

ZENIT

BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

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

DIRECTIONS FOR USE ENCLOSED
 Batch Number
 Date of manufacture

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

ZENIT

INSECTICIDE


Reg. No. L9073, Act/Wet No. 36 of/van 1947

1: 21/01/2013

An oil-in-water emulsion contact and stomach insecticide for the control of the agricultural pests on the crops as listed.

'n Olie-in-water emulsie kontak- en maaginsekoder, vir die beheer van landbouplae op gewasse soos aangedui.

IRAC INSECTICIDE GROUP CODE	3A	IRAC INSEKDODERGROEPKODE
ACTIVE INGREDIENT / AKTIEWE BESTANDEEL		
Deltamethrin (pyrethroid)	25 g/l	Deltametrien (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: 3351









HARMFUL / SKADELIK






1

WARNINGS

Withholding period:

Allow the following minimum number of days between last treatment and harvesting or grazing:

Beans.....	7 days
Lucerne (Grazing).....	3 days
Ground nuts.....	7 days
Lupins (Grazing).....	3 days
Tomatoes.....	2 days

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

- Handle with care.
- Product is poisonous when swallowed, inhaled or by contact.
- May cause skin and eye irritation.
- Toxic to aquatic life.
- Store in a cool place away from feed and food.
- Keep out of reach of children, uninformed persons as well as animals.
- **FLAMMABLE** – do not store near an open flame.
- Do not use this product in any way contrary to the directions on this label, or excessive residues and other undesirable results may occur.
- **ZENIT** has been tested on the most important commercial cultivars without any phytotoxic effects. However, more susceptible cultivars may be released in future which will need to be tested; for this, apply **ZENIT** to a limited test area before commercial applications are made.
- **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/her.**
- **Aerial application:** Notify all of the inhabitants of the immediate area to be sprayed and issue the necessary warnings. Do not spray over, or allow spray drift to contaminate, adjacent areas, rivers, dams, or other areas not under treatment, especially citrus orchards that are under integrated bio-control for red scale. Allow at least a 100 m buffer strip between a citrus orchard and any aerially treated area.

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 any fumes or spray mist.
- Avoid skin and eye contact by wearing full protective clothing (overalls, rubber gloves, boots, respirator and face shield) when handling and applying the product.
- Wash contaminated clothing immediately after use.
- Wash with soap and cold water immediately after use and accidental skin contact as well as contaminated clothing.
- In the case of eye contact: Rinse **immediately** with running water for at least 15 minutes.
- Do not eat, drink or smoke while mixing or applying the product or before washing hands and face and changing clothing.
- Prevent contamination of food, feeds, drinking water and eating utensils.
- Avoid drift of spray onto other crops, grazing, rivers, dams and other areas not under treatment.
- Clean equipment after use. Dispose of rinsate where it will not contaminate the environment.
- Do not calibrate clear hopper or aircraft over grazing, water sources or crops not under treatment.
- 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 before destroying the container.

- Destroy the empty container by puncturing and burying or burning it.
- **Never** re-use the empty container for any other purpose.

SYMPTOMS OF HUMAN POISONING

One or more of the following symptoms could occur:

LOCAL: Eye and skin paraesthesiae which may be severe. Usually transient, with resolution within 24 hours.

SYSTEMIC: Dizziness, listlessness, headache, vomiting and nausea, epigastric pain, convulsions, muscular fasciculation of limbs, unconsciousness (at a very high dosage).

FIRST AID TREATMENT

ALWAYS SEEK TREATMENT BY A DOCTOR IMMEDIATELY.

Remove the patient from the source of poisoning to fresh air and keep him quiet and reassured.

Skin contact: Carefully remove contaminated clothing as well as shoes. Wash contaminated body area with a non-abrasive soap and lots of water. Persons providing first aid must wear gloves to avoid self-contamination.

Eye contact: Flush eyes immediately with large amounts of clean water for at least 15 minutes. Occasionally lift the upper and lower lids.

