



THIOSTAR

BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

VERWYS NA BESONDERHEDE SOOS OP HOUER / SAK GEDRUK

GEBRUIKSAANWYSINGS INGESLUIT

Lotnummer
Datum van vervaardiging

THIOSTAR

INSECTICIDE

Reg. No. L10069, Act/Wet No./Nr. 36 of 1947

1: 24/06/2016

A suspension concentrate insecticide with residual contact and stomach poison action for the control of the insects as indicated.

'n Suspensiekonsentraat kontakdoder met 'n nablywende kontak- en maaggif werking vir die beheer van die insekte soos aangedui.

IRAC INSECTICIDE GROUP CODE	1A	IRAC INSEKDODER GROEPKODE
ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL		
Thiodicarb (carbamate)	375 g/ℓ	Tiodikarb (karbamaat)

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

5ℓ

HARMFUL / SKADELIK

DIRECTIONS FOR USE ENCLOSED

Batch Number
Date of manufacture

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

WARNINGS

Allow the following number of days between last treatment and harvest, grazing or feeding of the crop:

Cotton.....	21 days
Maize.....	21 days

IMPORTANT: The recommended withholding period between last application and harvest meets local residue requirements, but may not meet export requirements.

- Handle with care.
- Toxic if swallowed, inhaled or absorbed through the skin.
- **Toxic to fish, bees and wildlife. DO NOT** spray directly onto bees or when bees are active in crops. **DO NOT** spray into open blossoms.
- Do not spray over, or allow drift to contaminate, water bodies such as dams, ponds, rivers, streams or fish hatcheries.
- Store under lock and key in a dry, cool place away from food, feeds, seed, fertilizers and sunlight.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry** – Do not enter the treated area within 1 day after treatment, unless wearing protective clothing.
- **In case of poisoning, call a doctor and make this label available to him.**
- **Aerial application:** Notify all inhabitants in the immediate vicinity of the area to be treated and issue the necessary warnings. Do not spray over, or allow drift to contaminate, water or adjacent areas.
- **THIOSTAR** has been tested on some of the most important commercial cultivars without any phytotoxic effects. More susceptible cultivars may be released in future which will need to be tested; for this apply **THIOSTAR** 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 pest 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 fumes or spray mist.
- Avoid skin and eye contact by wearing full protective clothing such as rubber gloves, boots and a face shield when handling the concentrate and diluted product.
- Wash with a non-abrasive soap and water after use and accidental skin contact. Also wash contaminated clothing.
- In case of eye contact, rinse immediately with clean, running 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 spray onto other crops, grazing, rivers, dams and areas not under treatment.
- Clean the applicator after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Triple rinse the empty container in the following manner: Invert the container over the spray tank, or mixing tank, and allow to drain for at least 30 seconds after flow has slowed down 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 or container used for drench application before destroying the container. Do not use the empty container for any other purpose.
- Destroy the empty container by perforation and flattening and dispose of it by burying or burning it.
- Prevent contamination of food, drinking water, feeds and eating utensils.

SYMPTOMS OF HUMAN POISONING

Miosis, Lacrimation, Respiratory paralysis, Bradycardia, Hypotension, Salivation, Bronchial hypersecretion, Nausea, Vomiting, Diarrhoea, Sweating, Fibrillation, Muscle twitching, Myoclonus, Somnolence, Coma, Respiratory failure, Hypothermia, Convulsions.

FIRST AID

Remove the patient from the source of poisoning (to a cool and well-ventilated area) and keep them quiet, calm and reassured. Remove contaminated clothing and rinse the contaminated body area thoroughly with plenty of soap and water. Do not rub the skin. In the case of eye contact, remove any contact lenses and flush contamination out of the eyes with clean, running water or saline solution for at least 20 minutes, holding the eyelids open if necessary. If swallowed, and if the patient is alert and able, induce vomiting by tickling the back part of the throat with your finger. Repeat until the vomit is clear and free of the smell of poison. This must be performed under the direction of medical personnel. Prevent respiratory aspiration. **Seek medical assistance immediately.** Administer artificial or closed chest massage if necessary. Rinse mouth if safe to do so. Check the victim's state of consciousness, breathing and pulse; put in the emergency position or revive.

