AS DIRECTED

COMPATIBILITY:

Do not mix **Bitrad loxynil** with fertilizers.

MIXING INSTRUCTIONS:

1. Fill spray tank to $\frac{1}{2}$ full of water.
2. Add the required quantity of **Bitrad loxynil** as recommended below and mix thoroughly.
3. If a tank mixture with **Bitrad Oxyfluorfen** is required, add the required quantity recommended and add water to the required volume while agitating continuously.
4. Do not leave excessive spray mixture overnight for later use.

METHOD OF APPLICATION:

Ground application:

Use conventional high volume applicators. Ensure thorough coverage of the weeds by **using at least 200 l of spray mixture per hectare.**

Do not use concentrated sprays. The use of low volume applicators that produces small spray droplets i.e. mist blowers or air assisted boom sprayers, could result in crop damage.

Aerial application is therefore **NOT** recommended.

BITRAD IOXYNIL has been tested on most of the important cultivars and no significant phytotoxicity in the form of yield reduction has been recorded under normal growing conditions. When more sensitive cultivars are commercialized and cultivated in the future, large areas should not be sprayed without prior testing of **BITRAD IOXYNIL** on that cultivar. Consult with the registration holder or distributor in case of doubt.

Wrong application timing in terms of crop stage or over dosing may result in crop damage.

APPLICATION TABLE:

It is recommended that ALL treatments recommended below, are preceded by clean cultivation and/or followed by a pre-emergent herbicide treatment.

CROP & GROWTH STAGE	DOSE RATE PER HECTARE	REMARKS
ONIONS Directly seeded	2,25 l	Apply after the onion plants have developed 3 to 4 true leaves. See also "IMPORTANT NOTES"
Transplanted seedlings	2 to 2,75 l	Apply when the transplanted onions have become well established. See also "IMPORTANT NOTES")"
GARLIC	2 to 2,75 l	Apply after the garlic plants have developed 3 to 4 true leaves. See also "IMPORTANT NOTES"
IMPORTANT NOTES 1. Weeds must be at the correct growth stage when sprayed.		

The weeds should be fully emerged, but not older than the 6-leaf stage (very young seedling stage for problem weeds listed below).

2. If a second germination of weeds occurs later in the season, **BITRAD IOXYNIL** may be applied at 2 to 2,75 liter per hectare depending on weed size and the adherence to the withholding period of 70 days between application and harvest.
3. Do not tank mix **BITRAD IOXYNIL** with post-emergence grass herbicides as excessive phytotoxicity could result.
4. Leaf scorch and some distortion of crop may occur after spraying **BITRAD IOXYNIL**. This is usually transitory and will not affect yield.
5. Adverse growing conditions, e.g. extreme cold or heat, frost, drought, water logging, wind or sand damage, or the presence of pests or diseases before or after application may cause crop damage. Do not use **BITRAD IOXYNIL** under these conditions.
6. Do not spray immediately before sprinkler irrigation or when rain is likely to fall. A three hour drying period after application is necessary.

WEEDS CONTROLLED BY BITRAD IOXYNIL

<i>Amaranthus hybridus</i>	pigweed
<i>Argemone subfusiformis</i>	white flowered mexican poppy
<i>Chenopodium album</i>	white goosefoot
<i>Chenopodium murale</i>	nettle-leaved goosefoot
<i>Datura ferox</i>	large thorn-apple
<i>Galinsoga parviflora</i>	small-flowered quickweed (gallant soldier)
<i>Raphanus raphanistrum</i>	wild radish

Problem weeds

These weeds will only be controlled by **BITRAD IOXYNIL** if sprayed in the very young rosette or seedling stage.

<i>Polygonum aviculare</i>	prostrate knotweed
<i>Emex australis</i>	spiny emex

NOTE

BITRAD IOXYNIL controls the abovementioned weed species. Other weed species that were not present during the development trials with this herbicide were also controlled to a certain degree. The registration holder does not, however, accept responsibility for the control of unlisted weeds.