Ingestion: If swallowed, wash the mouth out with water, give the patient water to drink (if conscious) and **DO NOT** induce vomiting. Take the patient to the nearest doctor or hospital and **SHOW THIS LABEL TO THE DOCTOR.**

NOTE TO PHYSICIAN:

Treat symptomatically.

Local contamination:

Skin: Apply vitamin E cream.

Eye: Product can cause severe pain. Instillation of local anaesthetic drops for example: 1% amethocaine hydrochloride eye drops. When necessary, administer analgesics.

Systemic poisoning.

Monitor the respiratory and cardiac functions.

Specific treatment:

- Electrocardiograph, check for pulmonary edema in the event of inhalation.
- Gastric lavage: administer activated charcoal, endotracheal intubation and perform artificial respiration when necessary
- Perfusion, haemodialysis.
- Anti-convulsion therapy : Administer Diazepam intravenously

Adrenergic compounds and atropine are contra-indicated in therapy.

Complete recovery from over-exposure is spontaneous.

Do not confuse with organophosphate intoxication.

MODE OF ACTION:

ZENIT is a fast-acting, non-systemic insecticide with contact and stomach action.

RESISTANCE WARNING:

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

To delay insecticide resistance:

- Avoid 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.

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 **ZENIT** as recommended, a resistant population may be present. If a resistant population is positively identified, consideration should be given to the prompt use of an insecticide with a different mode of action for which there is no record of resistance from the relevant pest. For specific information on resistance management, contact the registration holder of this product. Meridian Agrochemical Company will not accept 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.

American bollworm resistance management

DO NOT apply more than 2 pyrethroid applications per growing season. If more sprays are necessary, a product with a different mode of action must be used.

GENERAL: If a synthetic pyrethroid results in poor control, **DO NOT** re-spray with any synthetic pyrethroid, even at a corrective dosage rate. Use a product with a different mode of action (i.e. from a different Insecticide Group Code).

For specific information on resistance management contact your Meridian Agrochemical Company representative.

DIRECTIONS FOR USE

Use only as directed.

MIXING INSTRUCTIONS

Half-fill the spray tank with clean, suitable water. Shake the container thoroughly prior to use. Add the required quantity of **ZENIT** to the water in the spray tank while agitating. If any other product is to be mixed with **ZENIT**, then the required volume of that product should be pre-mixed in a similar way. Agitate the water in the spray tank and add the product(s) to the tank in the following sequence (where applicable): Suitable buffer, suspension concentrate, water-soluble concentrate, Emulsifiable concentrate. Fill the spray tank to the desired volume with water while maintaining agitation. Maintain agitation during application. **Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank overnight.** Spraying equipment must be thoroughly flushed out at the end of the spraying operation.

COMPATIBILITY

The compatibility of **ZENIT** 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 make tank mixtures with other agricultural remedies or foliar feed products without first ensuring that the combination is physically compatible and that no reduction in efficacy or crop damage will result. When mixing **ZENIT** with other products, follow all label instructions carefully. **ZENIT** is compatible with emulsifiable concentrate and suspension concentrate formulations of herbicides from the chloroacetamide and triazine groups. Flocculation may sometimes occur when mixtures are made with herbicides formulated as wettable powders.

WATER QUALITY:

The efficacy of **ZENIT** can be affected by very hard water (>1000 ppm.)

pH:

Water with a very high / low pH can negatively influence the efficacy of **ZENIT**. Ideally the water pH should be in a pH range of 5 - 8. When the spray water is above or below these criteria, it must be corrected with a suitable buffering agent.

Application through irrigation systems:

In the case of application through an irrigation system, the water used must be as clean as possible, that is, free of silt, clay and organic material, which are particularly abundant in river waters when in flood. Synthetic pyrethroids tend to adhere to these particles, which reduces their efficacy.

RAINFASTNESS PROPERTIES:

ZENIT has excellent rainfastness properties, but do not spray if leaves are wet.