Do not apply direct mouth-to-mouth respiration. **Never** give anything by mouth to an unconscious person. Call a physician immediately and advise him of the poisoning, or transport the patient to a physician or hospital, whichever is faster. **SHOW THIS LABEL TO THE DOCTOR.**

NOTES TO PHYSICIAN

THIOSTAR (thiodicarb) is an oxime carbamate, which is a cholinesterase inhibitor. Overexposure may cause toxic symptoms as a result of stimulation of the parasympathetic nervous system. These effects are spontaneously and rapidly reversible.

Treatment:

Monitor: Respiratory, cardiac and central nervous system.

Monitor: blood count.

Monitor: red blood cell as well as plasma cholinesterase.

ECG – monitoring (Electrocardiogram)

Oxygen or artificial respiration if needed.

Keep respiratory tract clear.

In the case of ingestion, gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable.

Mild cases may be given 1 to 2 mg atropine sulphate intra-muscularly every 10 minutes until full atropinisation has been achieved, and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until full atropinisation (dry, flushed skin and tachycardia) has been achieved. Dosage rates for children should be appropriately reduced. Complete recovery from exposure can be expected within 24 hours. Pralidoxime (2 PAM, Protopam), and other oximes, are contra-indicated.

However, for exposure to **THIOSTAR** and organophosphorous insecticides, 2 PAM may be used as required to supplement the atropine sulphate treatment as described.

In the case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens.

Contraindications: Oximes (pralidoxime, obidoxime)

RESISTANCE WARNING

For resistance management, **THIOSTAR** is a group code 1A insecticide. Any insect population may contain individuals naturally resistant to **THIOSTAR** and other group code 1A insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **THIOSTAR** or any other group code 1A insecticide.

To delay insecticide resistance:

- Avoid the exclusive repeated use of insecticides from the same insecticide group code. Alternate or tank mix with registered products from different insecticide group codes.

- Integrate other control methods (chemical, cultural, biological) into insect control programmes.
- The choice of products to be used during one growing season should take the resistance strategy into consideration.

Since the occurrence of resistance cannot be forecast, users are advised to keep treated crops under close observation. If treatment is not effective following the use of **THIOSTAR** as recommended, a resistant insect population may be present. If a resistant insect population is positively identified, consideration should be given to prompt use of an insecticide with a different mode of action for which there is no record of resistance to the relevant pest. Meridian Agrochemical Company, trading as Meridian Agritech, will not accept any liability for performance failures in the event of a build-up of resistant insects resulting from inadequate resistance management practices as indicated on the label.

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

MODE OF ACTION

Thiodicarb is a cholinesterase inhibitor. It is an insecticide with predominantly stomach action, but also limited contact action.

USE RESTRICTIONS

- Application of **THIOSTAR** must be based on scouting results. Poor control can be expected if the application is applied when the threshold levels, as indicated below, are exceeded.
- Poor control may be obtained if the larvae have already penetrated into the plant at the time of the application.
- Do not apply **THIOSTAR** to any crop or situation not mentioned in this instruction leaflet.
- Only apply **THIOSTAR** using an accurate and safe application technique.
- If **THIOSTAR** is used in a tank mix with other recommended products, consideration should be given to the restrictions of those respective products.
- 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.

COMPATIBILITY

The full range of the physical compatibility of **THIOSTAR** with other pesticides and fertilizers is not known.

The compatibility of **THIOSTAR** with other products depends on the formulations of the respective products as well as the quality of the spray water to be used. As formulations change from time to time it is recommended that a physical compatibility test be done prior to the tank mixture being made. Do not use mixtures that curdle, precipitate or grease. Tank mixtures should be used within 6 hours after mixing. Do not mix **THIOSTAR** with water if the pH values are below 3.0 or above 8.5. DO not mix with highly alkaline materials (such as hydrated lime or lime sulphur), highly acidic materials, or materials containing metal salts (such as ferric chloride or copper chloride), or with fungicides containing metal salts (such as copper sulphate, manganese and zinc dithiocarbamates or a mixture of both).

MIXING INSTRUCTIONS

Shake the **THIOSTAR** container well before use.

The effectiveness of **THIOSTAR** can be affected by very hard water (> 1000 ppm. solutes), and/or water with a high (above 8.5) or low (below 3.0) pH value.