WAARSKUWINGS

- **Gevaarklousules**

Vlambare vloeistof
Skadelik indien ingesluk en mag dodelik wees indien produk in lange kom
Veroorsaak ernstige oogskade, ligte velirritasie en moontlike velallergie
Vermoed dat produk vrugbaarheid of ongebore babas mag beïnvloed
Uiters giftig vir waterlewe

- **Wagperiode:** Laat 'n minimum van **70 dae** toe tussen laaste toediening en oes.
- **Herbetreding:** Moet nie behandelde gebied betree binne een dag na behandeling sonder beskermende klere 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 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 etiketaanwysings na te kom of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer of registrasiehouer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- **Voorkoming**

Verkry, lees en volg die veiligheidsmaatreëls noukeurig voordat produk gebruik word.
Hou weg van hitte, vonke, oop vlamme en ander ontbrandingsbronne. Moenie rook nie.
Voorkom inaseming van dampe/spuitnewel
Moet nie eet, drink of rook terwyl produk gebruik word nie
Was hande, gesig en blootgestelde vel deeglik na hantering
Dra beskermende handskoene, -klere, oog- en gesigbeskerming. Besoedelde klere behoort nie toegelaat word buite die werksplek nie
Voorkom vrystelling van profuk aan die omgewing

- **Reaksie**

Kry onmiddelik mediese hulp indien blootgestel en bekommerd
Indien INGESLUK: Kry mediese hulp. Spoel mond. Moet NIE braking induseer nie
Indie in Oë: Kry mediese hulp. Spoel onmiddelik met water vir 15 minute.
Indien op VEL: Was met baie water. Met veluitslag kry mediese hulp
Spesifieke behandeling: sien EERSTEHULP
Versamel gemorsde produk.
Verwyder besmette klere en was dit voor hergebruik
In geval van brand: Gebruik chemise poeier, skuim of water om vuur te blus

- **Storing**

Stoor weggesluit in goed deurlugte plek weg van voedsel en voer

- **Wegdoening**

Spoel die leë houer driekeer as volg uit: Keer die leë houer om oor die spuit- of mengtenk en dreineer vir minstens 30 sekondes nadat die vloei tot 'n gedrup verminder het. Spoel die houer daarna driekeer uit met 'n volume water gelykstaande aan 'n minimum van 10 persent van die inhoud van die houer. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer op die voorgeskrewe wyse vernietig word.
Doen weg met leë houer deur te verskaf aan goedgekeurde hersiklerings instansies volgens plaaslike en nasionale regulasies.

BETROKKE BESTANDDELE:

Gevaarlike Komponent	Massa - %	GHS Klassifikasie
loksoniel oktanoaat	22.5%	Akute Orale toksisiteit, Kategorie 3. Velsensitering, Kategorie 1. Ernstige Oogskade/Irritasie, Kategorie 2 A. Reproduktiewe Toksisiteit, Kategorie 2. Akute waterlewe Toksisiteit, Kategorie 1 (M Factor = 10). Kroniese waterlewe Toksisiteit, Kategorie 1 (M Factor = 1).
Kalsium dodesiel benseen sulfonaat	<10%	Skin Corrosion/Irritation, Cat.2. Serious Eye Damage/Irritation, Cat.1. Aquatic Toxicity Acute, Category 2. Aquatic Toxicity Chronic Category 3.
Isobutiel Alkohol	<10%	Vlambare vloeistof, Kat. 3. Velirritasie, Kat 2. Ernstige Oogskade/irritasie, Kat.1. STOT SE, Kat.3. Asemhaling & Sentrale Senuweestelsel.
Swaar petroleum oplosmiddel	>60%	Asemhalingstoksisiteit, Kategorie 1.
Medium Alifatiese petroleum oplosmiddel	<10%	Asemhalingstoksisiteit, Kategorie 1. STOT RE, Kategorie 1. Sentrale senuweestelsel

EERSTEHULP:**Verkry altyd onmiddellike mediese hulp.**

Geen spesifieke teenmiddel nie. Behandel simptome. Verwyder persoon uit blootstelling, verwyder klere en verkry mediese hulp. Indien in oë, spoel versigtig vir 15 minute. Was vel deeglik met baie water. Indien asemhaling moeilik is, dien suurstof toe. Indien asemhaling staak, pas kunsmatige asemhaling toe. Moet nie mond tot mond asemhaling toepas nie. Indien ingeneem, behandel simptome. Maagspoeling en spierspasma behandeling met barbiturate.