APPLICATION METHODS

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.

GROUND APPLICATION

Whether using mistblower or boom and nozzle sprayers, the same application dosage rates/ha are applicable. Sprayers must be correctly calibrated in order to deliver the required volume of spray mixture evenly over the target area. The amount of water that is needed for good coverage may differ from apparatus to apparatus. The amount of spray mixture used/ha is dependent upon the amount required to give adequate coverage with the particular apparatus. Use enough water to ensure thorough coverage.

AERIAL APPLICATION:

DO NOT COMMENCE AERIAL APPLICATION BEFORE CONSULTING YOUR ZENIT REPRESENTATIVE.

Aerial application may **ONLY** be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of STANSA Code 0118 (Aerial Application of Agricultural Pesticides). 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 important that the following criteria are met:

Equipment:

- Use suitable atomising equipment (such as hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product through spray drift.
- The operator must use a setup that will produce a droplet spectrum with the lowest relative span possible.
- All nozzles or atomisers should be positioned within the inner 75 % of the wingspan in order to prevent droplets from entering the wingtip vortices.

Application parameters:

- A minimum volume of 30 ℓ spray mixture per hectare is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product **ZENIT** is applied aerially at a lower volume rate than recommended above.
- A droplet coverage of 30-40 droplets per cm² must be recovered at the spray target.
- It is recommended to use a droplet spectrum with a VMD of 250-280 microns. Make sure that the production of fine droplets (smaller than 150 microns) is restricted to a minimum.
- Maintain the spray boom height at 3-4 metres above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or banking.
- Apply before the crop becomes too dense as this will prevent proper coverage of the plants. Thus, ensure that thorough penetration and wetting is obtained.
- Monitor efficacy within 3 days following application. If unacceptable levels of control are obtained, a further application may be required.

Meteorological conditions:

- Stop spraying under temperature inversion conditions (spraying in or above the inversion layer).
- The difference in temperature between the wet and dry bulb thermometers, as determined using a whirling hygrometer, should not exceed 8°C.
- Stop spraying if the wind speed exceeds 15 km/h.
- Stop spraying under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur.

General:

- Ensure that fields to be treated are accurately marked and that the aerial spray operator knows exactly which fields to spray.
- Obtain assurance from the aerial spray operator that the above requirements will be met.

RECOMMENDATIONS

CROP/PEST	APPLICATION RATE	REMARKS
All Crops Cutworms	<u>Ground application:</u> 125 – 165 ml /ha 0,4-0,5 ml in 3 l water/100m row <u>Aerial application:</u> 165 ml/ha	Apply pre-emergence and /or early post-emergence. <u>Overall treatment:</u> Apply in approximately 300 l water/ha. <u>Band treatment:</u> Apply in a band of at least 30 cm wide over the row. Apply in at least 30 l / water/ha. Refer to "AERIAL APPLICATION" above.

NOTES:

- Cutworms prefer to feed sub-surface when the soil surface is dry. Damage to seedlings is not usually visible until the plants start withering. When planting into dry soil (or when the soil shortly after planting is desiccated) poor cutworm control can be expected as the pest does not come into contact with the product applied to the soil surface. Thus, a follow-up application of **ZENIT** may not ensure cutworm control unless the soil surface is moist.
- The soil should be of fine tilth, free of clods and excessive trash. If the crop has already emerged, start application as soon as the plants show damage.
- The soil surface should be moist through to a depth of 5 cm at the time of application. Or if applied to dry soil, then rain or irrigation should wet the soil to a depth of at least 5 cm within 3 days following application.
- A minimum tillage cultivation usually results in high cutworm populations. In such solutions an overall spray is recommended. The populations should be carefully monitored in case a follow-up treatment is needed.
- Severe crop damage must be expected in crops that are planted directly after a winter crop or in fields that had a significant trash or weed cover.

