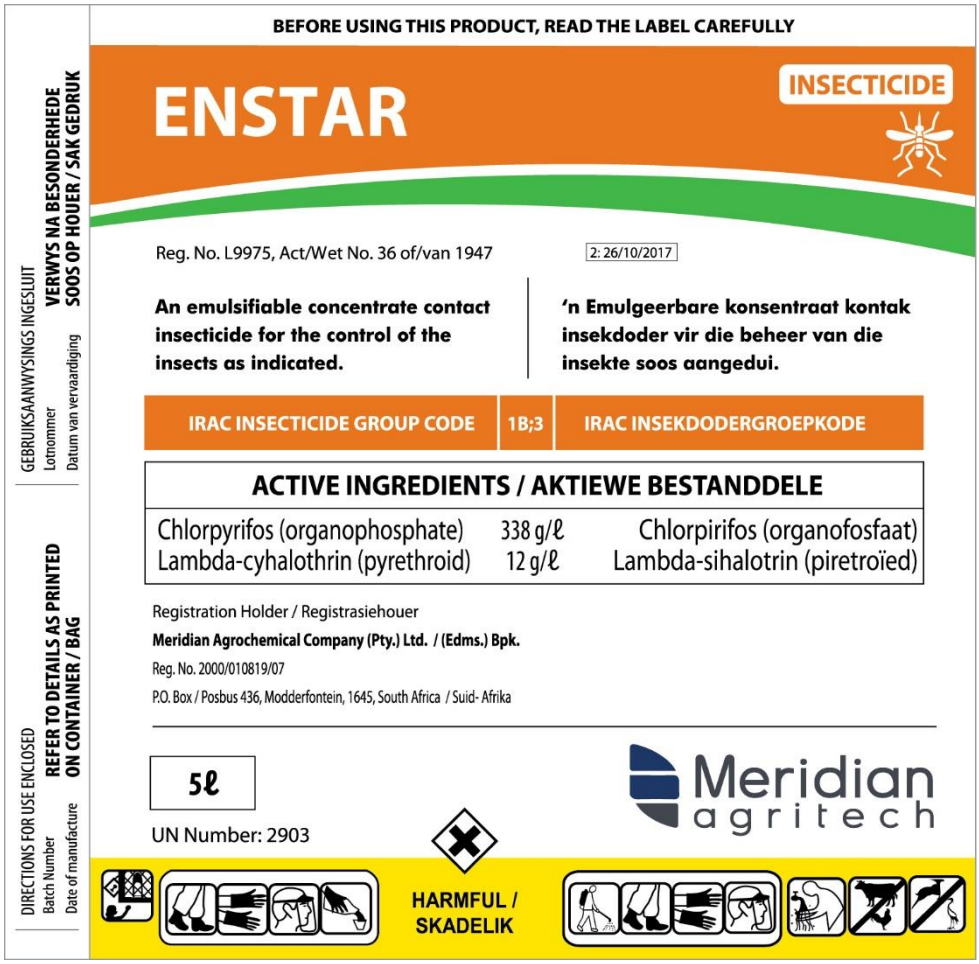
ENSTAR



BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

ENSTAR

INSECTICIDE

Reg. No. L9975, Act/Wet No. 36 of/van 1947

2: 26/10/2017

An emulsifiable concentrate contact insecticide for the control of the insects as indicated.

'n Emulgeerbare konsentraat kontak insekdoder vir die beheer van die insekte soos aangedui.