Use a suitable buffer at the registered rate in order to adjust the pH of the water if it is not in the ideal range. This buffer should be mixed with the water prior to the addition of **THIOSTAR**.

Half-fill the spray tank with suitable water, then add the required amount of **THIOSTAR** to the water in the tank while agitating. Fill the spray tank to the desired volume. Do not use brackish water. Should tank mixtures with other products be made, follow the respective manufacturers' label recommendations. Where wettable powder formulations are used in combination with **THIOSTAR**, a slurry should first be made with the powder and some water, mixed into the spray tank and, finally, the **THIOSTAR** can be

added. **Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank.** Spraying equipment must be thoroughly flushed out at the end of the spraying operation.

APPLICATION METHODS

Ensure thorough coverage and wetting of the crop.

Ensure that the equipment is correctly calibrated and is checked regularly during application to ensure even and accurate application. **Constant agitation throughout the spray operation is essential.** Only clean water should be used.

The efficacy must be monitored within 3 days after application. A further application may be needed if unacceptable levels of control are obtained.

AERIAL APPLICATION

Aerial application may only be done by a registered aerial application operator using a registered and correctly calibrated aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:

Equipment

- Use suitable atomising equipment that will produce the desired droplet size and coverage of the target area and will ensure the minimum loss of product through drift.
- The operator must use a nozzle set-up that will produce a droplet spectrum with the lowest possible relative span.
- All nozzles and atomisers should be positioned within the inner 75% of the wingspan to prevent droplets from entering the wingtip vortices.

Application Parameters

- A minimum volume of 30 ℓ spray mixture per ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy nor be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended.
- A droplet coverage of 30 – 40 droplets per square cm must be recovered at the target.
- A droplet spectrum with a VMD of 250 – 280 micron is recommended. Ensure that the production of fine droplets, with a VMD less than 150 microns, is restricted to a minimum.
- The height of the spray boom should be maintained at between 3 and 4m above the target.
- Do not spray when the aircraft is in a climb, at the top of a turn, during a dive or when banking.

Meteorological Conditions

- The difference between the wet and dry bulb readings, as determined using a whirling hygrometer, must not exceed 8 °C.
- Do not spray under turbulent, unstable conditions or during the heat of the day when rising thermals and downdraughts occur.
- Do not spray under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions as this may cause:
 - i. Reduced efficacy due to suspension and evaporation of small droplets in the air (Which leads to inadequate coverage).
 - ii. Damage to other sensitive crops and/or non-target areas through drifting of the spray cloud away from the targeted area.
- Do not spray when the wind speed exceeds 15 km per hour.

General

- Ensure that fields are accurately marked and that the aerial spray operator knows exactly which fields to spray.
- Obtain an assurance from the aerial spray operator that the above requirements will be met and that the relevant data will be compiled in a logbook and kept for future reference.

RECOMMENDATIONS

CROP	DOSAGE RATE	REMARKS
<p>Maize Stalkborer (<i>Busseola fusca</i>)</p>	<p>Ground application: 6.5 ml / 100 m plant row</p> <p>Aerial application: 800 ml / ha</p>	<p>Maize should be scouted weekly for the early detection of an infestation, from 2 weeks post-emergence up until the tasselling stage. Treat 5 – 7 days after 5% or more of the plants are infested with eggs, or immediately when 5% or more of the plants show symptoms of larvae feeding (shotgun holes) on young, newly emerged leaves. For the best results, apply early in the morning while dew is still present. Windy conditions will adversely affect the coverage and pest control. Do not spray wilted plants.</p> <p>Repeat the application of THIOSTAR when scouting shows this to be necessary, as early plantings often require a second application. Larvae that are larger than 10 mm may not be killed. Larvae that have penetrated the stalk or tassel, at the time of the application, will not be killed.</p> <p>Apply in 3 l water / 100 m plant row and ensure thorough coverage using vertical drop-arms. It is essential that the spray is also directed down the funnel of the crop.</p> <p>Apply in 30 l water / ha. Refer to “AERIAL APPLICATION” above.</p>
<p>Cotton American bollworm</p>	<p>Ground application: 500 ml / 100 l water</p> <p>Aerial application: 1 l / ha</p>	<p>THIOSTAR should be used either weekly, or as a preventative control measure against all bollworm larvae or, alternatively, treatment timing and frequency should be based on weekly scouting of the cotton to determine the pest levels. Apply THIOSTAR if the following counts of any bollworm species are exceeded per 24 randomly scouted plants in fields up to 15 ha in size:</p> <p>American bollworm: 12 eggs or 2 larvae.</p> <p>THIOSTAR is only intended for use during the period of fruiting from peak flowering until boll split, approximately a period of 12 weeks between 10 – 22 weeks after seedling emergence.</p> <p>Apply a suitably registered product for the control of nematodes, thrips, leafhoppers (Jassids), aphids and early season suppression of Red spider mites.</p> <p>Mistblowers and tractor-mounted boom sprayers fitted with hollow cone nozzles: Cotton up to 600 mm tall – apply 100 l spray mixture / ha. Cotton taller than 600 mm – increase the spray volume up to 200 l / ha on fully grown cotton.</p> <p>Apply in 30 l water / ha Refer to “AERIAL APPLICATION” above.</p>