CROP/PEST	APPLICATION RATE	REMARKS
BEANS, GROUNDNUTS (PEANUTS), PEAS American Bollworm	<u>Ground application</u> 250 ml /ha <u>Aerial application :</u> 250 ml /ha	IMPORTANT: See the warning against American Bollworm resistance under " RESISTANCE WARNING " above. Scout the fields weekly from flowering, using a sample size of 25 plants / 15 ha (or 2 plants/ha). Begin spraying when 10% of the plants are infested. For best results, the larvae should not exceed 10 mm long. Apply in 200 – 500 l water/ha. Apply in at least 30 l water/ha. Refer to "AERIAL APPLICATION" above.

CROP/PEST	APPLICATION RATE	REMARKS
LUCERNE Lucerne caterpillar	<u>Ground application:</u> 250 ml/ha	Apply before the pest has removed significant leaf area. Repeat if needed.

LUPINS American Bollworm	<u>Aerial application:</u> 200 mℓ/ha	IMPORTANT: See the warning against American bollworm resistance under “ RESISTANCE WARNING ” above. Scout fields weekly from the bud stage using a sample size of 25 plants per 15 ha. Start applying when 10 % of the plants are infested. For best results, the larvae should not exceed 10 mm in length. Apply in at least 30 ℓ water / ha. Refer to “ AERIAL APPLICATION ” above.
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CROP/PEST	APPLICATION RATE	REMARKS
TOMATOES American Bollworm	<u>High volume application:</u> 12,5 mℓ /100 / water (2 ℓ spray mixture/10 cm plant height/ 100 m row length) <u>Low volume application:</u> 0,25 mℓ / 10 cm plant height / 100 m row length	IMPORTANT: See the warning against American bollworm resistance under “ RESISTANCE WARNING ” above. Apply as soon as the plants have started flowering or when bollworms are expected. For best results, the larvae should not exceed 10 mm in length. Repeat every 7 - 10 days. Apply as a full cover spray. See the calculation below for the dosage / ha. Use enough water for good coverage. See the calculation below for the dosage / ha.

DOSAGE / ha:

Calculate the dosage/ha of **ZENIT** using the formulae below:

HIGH VOLUME APPLICATION:

$$\frac{(\text{Total length of rows/ha}) \times (\text{Height of tomatoes in cm} \times 2)}{100 \times 10} = \text{Volume } (\ell) \text{ of mixture/ha}$$

$$\text{and } \frac{(\text{Volume } (\ell) \text{ of mixture/ha}) \times 12,5}{100} = \text{mℓ ZENIT /ha}$$

LOW VOLUME APPLICATION:

$$\frac{(\text{Total length of rows/ha}) \times (\text{Height of tomatoes in cm}) \times 0,25}{100 \times 10} = \text{mℓ ZENIT /ha}$$

WAARSKUWINGS

Onthoudingsperiode:

Laat die volgende minimum aantal dae toe tussen laaste toediening en oes of beweiding:

Bone.....	7 dae
Lusern (beweiding)	3 dae
Lupiëne (beweiding)	3 dae
Tamaties	2 dae

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

- Hanteer versigtig.
- Produk is giftig wanneer ingesluk, ingeasem of deur velkontak.
- Mag oog en velirritasie veroorsaak.
- Giftig vir waterorganismes.
- Berg in 'n koel plek weg van voer en voedsel.
- Hou buite bereik van kinders, ongeligte persone en diere.
- **VLAMBAAR** - moet nie naby 'n oopvlam opberg nie.
- Moet nie hierdie produk in enige manier gebruik wat strydig met die aanwysings op hierdie etiket is nie, of oormatige residue en ander ongewenste resultate kan veroorsaak.
- **ZENIT** is getoets op die mees belangrikste kommersiële kultivars sonder enige fitotoksiese skade. Meer vatbare kultivars mag in die toekoms vrygestel word, waarvoor getoets moet word; daarvoor moet **ZENIT** op 'n beperkte area getoets word voordat kommersiële toedienings gemaak word.
- **Herbetreding:** Moet nie binne 1 dag na bespuiting die behandelde gebied betree nie, tensy beskermende oorklere gedra word.
- **In geval van vergiftiging ontbied 'n geneesheer en stel hierdie etiket aan hom/haar beskikbaar.**
- **Lugtoediening:** Stel al die inwoners van die onmiddellike omgewing van die gebied wat bespuit gaan word in kennis en reik die nodige waarskuwings uit. Moet nie aangrensende gebiede, riviere of damme of ander areas wat nie onder behandeling is bespuit of toelaat dat die spuitnewel daarheen oorwaai nie, veral na sitrusbome onder geïntegreerde biologiese beheer vir rooidopluis. Laat 'n bufferstrook van ten minstens 100 m toe tussen enige lugbehandelde lande en 'n sitrusboord.