IRAC INSECTICIDE GROUP CODE	1B;3	IRAC INSEKDODERGROEPKODE

ACTIVE INGREDIENTS / AKTIEWE BESTANDDELE		
Chlorpyrifos (organophosphate)	338 g/ℓ	Chlorpirifos (organofosfaat)
Lambda-cyhalothrin (pyrethroid)	12 g/ℓ	Lambda-sihalotrin (piretroïed)

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

UN Number: 2903

HARMFUL / SKADELIK

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

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

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

Maize.....32 days
Canola……..…28 days
Wheat and Barley……..……35 days

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

- Handle with care.
- Harmful if swallowed and moderately toxic if inhaled or absorbed through the skin.
- Skin and eye irritant.
- Marine pollutant.
- **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.
- Do not allow spray to drift to citrus orchards under integrated biological control for Red scale.
- Store under lock and key in a dry, cool place at temperatures not exceeding 60 °C away from food, feeds, seed, fertilizers and sunlight.
- Keep out of reach of children, uninformed persons and animals.
- **Flammable –** Do not store or open container near open flame or sources of ignition.
- **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.
- **ENSTAR** 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 **ENSTAR** 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 and boots and a face shield when handling the concentrate and dilute product.
- Wash with a non-abrasive soap and water after use and accidental skin contact. Also wash contaminated clothing.
- 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 30% 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 safely.

- Prevent contamination of food, drinking water, feeds and eating utensils.

SYMPTOMS OF HUMAN POISONING

- **Lambda-cyhalothrin** may cause burning, tingling or itching of the skin. These symptoms should readily disappear within 24 hours after exposure. Inhalation causes nasal discharge, scratchy throat, ataxia, convulsions and tremors.

- Symptoms associated with **chlorpyrifos** may include headache, faintness, fatigue, giddiness, excessive sweating, salivation, nausea, abdominal pains, vomiting, diarrhoea, confusion, ataxia, slurred speech, loss of reflexes, and small pupils.

  Following inhalation of vapours, effects appear within minutes and may include: Ocular and respiratory effects, miosis, ocular pain, conjunctival congestion, diminished vision, brow ache and ciliary spasm.

  Acute systemic absorption: Rhinorrhea, hyperaemia of upper respiratory tract, tightness in the chest as well as wheezing respiration.

  Severe intoxication: Symptoms may include salivation, involuntary defecation and urination, lacrimation, sweating, penile erection, hypotension and bradycardia.

FIRST AID

- **Inhalation:** Remove the patient from the source of poisoning to fresh air and keep him / her calm, warm and at rest. Seek medical assistance if necessary.
- **Skin contact:** Remove contaminated clothing, shoes and leather items. Rinse contaminated body area thoroughly with plenty of soap and cold water. Do not rub the skin. Apply olive oil to the affected areas in order to relieve burning skin. Seek medical assistance if irritation occurs and persists.
- **Eye contact:** Flush contamination out of eyes with clean running water for at least 15 – 20 minutes holding the eyelid/s open. Seek medical assistance if irritation occurs and persists.
- **Ingestion:** If a water diluted mixture was ingested, rinse the mouth thoroughly with water if the patient is alert and able. **Never give anything by mouth to an unconscious person. Do not induce vomiting**. Administer artificial respiration or closed chest cardiac massage if needed. **Do not** apply direct mouth – to – mouth respiration. **Seek medical assistance immediately.**

NOTE TO PHYSICIAN

Chlorpyrifos:
Administer atropine as early as possible in an adequate dosage, until the signs of atropinisation (dry, flushed skin, tachycardia and pulse rate over 120 beats per minute) occur.
In order to prevent gastrointestinal absorption in the unconscious person that has swallowed this product, perform gastric lavage using a bicarbonate solution and activated charcoal. In less severe cases, begin with 2 mg atropine intravenously for adults or 0.05 mg atropine / kg body weight for children under 12 years of age, and repeat the administration of atropine at 15 – 30 minute intervals.

Note: Morphine (and similar drugs), phenothiazines, reserpine and theophylline are contraindicated. Avoid aminoglycosides and succinylcholine.

Lambda-cyhalothrin
There is no known antidote available. Treat symptomatically and supportively.

RESISTANCE WARNING

For resistance management, **ENSTAR** is a group code 3 and 1B insecticide. Any insect population may contain individuals naturally resistant to **ENSTAR** and other group code 3 and / or 1B insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **ENSTAR** or any other group code 3 or 1B 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 **ENSTAR** 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.