WAARSKUWINGS

Laat die volgende aantal dae toe tussen laaste toediening en oes, beweiding of voer van die gewas:

Katoen.....21 dae
Mielies.....21 dae

BELANGRIK: Die aanbevole onthoudingsperiode tussen laaste toediening en oes voldoen aan die vereistes van plaaslike residuvlakke, maar mag dalk nie aan vereistes vir uitvoer voldoen nie.

- Hanteer versigtig.
- Giftig indien ingesluk, ingesem of deur die vel geabsorbeer word.
- **Giftig vir visse, bye en natuurlewe.** Moenie direk op bye spuit nie; ook nie wanneer bye aktief in die gewas werk nie, of direk op oop bloeisels.
- Moenie bo-oor damme, vleie, riviere, strome of vis-broeiplekke spuit nie of toelaat dat sproeinewel na genoemde plekke oorwaai.
- Berg agter slot en grendel in 'n koel, droë plek, weg van voedsel, voer, saad, kunsmis en sonlig.
- Hou buite bereik van kinders, ongeligte persone en diere.
- **Herbetreding** – Moenie behandelde gebied betree binne 1 dag na die bespuiting nie, tensy beskermende oorklere gedra word.
- **In die geval van vergiftiging, ontbied 'n geneesheer en stel hierdie etiket aan hom/haar beskikbaar.**
- **Lugtoediening:** Stel alle persone in die onmiddellike omgewing van die gebied wat behandel gaan word in kennis en reik die nodige waarskuwings uit. Moenie aangrensende gebiede of waterbronne bespuit of toelaat dat die spoeinewel daarheen oorwaai nie.
- **THIOSTAR** is sonder enige fitotoksiteitskade op die meeste belangrike kommersiële kultivars getoets. Meer sensitiewe kultivars mag in die toekoms vrygestel word en dan moet **THIOSTAR** eers op klein skaal getoets 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 doeltreffendheid daarvan kan beïnvloed word deur faktore soos abnormale grond-, klimaats- en bergingstoestande; kwaliteit van verdunningswater, verenigbaarheid met ander stowwe wat nie op die etiket aangedui word nie en die voorkoms van weerstand van die plaë 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 invloede 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 in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Vermoed die inaseming van dampe en sproeinewel.
- Verhoed vel- en oogkontak deur beskermde klere soos rubberhandskoene, stewels en gesigskerm te dra wanneer die produk hanteer of toegedien word.
- Was met nie-skurende seep en water na gebruik of enige velkontak. Was besoedelde klere.
- In geval van oogkontak, spoel onmiddellik met lopende varswater.
- Moenie eet, drink of rook tydens vermenging of toediening of voordat hande en gesig gewas is en skoon klere aangetrek is nie.
- Verhoed wegdrywing van die sproeinewel na ander gewasse, weidings, riviere, damme of ander gebiede wat nie behandel word nie.
- Maak toerusting voor en na gebruik skoon. Gooi die waswater weg waar dit nie gewasse, weidings, riviere, damme, boorgate of ander waterbronne sal besoedel nie.
- Die leë houer moet driekeer uitgespoel word soos vol: Keer die leë houer oor die spuittenk of mengbak om en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n gedrup verminder het. Spoel die houer daarna driekeer uit met 'n volume water gelykstaande aan 'n minimum van 10% van die houer. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer op die voorgeskrewe wyse vernietig word. Moenie die houer vir enige ander doel gebruik nie.
- Vernietig leë houers deur gate daarin te maak, plat te slaan, en raak ontslae daarvan deur dit te begrawe of te verbrand.
- Verhoed besoedeling van voedsel, drinkwater, voer en eetgerei.

