



# BITRAD IOXYNIL

Reg. No. L 9889 Act No. 36 of 1947

Reg. Nr. L 9889 Wet Nr. 36 van 1947

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

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

HRAC HERBICIDE GROUP CODE	C <sub>3</sub> & M	HRAC ONKRUIDODDERGROEPKODE
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#### ACTIVE INGREDIENT

loxynil (nitrile) (as octanoate ester)

..... 225 g/l .....

#### AKTIEWE BESTANDEDEEL

loksinil (nitriël) (as oktanoaatester)

#### NET VOLUME

5 litre

#### NETTO VOLUME

#### REGISTERED BY:/

#### GEREGISTREER DEUR:

BITRAD CONSULTING (PTY) LTD.

Co. Reg. No. 2002/025636/07

PO Box 51454

WIERSDAPARK

0149

#### DISTRIBUTED BY:/

#### VERSPREI DEUR:

**EMERGENCY NUMBER/ NOODNOMMER: 011 805 2000 / 082 446 8946**

UN number/VN-nommer: 1993



#### WARNINGS

- **Withholding period:** Allow a minimum of 70 days between the last application and harvest of onions and garlic.
- Handle with extreme care.
- Toxic when swallowed, inhaled or absorbed through the skin.
- An eye irritant.
- Toxic to fish and water invertebrates.
- Store under lock and key in original container, tightly closed in a cool, dry, well ventilated area away from food and feedstuffs.
- Keep out of reach of children, uninformed persons and animals.
- **FLAMMABLE.** Do not store near open flame.
- **Re-entry:** Do not enter treated area within two days after treatment unless wearing protective clothing.
- Do not apply by means of an airplane.
- **In case of poisoning call a physician and make this label available to him.**
- Incorrect timing of application in terms of crop stage and/or excessive dose rates may damage the crop.

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.

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, compatibility with other substances not indicated on the label and the occurrence of resistance of the 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, and 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.

#### PRECAUTIONS

- Do not inhale fumes or spray mist.
- Avoid eye and skin contact. In case of eye contact, rinse immediately with running water.
- Do not eat, drink or smoke whilst mixing or applying or before washing hands and face and change of clothing.
- Wear protective clothing (overalls, rubber boots and gloves and face shield) when handling, preparing and applying spray mixture.
- Wash contaminated clothing daily.
- Wash thoroughly with soap and water immediately after use or accidental skin contact.
- Prevent drift of spray mist onto other crops, grazing, rivers, dams or areas not under treatment.
- Thoroughly clean all spraying equipment directly after use. Dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
- 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 before destroying the container in the prescribed manner.
- Destroy empty container by perforation and flattening and never use for any other purpose.
- Prevent contamination of food, feed, drinking water and eating utensils.

#### SYMPTOMS OF POISONING

Nausea, vomiting, diarrhoea, small pupils, abdominal cramps, muscular weakness, pulmonary oedema, shock, convulsions.

#### FIRST AID TREATMENT

- Remove patient from source of poisoning.
- Keep patient quiet and reassured.

#### Skin contact

- Remove contaminated clothing and rinse contaminated body area thoroughly with plenty of soap and water.
- Do not rub skin.
- If irritation occurs and persists, call on a physician.

#### Eye contact

- Rinse contamination out of eyes immediately with plenty of clean water for at least 15 minutes lifting eye lids occasionally.
- Remove contact lenses.
- **Obtain medical attention immediately.**

#### If swallowed

#### Ingestion

- Do not induce vomiting.
- Never give anything by mouth to an unconscious person.
- **Obtain medical attention immediately.**

#### If inhaled

- Remove patient to fresh air.
- If breathing is irregular or has stopped, administer artificial respiration, preferably mouth-to-mouth.

- Keep patient warm and at rest.
- **Obtain medical attention immediately.**

**ALWAYS OBTAIN TREATMENT BY A MEDICAL DOCTOR IMMEDIATELY.**

#### NOTE TO PHYSICIAN

No specific antidote known. Administer gastric lavage and symptomatic and supportive treatment e.g., anti-convulsants (barbituates) when necessary.

#### RESISTANCE WARNING

BITRAD IOXYNIL 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 C<sub>3</sub>) and also uncoupling (membrane disruption) (Group Code M). Classified by HRAC as a herbicide belonging to Group Codes C<sub>3</sub> and M. Since BITRAD IOXYNIL has two different modes of action, resistance is less likely to develop than in herbicides with a single mode of action. However, any weed population may contain individuals naturally resistant to BITRAD IOXYNIL and other group code C<sub>3</sub> and 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 IOXYNIL or any other group code C<sub>3</sub> and M herbicides.