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

MODE OF ACTION

Chlorpyrifos is a cholinesterase inhibitor, and is a non-systemic insecticide with contact, stomach, and respiratory action.

Lambda-cyhalothrin acts on the nervous system of insects, and disturbs the function of neurons by interaction with the sodium channel. Lambda-cyhalothrin is a non-systemic insecticide with contact and stomach action, and repellent properties. It gives rapid knockdown and long residual activity.

USE RESTRICTIONS

- Application of **ENSTAR** 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 **ENSTAR** to any crop or situation not mentioned in this instruction leaflet.
- Only apply **ENSTAR** using an accurate and safe application technique.
- If **ENSTAR** 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 compatibility of **ENSTAR** 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 mix **ENSTAR** with seaweed extracts, Amitraz, Chinomethionat and Prothiofos.
Flocculation occurs when **ENSTAR** is mixed with wettable powder formulations in a tank mixture.

MIXING INSTRUCTIONS

- Half fill the spray tank with clean water.
- Shake the **ENSTAR** container well before use.
- The effectiveness of **ENSTAR** can be affected by very hard water (> 1000 ppm solutes), and/or water with a high or low 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. This buffer should be mixed with the water prior to the addition of **ENSTAR**.
- Take approximately 10 litres of this pH-corrected water from the mixing tank and thoroughly mix the required volume **ENSTAR** therewith.
- If any other product is to be mixed with **ENSTAR**, the required volume of this product must be pre-mixed in a similar way.
- Agitate the water in the spray tank and then add the product(s) to the tank in the following sequence (as applicable): Buffer, suspension concentrate, water-soluble concentrate, emulsifiable concentrate.
- Fill the spray tank with water to the required level while maintaining agitation, to ensure thorough mixing.

- 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

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 60-75% 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 microns 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 or 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 ºC.
- 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
Canola African bollworm (*Helicoverpa armigera*)	500 mℓ / ha	Refer to "**RESISTANCE WARNING**" **Ground or Aerial application:** Apply at first signs of infestation and ensure good coverage. Add a suitable surfactant. Repeat if required.
Maize Stem borer (*Chilo partellus*)	5.0 mℓ / 100 m row	**Ground application:** Apply **ENSTAR** preventatively if a severe infestation is expected. Alternatively, spray correctively before, or up to, a maximum of not more than 5% of plants showing very early stage "shot hole" damage. Direct the application into the plant funnel. A follow-up application may be required 10 – 12 days later, especially if the larvae are larger than 10 mm in length or if a re-infestation occurs, shortly before tasselling.
Stalkborer (*Busseola fusca*) First and second generation	5.0 mℓ / 100 m row (500 mℓ / ha)	Apply **ENSTAR** as soon as eggs are found on 5% of the plants or when 10% of the plants show damage. A second application may be required 10 – 14 days later. Direct the application into the plant funnel. Use at least 3 ℓ of water per 100 m row.
Wheat and Barley African bollworm (*Helicoverpa armigera*)	500 mℓ / ha	Refer to "**RESISTANCE WARNING**" Apply as soon as an infestation is noticed and repeat if required. **Ground application:** Apply in 250 to 500 litres of water per hectare and ensure thorough wetting of the crop. **Aerial application:** Apply in at least 30 litres of water per hectare.