SIMTOME VAN MENSLIKE VERGIFTIGING

Verkleinde oogpupille, Tranerigheid, Respiratoriese verlamming, Lae hartklop, Lae bloeddruk, Speekselvloei, Brongiale hiperafskyding, Naarheid, Braking, Maagwerking, Sweet, Spasmas, Spiersametrekkings, Spiertrillings, Slaperigheid, Koma, Ophou met asemhaling, Lae liggaamstemperatuur, Stuiptrekkings.

NOODHULPBEHANDELING

Verwyder die pasiënt van die bron van vergiftiging na 'n koel geventileerde gebied en hou die persoon stil, kalm en rustig. Verwyder gekontameneerde klere en spoel die gekontameneerde lyfarea deeglik met baie seep en water. Moenie die vel vryf nie. In die geval van oogkontak, verwyder kontaklense en spoel kontaminasie uit die oë met skoon lopende water of 'n soutoplossing vir ten minste 20 minute. Die ooglede kan oopgehou word indien nodig. Indien die produk ingesluk is en die persoon wakker en by sy/haar bewussyn is, induseer braking deur die agterste gedeelte van die keel met jou vinger te prikkel. Herhaal totdat braaksel helder en vry van gifreuk is. Hierdie aksie moet onder aanwysings van mediese personeel geskied. Verhoed dat braaksel in lugpype beland (aspirasie). **Neem pasiënt onmiddellik na die naaste geneesheer.** Indien nodig, pas borsmassering toe. Indien veilig, spoel mond uit. Die pasiënt se bewussynsvlak, asemhaling en polsslag moet voortdurend gemonitor word en indien nodig moet pasiënt bygebring word.

Moet nie mond-tot-mond asemhaling doen nie. **Moet nooit iets per mond** aan 'n bewustelose persoon toedien nie. Kontak 'n geneesheer onmiddellik en beskryf die vergiftiging of neem die pasiënt na 'n geneesheer of hospitaal; watter die vinnigste sal wees. **WYS HIERDIE ETIKET VIR DIE GENEESHEER.**

NOTA AAN GENEESHEER

THIOSTAR (tiodikarb) is 'n oksiemkarbamaat, wat 'n cholinesterase-inhibeerder is. Oormaat blootstelling mag vergiftigingsimptome, as gevolg van die stimulasie van die parasimpatiese senuweestelsel, veroorsaak. Hierdie tekens is spontaan en kan vinnig omgekeer word.

Behandeling

Monitor: Asemhaling-, hart- en sentrale senuweestelsel.

Monitor: bloedtelling/bloedfunksies

Monitor: rooibloedselle en plasma-cholinesterase.

EKG – monitering (Elektrokardiogram)

Indien nodig, dien suurstof of kunsmatige asemhaling toe.

Hou die lugwegkanaal oop.

By mondelingse inname, moet maagspoeling, in gevalle van beduidende innames, tydens die eerste 2 uur oorweeg word. Die toediening van geaktiveerde koolstof en natriumsulfaat word ook aanbeveel.

In matige gevalle kan 1 tot 2 mg atropiensulfaat elke 10 minute binne-spiers toegedien word totdat atropinisasie intree. Herhaal as simptome weer voorkom.

In ernstige gevalle moet 2 tot 4 mg atropiensulfaat elke 10 minute binne-aars toegedien word totdat atropinisasie (droë gloeiende vel, droë mond en tagikardie) intree. Die dosis vir kinders moet dienoooreenkomstig verminder word. Totale herstel behoort binne 24 uur te gebeur. Palidoksiem (2-PAM, Protopam), en ander oksieme is teenaangedui.

Vir blootstelling aan **THIOSTAR** en organofosfaat-insekdoders, kan 2-PAM, soos benodig, bydraend tot die atropiensulfaat-behandeling gebruik word.