To delay weed 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.

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

Since the presence of resistant weeds is difficult to detect prior to herbicide application, it is of the utmost importance that treated areas be inspected at regular intervals to identify the occurrence of herbicide-resistant weeds timeously. The registration holder and/or distributor can not accept liability for performance failures in the event of a build-up of resistant weeds resulting from inadequate resistance management practices. For further advice on the prevention of herbicide resistance, contact the local representative or distributor.

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

#### DIRECTIONS FOR USE

Use only as directed.

#### COMPATIBILITY

Do not mix BITRAD IOXYNIL with fertilizers.

#### MIXING INSTRUCTIONS

Fill the spray tank with clean water to approximately half the required volume of water. Then add the required quantity of BITRAD IOXYNIL as recommended below and mix thoroughly. Top up with clean water to the required spray volume. Ensure that the mixture is thoroughly mixed during mixing and application. Do not allow the mixture to stand overnight.

#### METHOD OF APPLICATION

#### Ground application

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

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

#### Aerial application

**NOT** recommended.

#### APPLICATION TABLE

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

CROP & GROWTH STAGE	DOSE RATE PER HECTARE	REMARKS
<b>ONIONS</b> Directly seeded	2,25 l	Apply after the onion plants have developed 3 to 4 true leaves.  See also "IMPORTANT NOTES"
	2 to 2,75 l	Apply when the transplanted onions have become well established.  See also "IMPORTANT NOTES")"
<b>GARLIC</b>	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>A. hybridus</i>	pigweed
<i>Argemone subfusiformis</i>	white flowered Mexican poppy
<i>Chenopodium album</i>	white goosefoot
<i>C. 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**

- Onthoudingsperiode:** Laat 'n minimum van 70 dae tussen laaste toediening en oes van knoffel en uie, toe.
- Hanteer uiters versigtig.
- Gigtig wanneer ingesluk, ingeasem of deur velopname.
- 'n Oogirritant.
- Giftig vir visse en waterinvertibrata.
- Bêre agter slot en grendel in oorspronklike houer dig verseël in 'n koel, droë. goed geventileerde plek weg van voedsel en voer.
- Hou buite bereik van kinders, ongeligte persone en diere.
- VLAMBAAR.** Bêre weg van oop vlamme.
- Herbetreding:** Moet nie behandelde gebied binne twee dae na bespuiting betree nie tensy beskermende oorklere gedra word.
- Moet nie deur middel van 'n vliegtuig toedien nie.
- In die geval van vergiftiging, neem die persoon onmiddelik na die naaste geneesheer en stel hierdie etiket aan hom beskikbaar.**
- Verkeerde tyd van toediening in terme van gewasstadium en of oordosisse mag lei tot gewasskade.

**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.

**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 onkruidе 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.**

**VOORSORGMATREËLS**

- Moenie dampe of spuitnewel inasem nie.
- Voorkom aanraking met vel en oë. In geval van aanraking met oë, spoel onmiddelik met lopende water.
- Moet nie eet, drink of rook tydens of toediening of voordat hande en gesig gewas en ander klere aangetrek is nie.
- Dra beskermende klere (oorpak, rubberhandskoene en -stewels en gesigskerm) tydens voorbereiding en toediening van die spuitmengsel.
- Was besoedelde klere daagliks.
- Was deeglik met seep en water onmiddelik na gebruik en in die geval van toevallige velkontak.
- Voorkom wegdrywing van spuitnewel na ander gewasse, weiding, riviere, damme en areas nie onder behandeling nie.
- Maak toedieningsapparaat deeglik skoon direk na gebruik. Raak ontslae van waswater waar dit nie gewasse, weiding, riviere en damme sal besoedel nie.
- 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.
- Vernietig leë houer deur gate daarin te maak en plat te slaan. Moet nie die leë houer vir enige ander doel gebruik nie.
- Voorkom besoedeling van voedsel, voer, drinkwater en eetgerei.

**SIMTOME VAN VERGIFTIGING**

Naarheid, braking, diarree, vernoude pupille, maagkrampe, spierswakheid, longendeem, skok, stuiptrekkings.

**NOODHULPBEHANDELING**

- Verwyder pasiënt van die oorsaak van vergiftiging na 'n koel en goed geventileerde area.
- Stel pasiënt gerus en hou hom stil.

**Velkontak**

- Verwyder besoedelde klere en spoel die besmette liggaamsdele deeglik met baie seep en water.
- Moet nie die vel hard vryf nie.
- Spreek 'n geneesheer indien velirritasie voorkom en voortduur.