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

Mielies……32 dae
Canola……28 dae
Koring en Gars……..…35 dae

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

- Hanteer versigtig.
- Skadelik indien ingesluk en matig giftig indien ingeasem of deur die vel geabsorbeer word.
- Veroorsaak irritasie in geval van kontak met vel en oë.
- Giftig vir seelewe.
- **Giftig vir visse, bye en wildlewe**. **MOENIE** direk op bye spuit of wanneer bye aktief in die gewasse werk nie. **MOENIE** in oop bloeisels spuit nie.
- Moet nie bo-oor watermassas soos damme, poele, riviere, strome of visteeldamme spuit nie, of toelaat dat wegdrywing van die spuitstof dit besoedel nie.
- Moenie toelaat dat spuitnewel wegdryf na sitrusboorde onder geïntegreerde biologiese beheer vir Rooidopluis nie.
- Berg agter slot-en-grendel in 'n droë, koel plek by temperature wat nie 60 °C oorskry nie, weg van voer, saad, kunsmis en sonlig.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Vlambaar** – moet nie berg of houer oopmaak naby oop vlamme of naby bron van ontbranding nie.
- **Herbetreding** - Moenie die behandelde gebied binne 1 dag na die bespuiting betree nie, tensy beskermende oorklere gedra word.
- **In geval van vergiftiging ontbied 'n geneesheer en toon hierdie etiket aan hom/haar.**
- **Lugtoediening:** Stel alle inwoners in die onmiddellike omgewing van die gebied wat gespuit word in kennis en reik die nodige waarskuwings uit. Moenie oor water of gebiede wat nie onder behandeling is spuit nie, of toelaat dat die spuitnewel na hierdie gebiede oorwaai.
- **ENSTAR** 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 **ENSTAR** 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 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 is nie en die voorkoms van weerstand van die plaag teen die betrokke middel, sowel as deur 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 versuim van die gebruiker om die etiketaanwysings na te kom, of om die voorkoms van toestande te aanvaar wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moet nie dampe of spuitnewel inasem nie .
- Vermy vel en oogkontak deur die dra van beskermende oorklere soos rubberhandskoene en stewels en 'n gesigskerm wanneer die konsentraat en verdunde produk hanteer word.
- Was met 'n nie-skurende seep en water na gebruik en na toevallige velkontak. Was ook die besoedelde klere.
- 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.
- Voorkom wegdrywing van spuitnewel na ander gewasse, weiding, riviere, damme en areas wat nie onder behandeling is nie.
- Maak toedieningsapparaat skoon na gebruik. Raak ontslae van die spoelwater waar dit nie gewasse, weiding, riviere, damme en boorgate sal besoedel nie.
- Die leë houer moet drie keer uitgespoel word op die volgende wyse: Keer die houer om oor die spuittenk of mengbak en dreineer vir minstens 30 sekondes nadat die vloei afgeneem het tot op 'n drup. Spoel daarna die leë houer drie keer uit met 'n volume water gelykstaande aan 'n minimum van 30 % van die houer. Gooi die spoelwater by die inhoud van die spuittenk, of houer wat vir

deurdrenking gebruik word, voordat die houer vernietig word. Moet nie die leë houer vir enige ander doel gebruik nie.
- Vernietig die leë houer deur gate in te druk en die houer plat te druk, en daarmee op ‘n veilige manier weg te doen.
- Voorkom besoedeling van voedsel, drinkwater, voer en eetgerei .

SIMPTOME VAN MENSLIKE VERGIFTIGING

- Lambda-sihalotrin mag brand, jeukerigheid of prikkende sensasies van die vel veroorsaak. Hierdie simptome behoort binne 24 uur na blootstelling te verdwyn. Inaseming veroorsaak neusvloeiing, krapperige keel, gebrekkige spierkoördinasie, stuiptrekkings en spiertrillings.

- Simptome wat verband hou met **chlorpirifos** kan hoofpyn, flouheid, moegheid, duiseligheid, oormatige sweet, speekselvloei, naarheid, buikpyn, braking, diarree, verwarring, gebrekkige spierkoördinasie, belemmerde spraak, verlies van reflekse en verkleinde pupille insluit.

- Na inaseming van dampe, sal simptome binne minute verskyn en kan die volgende insluit: oog en respiratoriese simptome, miose, oogpyn, kongestie van die oogslymvliese, verminderde visie, pyn van die wenkbroue en ooglidspasma.

  Akute sistemiese absorpsie: afskeiding uit die neus, hiperemie van die boonste lugweë, benoudheid in die bors asook hygende asemhaling.

  Ernstige vergiftiging: Simptome kan speekselvloei, onwillekeurige defekasie en urinering, sweet, traanvloei, ereksie, hipotensie en bradikardie insluit.