Indien stuiptrekkings voorkom, moet 'n benzodiazepien (bv. diazepam), volgens standaard riglyne toegedien word.

Kontra-indikasies: Oksieme (pralidoksiem, obidoksiem)

WEERSTANDSWAARSKUWING

Vir weerstandsbestuur word **THIOSTAR** as 'n Groepkode 1A insekdoder geklassifiseer. Enige populasie van 'n spesifieke insek mag individue insluit wat 'n natuurlike weerstand teen **THIOSTAR** of enige ander Groepkode 1A insekdoder het. Indien hierdie insekdoders herhaaldelik aangewend word, kan die weerstandbiedende individue uiteindelik die insekpopulasie oorheers. Hierdie weerstandbiedende insekte sal moontlik nie deur **THIOSTAR** of enige ander Groepkode 1A insekdoder beheer word nie.

Om weerstand teen insekdoders te vertraag:

- Vermoed die eksklusiewe herhaaldelike gebruik van insekdoders in dieselfde insekdodergroepkode. Wissel af met, of gebruik tenkmengsels van geregistreerde produkte in verskillende insekdodergroepkodes.
- Integreer ander beheermaatreëls (chemies, verbouing, biologies) in insekbeheerprogramme.
- Die keuse van produkte wat gedurende een groeiseisoen gebruik gaan word, moet die weerstandstrategie in ag neem.

Aangesien die voorkoms van weerstandbiedende insekte moeilik is om te bepaal, is dit uiters noodsaaklik dat behandelde gebiede noukeurig ondersoek word. Indien die behandeling nie effektief was met die gebruik van **THIOSTAR** soos aanbeveel nie, mag daar 'n weerstandbiedende populasie teenwoordig wees. Indien so 'n weerstandbiedende populasie positief geïdentifiseer is, moet 'n onmiddellike bespuiting met 'n insekdoder met 'n ander werkswyse, waar daar geen bewys van weerstand teen die insek voorkom, gedoen word. Meridian Agrochemical Company (Edms) Bpk., handelndrywend as Meridian Agritech, sal geen verantwoordelikheid aanvaar vir enige gebrek aan prestasie in die geval van die opbou van weerstand in die insekte as gevolg van onvoldoende weerstandsbestuurspraktyke soos aangedui op die etiket nie.

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

METODE VAN WERKING

Tiodikarb is 'n cholinesterase-inhibeerder. Dit is 'n insekdoder wat hoofsaaklik 'n maaggif-werking asook beperkte kontakwerking het.

GEBRUIKSBEPERKINGS

- Die toediening van **THIOSTAR** berus op verkenningsresultate. Swak beheer kan verwag word indien die drempelwaardes (sien later), oorskry word.
- Swak beheer kan verwag word as die larwe alreeds die plant tydens toediening binnegedring het.
- **Moet nie THIOSTAR** op enige gewas of situasie aanwend wat nie in die voorskrifetiket verskyn nie.
- **THIOSTAR** moet slegs met akkurate en veilige toerusting toegedien word.
- Indien **THIOSTAR** in 'n tenkmengsel met ander aanbevele produkte gebruik word, moet oorweging aan die beperkings van hierdie betrokke produkte geskenk word.
- 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 Agritech verteenwoordiger vooraf geraadpleeg is.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

VERENIGBAARHEID

Die volle reeks plaagdoders en bemestingstowwe waarmee **THIOSTAR** verenigbaar is, is nog nie bekend nie. Die verenigbaarheid van **THIOSTAR** met ander produkte hang van die formulering van die onderskeie produkte, asook van die kwaliteit van die tenkwat af. Deurdat formulering van tyd tot tyd verander, word dit aanbeveel dat fisiese verenigbaarheidstoetse gedoen word, alvorens tenkmengsels opgemaak word. Moenie mengsels gebruik wat dik word, 'n neerslag vorm of vetterig voorkom nie. Tenkmengsels moet binne 6 ure na vermenging gebruik word. Moenie **THIOSTAR** met water met 'n pH waarde onder 3,0 of bokant 8,5 meng nie. **THIOSTAR** moet nie met hoogs alkaliese middels (bv. gebluste kalk en kalkswael), hoogs suuragtige middels of middels wat metaalsoute (bv. ysterchloried of koperchloried) bevat of met swamdoders wat metaalsoute bevat (soos kopersulfaat, mangaan- en sinkditiokarbamaat of 'n mengsel van beide), vermeng word nie.