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie. Die werking en effek 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 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 effek op mens of dier of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van die versuim van die gebruiker om die etiketaanwysings na te kom, of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moenie enige dampe of spuitnewel inasem nie.
- Vermy kontak met die vel en oë deur beskermende oorklere te dra (oorpak, rubber handskoene, stewels, respirator en gesigskerm) tydens hantering en toediening van die produk.
- Was besoedelde klere onmiddellik na gebruik.
- Was met seep en koue water onmiddellik na gebruik en toevallige velkontak; so ook besoedelde klere.
- In die geval van oogkontak spoel onmiddellik met lopende water vir ten minste 15 minute.
- Moet nie eet, drink of rook tydens vermenging of toediening van die produk of voordat hande en gesig gewas en skoon klere aangetrek is nie.
- Verhoed besoedeling van voedsel, voer, drinkwater en eetgerei.

- Verhoed wegdrywing van spuitnewel na ander gewasse, weiding, riviere, damme en ander gebiede wat nie onder behandeling is nie.
- Maak spuittoerusting deeglik skoon na gebruik. Raak ontslae van spoelwater waar dit nie die omgewing sal besoedel nie.
- Moet nie vliegtuig kalibreer oor weiding, waterbronne of onbehandelede gewasse nie.
- Spoel die leë houer drie keer uit op die volgende wyse: Keer die leë houer om oor die spuittenk of mengbak en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n gedrup verminder het. Spoel die leë houer daarna **drie keer** uit met 'n volume water wat gelykstaande aan 'n minimum van 10% van die inhoud van die houer is. Gooi die spoelwater by die inhoud van die spuittenk voordat die houer vernietig word.
- Vernietig die leë houer deur gate daarin te maak en te begrawe of te verbrand.
- **Moet nooit** die leë houer vir enige ander doel gebruik nie.

SIMPTOME VAN MENSLIKE VERGIFTIGING

Een of meer van die volgende simptome kan voorkom:

LOKAAL: Oog- en velprikkeling wat ernstig kan wees. Meestal tydelik van aard en herstel binne 24 uur.
SISTEMIESE: Duiseligheid, lusteloosheid, hoofpyn, braking en mislikheid, buikpyn, spiertrekkings van ledemate, struiptrekkings en bewusteloosheid (teen 'n baie hoë dosisse).

NOODHULPBEHANDELING

VERKRY ALTYD ONMIDDELIKE BEHANDELING VAN 'N GENEESHEER

Verwyder die pasiënt van vergiftiging na vars lug en hou hom kalm en gerusgestel.

Velkontak: Verwyder besoedelde klere, sowel as skoene. Was besmette liggaamsdele deeglik met 'n nie-skurende seep en baie water af. Persone wat noodhulp toedien, moet handskoene dra om self-kontaminasie te vermy.

Oogkontak: Spoel oë onmiddellik met groot hoeveelhede skoon water vir ten minste 15 minute uit. Lig die boonste en onderste ooglede.

Ingesluk: Indien ingesluk, was die mond uit met water, gee die pasiënt water om te drink (indien by bewussyn) en **MOENIE** braking induseer nie. Neem die pasiënt onmiddellik na die naaste geneesheer of hospitaal en **TOON HIERDIE ETIKET AAN DIE GENEESHEER**.