NOODHULPBEHANDELING

- **Inaseming:** Verwyder die pasiënt van die bron van vergiftiging na vars lug en hou hom/haar kalm, warm en rustig. Kry mediese hulp indien nodig.
- **Velkontak:** Verwyder besoedelde klere, skoene en leeritems. Spoel die besmette liggaamsdele deeglik met baie seep en koue water af. Moet nie die vel vryf nie. Smeer olyfolie aan die geaffekteerde gebiede ten einde brandende vel te verlig. Kry mediese hulp indien irritasie voortduur.
- **Oogkontak:** Spoel gekontamineerde oë uit met skoon lopende water vir ten minste 15 - 20 minute terwyl ooglede oop is. Kry mediese hulp indien irritasie voortduur.
- **Ingesluk:** Indien 'n water verdunde mengsel ingeneem is, spoel die mond deeglik uit met water indien pasiënt wakker en daartoe instaat is. **Moet nooit enige iets per mond aan 'n bewustelose persoon gee nie. Moet nie braking induseer nie.** Pas kunsmatige asemhaling of geslote hartmassering toe indien nodig. **Moet nie** direkte mond-tot-mond asemhaling toepas nie**. Kry onmiddellik mediese hulp.**

NOTA AAN GENEESHEER

Chlorpirifos:
Dien atropien so spoedig as moontlik toe met voldoende dosis totdat die eerste tekens van atropinisasie (droë, gloeiende vel, tagikardie en pols van hoër as 120 slae per minuut) verskyn.
Om gastro-intestinale absorpsie in die bewustelose persoon wat hierdie produk ingesluk het te voorkom, doen ‘n maagspoeling met behulp van koeksoda en geaktiveerde houtskool. In minder ernstige gevalle, moet met 2 mg atropien binne-aars vir volwassenes of 0.05 mg atropien/kg liggaamsmassa vir kinders onder 12 jaar oud begin word, en herhaal die toediening van atropien met 15-30 minute tussenposes.

Let wel: Morfien (en soortgelyke middels), fenotiasiene, reserpien en teofillien is kontra-indikasies. Vermy aminoglikosiede en suksinielcholien.

Lambda-sihalotrin:
Daar is geen bekende teenmiddel beskikbaar nie. Behandel simptomaties en ondersteunend.

WEERSTANDSWAARSKUWING

Vir weerstandsbestuur is **ENSTAR** 'n groepkode 3 en 1B insekdoder. Enige insekpopulasie mag individue insluit wat 'n natuurlike weerstand teen **ENSTAR** of enige ander groepkode 3 en/of 1B insekdoder het. Die weerstandbiedende individue kan uiteindelik die insekpopulasie oorheers indien hierdie insekdoders herhaaldelik aangewend word. Hierdie weerstandbiedende insekte sal waarskynlik nie deur **ENSTAR** of enige ander groepkode 3 of 1B insekdoder beheer word nie.

Om weerstand teen insekdoders te vertraag:

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

Aangesien die voorkoms van weerstand nie voorspel kan word nie, word gebruikers aangeraai om behandelde gewasse noukeurig dop te hou. Indien die behandeling met **ENSTAR** soos aanbeveel nie doeltreffend was nie, mag ‘n weerstandbiedende populasie teenwoordig wees. Indien ‘n weerstandbiedende populasie positief geïdentifiseer word, moet daar onmiddellik oorweging geskenk word aan die gebruik van ‘n insekdoder met ‘n ander metode van werking, waarvan daar geen rekord van weerstand teen die betrokke plaag is.

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

METODE VAN WERKING

Chlorpirifos is 'n cholienesterase-inhibeerder en is 'n nie-sistemiese insekdoder met kontak, maag, en respiratoriese werking.

Lambda-sihalotrin tree op in die senuweestelsel van insekte en versteur die neuronfunksie deur die interaksie met die natriumkanaal. Lambda-sihalotrin is 'n nie-sistemiese insekdoder met kontak-en maagwerking, en afwerende eienskappe. Dit gee 'n vinnige uitklopaksie en lang nawerking.