MENGINSTRUKSIES

Skud die **THIOSTAR** houer deeglik voor gebruik.

Die doeltreffendheid van **THIOSTAR** kan deur baie harde water (> 1000 d.p.m. opgeloste stowwe), en/of water met 'n hoë pH (bokant 8.5) of lae pH (onder 3.0) beïnvloed word.

Gebruik 'n geskikte buffer teen die geregistreerde dosis om die pH van die water aan te pas indien dit nie in die ideale reeks is nie. Meng die buffer met die water voordat **THIOSTAR** bygevoeg word.

Vul die spuittenk halfvol met skoon water. Voeg nou die verlangde hoeveelheid **THIOSTAR** in die spuittenk terwyl dit geroer word. Maak nou die spuittenk tot die verlangde hoeveelheid vol. Moet nie brakwater gebruik nie. Indien tenkmengsels met ander produkte gemaak word, moet die etiket-aanbevelings van die onderskeie vervaardigers gevolg word. Indien formulering van benatbare poeier saam met **THIOSTAR** gebruik word, moet 'n smeersel van die poeier en 'n bietjie water gemaak word. Gooi dit eerste in die tenk en die **THIOSTAR** heel laaste in. **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om in die spuittenk te staan nie.** Spuittoerusting moet na gebruik deeglik skoongespoel en gewas word.

TOEDIENINGSMETODES

Verseker deeglike bedekking en benatting van die gewas.

Verseker dat die spuittoerusting korrek gekalibreer is en dat dit gereeld gedurende die spuitproses nagegaan word. **Dit is belangrik dat roering deurgaans gedurende die spuitproses plaasvind.** Slegs skoonwater moet gebruik word.

Die effektiwiteit van die behandeling moet binne 3 dae na toediening bepaal word. 'n Verdere behandeling mag nodig wees indien onvoldoende beheer verkry is.

LUGTOEDIENING

Lugtoediening mag slegs deur 'n geregistreerde lugbespuitingsoperateur met 'n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SANS Kode 10118 (Aerial Application of Agricultural Remedies) gedoen word. Dit is belangrik om te verseker dat die spuitmengsel eweredig oor die teikenarea versprei word en dat die verlies aan spuitmengsel tydens toediening tot 'n minimum beperk word. Dit is dus belangrik om aan die volgende kriteria te voldoen:

Toerusting

- Gebruik geskikte atomiseringsapparaat wat die vereiste druppelgrootte en bedekking sal produseer, maar wat die minste verlies van produk deur wegdrywing sal verseker.
- Die operateur moet 'n spuitkopstelsel opstel wat 'n druppelspektrum met die kleinste moontlike relatiewe span sal produseer.
- Al die spuitkoppe en atomiseerders moet in die binneste 75% van die vlerkspan geplaas word om te verhoed dat die druppels binne-in die vlerkvorteks beweeg.

Toedieningsparameters

- 'n Minimum volume van 30 l spuitmengsel per hektaar word aanbeveel. Aangesien hierdie produk nie teen 'n verlaagde volume getoets is nie, kan die registrasiehouer nie effektiwiteit waarborg, of verantwoordelik gehou word vir enige nadelige effek indien hierdie produk teen 'n laer volume as hierbo aanbeveel, uit die lug toegedien word nie.
- 'n Druppelbedekking van 30-40 druppels per vierkante cm moet op die teikenarea herwin word.
- 'n Druppelspektrum met 'n VMD van 250-280 mikron word aanbeveel. Verseker dat die produksie van fyn druppels (kleiner as 150 mikron) tot 'n minimum beperk word.
- Die hoogte van die spuitbalk moet op 3-4 meter bokant die teiken gehandhaaf word.
- Moet nie spuit wanneer die vliegtuig besig is om te klim, te draai, te duik, of terwyl dit uitklim nie.