**Oogkontak**

- Spoel besmette oë onmiddelik met volop skoon water vir minstens 15 minute uit en lig ooglede af en toe.
- Verwyder kontaklense.
- Kry mediese hulp onmiddellik.**

**Indien ingesluk**

- Moet *nie* braking veroorsaak nie.
- Moet nooit iets per mond aan 'n bewustelose persoon toedien nie.
- Kry onmiddelik mediese hulp.**

**Indien ingeasem**

- Verwyder persoon na vars lug.
- Indien asemhaling ongereeld is of opgehou het, pas kunsmatge asemhaling, verkieslik mond-tot-mond, toe.
- Hou pasiënt warm en rustig.
- Kry onmiddelik mediese hulp.**

**KRY ONMIDDELIK BEHANDELING DEUR ’N MEDIESE DOKTER:**

**NOTA AAN GENEESHEER**

Geen spesifieke teenmiddel is bekend nie. Doen 'n maagspoeling en behandel simptomaties en ondersteunend bv. gebruik van barbiturate teen spierspasmus.

**WEERSTANDWAARSKUWING**

**BITRAD IOXYNIL** is ’n lid van die natriel-onkruidoddergroep. Die werkswyse van hierdie groep is deur die inhibering van fotosintese by fotosisteam II (Groepkode C<sub>3</sub>) en ook ontkoppeling (membraanversteuring) (Groepkode M) en deur *HRAC* as ’n onkruiddoder wat aan beide Groepkodes, C<sub>3</sub> en M behoort, geklassifiseer. Aangesien **BITRAD IOXYNIL** twee verskillende werkswyses het, is dit minder waarskynlik dat weerstandigheid teen **BITRAD IOXYNIL** , soos in die geval van onkruiddoders met ’n enkel werkwyse, mag ontwikkel. Desnieteenstaande, kan enige onkruidbevolking individue wat ’n natuurlike weerstand teen **BITRAD IOXYNIL** of enige ander groepkode C<sub>3</sub> en M onkruiddoder het, bevat. Hierdie weerstandbiedende individue kan uiteindelik die onkruidbevolking domineer indien hierdie onkruiddoders herhaadelik gebruik word. Sulke weerstandbiedende onkruidе sal waarskynlik nie deur **BITRAD IOXYNIL** of enige ander groepkode C<sub>3</sub> en M onkruiddoder beheer word nie. Om weerstand teen onkruiddoders te vertraag:

- Vermy die uitsluitlike en herhaalde gebruik van onkruiddoders van dieselfde groepkode.
- Wissel af met, of gebruik tenkmengsels van produkte in verskillende onkruiddodergroepkodes.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in onkruiddoderbeheerprogramme.

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

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

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

**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**

**Grondtoedoening**

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

Verm y 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.

**TOEDIENINGSTABEL**

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

<b>GEWAS &amp; GROEISTADIUM</b>	<b>DOSIS PER HEKTAAR</b>	<b>OPMERKINGS</b>
<b>UIE</b> 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 onkruiddoderbehandeling wat geregistreer vir gebruik in uie.  Lees “BELANGRIKE NOTAS”.
<b>KNOFFEL</b>	2 tot 2,75 ℓ	Dien toe na knoffelplantjies die ware 3- tot 4-blaarstadium bereik het.  Lees “BELANGRIKE NOTAS”.

**BELANGRIKE NOTAS**

- Onkruidе moet in die regte groeistadium wees wanneer bespuit word.** Onkruidе moet reeds ontkiem het en nie groter as die 6-blaarstadium wees nie (probleemonkruidе, hieronder vermeld, moet in jong saailingstadium wees).
- Indien 'n tweede ontkieming van onkruidе later in die seisoen voorkom, kan **BITRAD IOXYNIL** teen 2 tot 2,75 liter per hektaar toegedien word, afhangelnde van van onkruidgrootte en handhawing van 70 dae onthoudingsperiode tussen toediening en oes.
- Moet nie **BITRAD IOXYNIL** saam met na-opkomgrasdoders 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>C. murale</i>	muurhondebossie
<i>Datura ferox</i>	grootstinkblaar
<i>Galinsoga parviflora</i>	knopkruid
<i>Raphanus raphanistrum</i>	ramenas

**Probleemonkruidе**

Hierdie onkruidе 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 onkruiddoder teenwoordig was nie, sal waarskynlik ook beheer word. Die registrasiehouer aanvaar egter nie verantwoordelikheid vir ongelyste spesies nie.