GEBRUIKSBEPERKINGS

- Toediening van **ENSTAR** moet op verkenningsresultate gebaseer word. Swak beheer kan verwag word indien die toediening gemaak word wanneer die drempelvlakke, soos hieronder aangedui, oorskry word.
- Swak beheer kan verkry word indien die larwes alreeds die plant binnegedring het ten tye van toediening.
- Moet **ENSTAR** nie op enige gewas of situasie wat nie op hierdie etiket verskyn toedien nie.
- Dien **ENSTAR** slegs met akkurate en veilige toedieningsmetodes toe.
- As **ENSTAR** in 'n tenkmengsel met ander aanbevole produkte gebruik word, moet oorweging geskenk word aan die beperkings van daardie betrokke produkte.
- Moet nie hierdie produk in kombinasie of tenkmengsel met enige ander produk of landboumiddel, wat nie spesifiek op hierdie etiket gelys is, toedien 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.

VERENIGBAARHEID

Die verenigbaarheid van **ENSTAR** met ander produkte hang van die formulering van die betrokke produkte af, asook van die kwaliteit van die spuitwater wat gebruik sal word. Deurdat formulerings van tyd tot tyd verander, word dit aanbeveel om 'n fisiese verenigbaarheidstoets te doen alvorens die tenkmengsel gemaak word.
Moet nie **ENSTAR** met seewierekstrakte, Amitras, Chinometionat en Prothiofos meng nie.
Flokkulasie vind plaas wanneer **ENSTAR** met benatbare poeier formulerings in 'n tenkmengsel gemeng word.

MENGINSTRUKSIES

- Maak die spuittenk halfvol met skoon water.
- Skud die **ENSTAR** houer deeglik voor gebruik.
- Die effektiwiteit van **ENSTAR** kan benadeel word deur baie harde water (> 1000 dpm opgeloste stowwe) en/of water met 'n hoë of lae pH-waarde.
- Gebruik 'n geskikte buffer teen die geregistreerde dosis om die pH van die water aan te pas indien dit nie ideaal is nie. Die buffer moet voor die byvoeging van **ENSTAR** met die water gemeng word.
- Neem ongeveer 10 liter van hierdie pH-korrekte water uit die mengtenk en meng dit deeglik met die benodigde volume **ENSTAR**.

- Indien enige ander produk met **ENSTAR** gemeng word, moet die benodigde volume van hierdie produk op ‘n soortgelyke manier vooraf gemeng word.
- Roer die water in die spuittenk en voeg dan die produk(te) by die tenk in die volgende volgorde (soos van toepassing): Buffer, suspensie-, wateroplosbare- en emulgeerbare-konsentraat.
- Vul die spuittenk met water tot by die verlangde vlak terwyl daar voortdurend geroer word om deeglike vermenging te verseker.
- Handhaaf konstante, deeglike roering tydens vermenging en toediening. **Tenkmengsels moet onmiddellik uitgespuit word en mag nie toegelaat word om in die spuittenk oornag te staan nie.** Die spuittoerusting moet deeglik uitgespoel word aan die einde van die toediening.

TOEDIENINGSMETODES

Verseker deeglike bedekking en benatting van die gewas.

Maak seker dat die spuittoerusting korrek gekalibreer is en gereeld gedurende toediening nagegaan word om egalige en akkurate toediening te verseker. **Konstante roering gedurende toediening is noodsaaklik**. Slegs skoon water moet gebruik word.

Die doeltreffendheid moet binne 3 dae na toediening gemonitor word. 'n Verdere toediening mag nodig wees indien onbevredigende beheer verkry word.

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 noodsaaklik om aan die volgende vereistes te voldoen:

Toerusting:

- Gebruik geskikte atomiseringsapparaat wat die vereiste druppelgrootte en bedekking van die teiken sal verseker en die minste verlies van die produk deur wegdrywing sal hê.
- Die operateur moet 'n spuitstelsel opstel wat 'n druppelspektrum met die kleinste moontlike relatiewe span sal produseer.
- Al die spuitkoppe en atomiseerders moet in die binneste 60-75 % van die vlerkspan geplaas word om te verhoed dat druppels binne-in die vlerkpuntvorteks beweeg.