Meteorologiese toestande

- Die verskil tussen die nat- en droëbollesing, soos met 'n swaaihygrometer bepaal, moet nie 8°C oorskry nie.
- Moenie tydens turbulente, onstabiele en droë toestande, of gedurende die hitte van die dag wanneer stygende en dalende konveksie-windbewegings plaasvind, toedien nie.
- Moenie tydens temperatuurinversie-toestande (deur bokant of binne-in die inversie laag te spuit) en/of gedurende hoë humiditeitstoestande toedien nie, aangesien dit kan lei tot:
 - iii. Verlaagde effektiwiteit a.g.v. suspensie of verdamping van klein druppels in die lug (wat tot onvoldoende bedekking op teiken lei).
 - iv. Skade aan ander sensitiewe gewasse en/of nie-teikenareas deur wegdrywing van die spuitwolk vanaf die teikenarea.
- Moet nie spuit wanneer die windspoed 15 km per uur oorskry nie.

Algemeen

- Verseker dat die lande akkuraat gemerk is en dat die spuitoperateur presies weet watter lande bespuit moet word.
- Verkry 'n versekering van die lugbespuitingsoperateur dat daar aan die bogenoemde vereistes voldoen sal word en dat die betrokke data in 'n logboek vir toekomstige verwysing saamgevat sal word.

AANBEVELINGS

GEWAS	DOSIS	OPMERKINGS
<p>MIELIES Mieliestronkboorder (<i>Busseola fusca</i>)</p>	<p>Grondtoediening: 6.5 ml/100 m plantry</p> <p>Lugtoediening: 800 ml/ha</p>	<p>Vanaf 2 weke na opkoms tot en met pluimvorming moet mielies elke week verken word om vroeë eier en larwe besmettings betyds op te merk.</p> <p>Behandel 5 - 7 dae nadat 5% of meer plante besmet is met eiers of sodra 5% of meer plante "haelskade" toon, klein deursigtige kolle (vensters) op die jongste blare. Vir die beste resultate is dit wenslik om vroeg in die oggend te spuit terwyl die plante nog nat van die dou is. Winderige toestande het 'n nadelige uitwerking op bedekking en plaagbeheer. Moenie verwelkte plante bespuit nie.</p> <p>Herhaal THIOSTAR bespuiting wanneer verkenning dit weer later in die groeiseisoen sou uitwys; veral vroeë aanplantings kan 'n tweede bespuiting benodig. Larwes langer as 10 mm of larwes wat alreeds die stam of pluim binnegedring het, sal nie gedood word nie.</p> <p>Dien toe in 3 l water/100 m plantry. Verseker deeglike bedekking deur gebruik te maak van vertikale valarms. Dit is belangrik dat die spuitstof ook direk in die kelke van die plante gespuit word.</p> <p>Dien toe in 30 l water/ha. Verwys na "LUGTOEDIENING".</p>
<p>KATOEN Amerikaanse bolwurm</p>		<p>THIOSTAR moet weekliks as 'n voorkomende beheermaatreël teen bolwurmlarwes aangewend word, of anders moet bespuiting gebaseer word op gereelde weeklikse verkenning. Dien THIOSTAR toe indien daar meer as 12 eiers of 2 larwes van Amerikaanse bolwurm per 24 plante (na willekeur gekies) op lande tot 15 Ha groot voorkom.</p> <p>THIOSTAR behoort slegs gebruik te word gedurende die tydperk van vrugvorming vanaf spits blomtyd tot bolbars, d.w.s. gedurende die periode 10 tot 22 weke na plant-opkoms.</p> <p>Dien 'n geskikte geregistreerde produk toe vir die beheer van aalwurms, blaaspootjies,</p>

	<p>Grondtoediening: 500 mℓ /100 ℓ water</p> <p>Lugtoediening: 1 ℓ/ha</p>	<p>bladspringers, plantluise en vroeë seisoen onderdrukking van rooispinmyte.</p> <p>Newelblasers asook trekker-gemonteerde spuitbalke met holkeëlsuite:</p> <p>Katoenplante kleiner as 600 mm – dien 100 ℓ spuitmengsel/ha toe. Katoenplante groter as 600 mm – verhoog die spuitvolume na 200 ℓ/ha vir volgroeide katoenplante</p> <p>Dien toe in 30 ℓ water/ha. Verwys na “LUGBESPUITING”.</p>
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