WEERSTANDWAARSKUWING

BITRAD IOXYNIL is 'n lid van die nitriel-onkruidodergroep. Die werkswyse van hierdie groep is deur die inhibering van fotosintese by fotosisteen II (Groepkode C₃) en ook ontkoppeling (membraanversteuring) (Groepkode M) en deur *HRAC* as 'n onkruidoder wat aan beide Groepkodes, C₃ en M behoort, geklassifiseer. Aangesien **BITRAD IOXYNIL** twee verskillende werkswyse het, is dit minder waarskynlik dat weerstandigheid teen **BITRAD IOXYNIL**, soos in die geval van onkruidoders met 'n enkel werkswyse, mag ontwikkel.

Desnieteenstaande, kan enige onkruidbevolking individue wat 'n natuurlike weerstand teen **BITRAD IOXYNIL** of enige ander groepkode C₃ en M onkruidoder het, bevat. Hierdie weerstandbiedende individue kan uiteindelik die onkruidbevolking domineer indien hierdie onkruidoders herhaaldelik gebruik word. Sulke weerstandbiedende onkruid sal waarskynlik nie deur **BITRAD IOXYNIL** of enige ander groepkode C₃ en M onkruidoder beheer word nie.

Om weerstand teen onkruidoders te vertraag:

- Verminder die uitsluitlike en herhaalde gebruik van onkruidoders van dieselfde groepkode.
- Wissel af met, of gebruik tenkmengsels van produkte in verskillende onkruidodergroepkodes.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in onkruidoderbeheerprogramme.

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

Aangesien dit moeilik is om die voorkoms van weerstandige onkruid voor die gebruik van die onkruidodder te bepaal, is dit uiters belangrik dat behandelde areas gereeld met tussenposes geïnspekteer word om die voorkoms van onkruidodderweerstandige onkruid betyds op te spoor. Die registrasiehouer en/of verspreider kan nie verantwoordelik gehou word indien onkruid nie beheer word nie weens die opbou van weerstandbiedende onkruid as gevolg van onvoldoende weerstandsbestuurpraktyke. Vir verdere advies oor die voorkoming van onkruidodderweerstandigheid, kom in aanraking met die plaaslike verteenwoordiger of verspreider.

Nota: Sub-standaard toedienings mag lei tot onbevredigende beheer en bydra tot weerstandontwikkeling.

WERKINGSMETODE

Produk inhibeer elektron transportering in die fotosintetiese proses, wat chemiese oksidasie en afbreek van vette en proteïen meebring asook ontwrigting van die ATP (fosforilase)produksie.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

VERENIGBAARHEID

Moet nie **BITRAD IOXYNIL** met bemestingstowwe meng nie.

MENGINSTRUKSIES

Vul die spuittenk met skoon water tot ongeveer die helfte van die vereiste volume.

Voeg dan die vereiste hoeveelheid **BITRAD IOXYNIL** soos hieronder aangedui, by en meng deeglik.

Vul die spuittenk verder met skoon water tot die verlangde spuitvolume.

Dra sorg dat die mengsel deeglik geroer word tydens menging en toediening. Moet nie spuitmengsel oornag laat staan nie.

METODE VAN TOEDIENING

Grondtoediening

Gebruik konvensionele hoëvolume spuittoerusting. Verseker goeie bedekking van onkruid deur ten minste **200 liter spuitmengsel per hektaar** toe te dien.

Vermý gekonsentreerde lae volume toedienings. Die gebruik van lae volume toedieners wat klein druppels lewer nl. newelblasers of lugsak-spuitbalke kan gewasskade tot gevolg hê.

Lugtoediening

Word **NIE** aanbeveel nie.