Toedieningsvereistes

- 'n Minimum volume van 30 ℓ spuitmengsel per ha word aanbeveel. Aangesien hierdie produk nie teen 'n verlaagde volume getoets is nie, kan die registrasiehouer nie effektiwiteit waarborg, of verantwoordelik vir enige nadelige effekte gehou word indien hierdie produk teen 'n laer volume as hierbo aanbeveel, 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 mikrons word aanbeveel. Verseker dat die produksie van fyn druppels, dié wat kleiner as 150 mikrons is, tot 'n minimum beperk word.
- Die hoogte van die spuitbalk moet op 3 tot 4m bokant die teiken gehandhaaf word.
- Moet nie spuit wanneer die vliegtuig besig is om te klim, te draai, te duik of uit te klim nie.

Meteorologiese toestande

- Die verskil tussen die nat- en droëbollesing, soos bepaal met behulp van 'n swaai-higrometer, moet nie 8 °C oorskry nie.
- Moenie tydens turbulente, onstabiele en droë toestande of gedurende die hitte van die dag toedien, wanneer daar stygende en dalende konveksie-windbeweging plaasvind nie.
- Moenie onder temperatuur inversie toestande (deur bokant of binne-in die inversielaag te spuit) spuit nie, en/of by hoë lugvogtoestande, aangesien dit kan lei tot:
    iii. Verlaagde effektiwiteit as gevolg van suspensie en verdamping van klein druppels in die lug (wat lei tot onvoldoende bedekking op teikenarea).
    iv. Skade aan ander sensitiewe gewasse en/of nie-teikenareas as gevolg van wegdrywing van die spuitwolk weg van die teikenarea af.
- Moet nie spuit wanneer die windspoed 15 km per uur oorskry nie.

Algemeen

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

AANBEVELINGS

CROP	DOSAGE RATE	REMARKS
Canola Afrika bolwurm (*Helicoverpa armigera*)	500 mℓ / ha	Verwys na "**WEERSTANDSWAARSKUWING**" **Grond- of lugtoediening:** Dien toe by die eerste tekens van besmetting en verseker goeie bedekking. Voeg 'n geskikte benatter by. Herhaal indien nodig.
Mielies Stamboorder (*Chilo partellus*)	5.0 mℓ / 100 m ry	**Grondtoediening:** Dien **ENSTAR** voorkomend toe as 'n ernstige infeksie verwag word. Alternatiewelik, spuit korrektief voor, of tot 'n maksimum van nie meer as 5 % van die plante wat baie vroeë stadium "haelskade" toon nie. Rig die toediening in die kelkarea van die plante. 'n Opvolgtoediening mag 10-12 dae later nodig wees, veral as die larwes groter as 10 mm in lengte is of as 'n her-infestasie plaasvind, kort voor pluimstadium.
Stronkboorder (*Busseola fusca*) Eerste en tweede generasie	5.0 mℓ / 100 m ry (500 mℓ / ha)	Dien **ENSTAR** toe sodra eiers op 5 % van die plante opgemerk word of wanneer 10 % van die plante skade toon. 'n Tweede toediening mag 10-14 dae later nodig wees. Rig die toediening in die kelkarea van die plante. Gebruik ten minste 3 ℓ water per 100 m ry.
Koring en Gars Afrika bolwurm (*Helicoverpa armigera*)	500 mℓ / ha	Verwys na "**WEERSTANDSWAARSKUWING"** Dien toe sodra 'n infestasie opgemerk word en herhaal as benodig. **Grondtoediening:** Dien toe in 250 tot 500 liter water per hektaar en verseker deeglike benatting van die gewas. **Lugtoediening:** Dien toe in ten minste 30 liter water per hektaar.