BITRAD IOXYNIL is op meeste van die belangrike kultivars getoets en geen beduidende gewasskade soos verlaging in opbrengs, is onder normale groeitoestande waargeneem nie. Indien meer sensitiewe kultivars gekommersialiseer en verbou word in die toekoms, moet groot areas nie bespuit word alvorens **BITRAD IOXYNIL** eers daarop getoets is nie. Raadpleeg die registrasiehouer of verspreider indien enige twyfel bestaan.

Verkeerde tyd van toediening in terme van gewasstadium en of oordosisse mag lei tot gewasskade

TOEDIENINGSTABEL

Dit word aanbeveel dat ALLE behandelings hieronder vermeld, voorafgegaan word deur skoonbewerking en/of gebruik van geskikte voorplant/vooropkom onkruidodders.

GEWAS & GROEISTADIUM	DOSIS PER HEKTAAR	OPMERKINGS
UIE Direk gesaai	2,25 l	Dien toe nadat uieplantjies die ware 3- tot 4-blaarstadium bereik het. Lees "BELANGRIKE NOTAS".
Oorgeplante uie	2 tot 2,75 l	Dien toe nadat uieplantjies die ware 3- tot 4-blaarstadium bereik het. Hierdie toediening moet verkieslik volg op 'n skoon bewerking of 'n vooropkom onkruidodderbehandeling wat geregistreer vir gebruik in uie. Lees "BELANGRIKE NOTAS".
KNOFFEL	2 tot 2,75 l	Dien toe na knoffelplantjies die ware 3- tot 4-blaarstadium bereik het. Lees "BELANGRIKE NOTAS".

BELANGRIKE NOTAS

- Onkruid moet in die regte groeistadium wees wanneer bespuit word.**
Onkruid moet reeds ontkiem het en nie groter as die 6-blaarstadium wees nie (probleemonkruid, hieronder vermeld, moet in jong saailingstadium wees).
- Indien 'n tweede ontkieming van onkruid later in die seisoen voorkom, kan **BITRAD IOXYNIL** teen 2 tot 2,75 liter per hektaar toegedien word, afhangende van van onkruidgrootte en handhawing van 70 dae onthoudingsperiode tussen toediening en oes.
- Moet nie **BITRAD IOXYNIL** saam met na-opkomgrasodders in 'n tenkmengsel gebruik nie aangesien dit onaanvaarbare gewasskade tot gevolg mag hê.
- Blaarskroei en groeidistorsie van gewas mag voorkom na toediening van **BITRAD IOXYNIL**. Die fitotoksiese simptome is van tydelike aard en sal nie oesopbrengs beïnvloed nie.
- Ongunstige groeitoestande bv. uiterste koue of hitte, ryp, droogte, versuiping, wind- of sandskade of die teenwoordigheid van insekplae of siektes voor of na toediening, mag gewasskade bevorder. Moet nie **BITRAD IOXYNIL** onder sulke omstandighede toedien nie.
- Moet nie onmiddelik voor sprinkelbesproeiing of reënbuie, spuit nie. Laat 'n afdroogperiode van drie ure toe tussen toediening en besproeiing/reën.

ONKRUIDE WAT DEUR BITRAD IOXYNIL BEHEER WORD

<i>Amaranthus. hybridus</i>	misbredie
<i>Argemone subfusiformis</i>	meksikaanse papawer
<i>Chenopodium album</i>	withondebossie
<i>Chenopodium murale</i>	muurhondebossie
<i>Datura ferox</i>	grootstinkblaar
<i>Galinsoga parviflora</i>	knopkruid
<i>Raphanus raphanistrum</i>	ramenas

Probleemonkruid

Hierdie onkruid sal slegs beheer word deur **BITRAD IOXYNIL** indien gespuit in 'n baie jong saailing- of rosetstadium.

<i>Polygonum aviculare</i>	voëlduisendknop
<i>Emex australis</i>	Kaapse dubbeltjie

NOTA

BITRAD IOXYNIL beheer bogenoemde onkruidspesies. Ander onkruidspesies, wat nie gedurende die ontwikkelingsproewe van hierdie onkruidodder teenwoordig was nie, sal waarskynlik ook beheer word. Die registrasiehouer aanvaar egter nie verantwoordelikheid vir ongelyste spesies nie.