INLIGTING AAN GENEESHEER

Behandel simptome

Lokale besmetting:

Vel: Wend vitamien E-room aan.

Oë: Produk kan ernstige pyn veroorsaak. Wend lokale verdowingsdruppels aan, byvoorbeeld: 1% amethocaine hidrokloriedoogdruppels. Gee pynstillers indien nodig.

Sistemiese vergiftiging:

Kontroleer die asemhaling- en hartfunksies.

Spesifieke behandeling sluit in:

- Elektrokardiografie, kontroleer ventilasie in geval van inaseming.
- Maagspoeling: dien geaktiveerde houtkool toe, endotracheale intubasie en kunsmatige asemhaling indien dit nodig is.
- Bloedperfusie en hemodialise.
- Anti-stuiptrekkingssterapie: Dien "Diazepam" binne-aars toe.

Adrenergiese middels en atropien moet nie gebruik word nie.

Volkome herstel is spontaan na oor-blootstelling.

Moet nie met organofosfaatvergiftiging verwar word nie.

METODE VAN WERKING

ZENIT is 'n vinnig-werkende, nie-sistemiese insekdoder met kontak- en maagaksie.

WEERSTANDSWAARSKUWING

Vir weerstandbestuur is **ZENIT** 'n groeppode 3 insekdoder. Enige populasie van 'n spesifieke insek mag individue insluit wat 'n natuurlike weerstand teen **ZENIT** en enige ander groeppode 3 insekdoder het. Hierdie weerstandbiedende individue kan uiteindelik die insekpopulasie oorheers as hierdie insekdoders

herhaaldelik aangewend word. Hierdie weerstandbiedende insekte sal waarskynlik nie deur **ZENIT** of enige ander groepkode 3 insekdoder beheer word nie.

Om weerstand teen insekdoders te vertraag:

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

Aangesien die voorkoms van weerstand nie voorspel kan word nie, word gebruikers aangeraai om behandelde gewasse noukeurig dop te hou. Indien die behandeling met **ZENIT** 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. Meridian Agrochemical Company (Edms.) Bpk. sal nie aanspreeklikheid aanvaar vir enige gebrek aan prestasie in die geval van die opbou van weerstandbiedende insekte as gevolg van onvoldoende weerstandsbestuurspraktyke soos aangedui op die etiket nie.

Amerikaanse bolwurm weerstandsbestuur

MOET NIE meer as 2 piretroïedtoedienings per groeiseisoen toedien nie. Indien meer bespuitings nodig is, moet 'n produk met 'n ander metode van werking gebruik word.

ALGEMEEN: Indien 'n sintetiese piretroïedbespuiting swak beheer gee, **MOENIE** met enige sintetiese piretroïed, selfs teen 'n korrektiewe dosis, herspuit nie. Gebruik 'n produk met 'n ander metode van werking (van 'n ander Insekdodergroepkode).

Vir spesifieke inligting oor weerstandsbestuur kontak jou Meridian Agrochemical Company (Edms.) Bpk. verteenwoordiger.

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

MENGINSTRUKSIES

Maak die spuittenk halfvol met skoon, geskikte water. Skud die houer deeglik voor gebruik. Voeg die benodigde hoeveelheid **ZENIT** by die water in die spuittenk terwyl geroer word. Indien daar enige ander produkte met **ZENIT** gemeng word, moet die benodigde volume van daardie produk op soortgelyke wyse eers 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): geskikte buffer, suspensiekonsentraat, water-oplosbare konsentraat, emulgeerbare konsentraat. Vul die spuittenk met water tot die verlangde volume terwyl daar voortdurend geroer word. Handhaaf roering gedurende toediening. **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om oornag in die spuittenk te staan nie.** Spuittoerusting moet deeglik uitgespoel word aan die einde van toediening.

VERENIGBAARHEID

Die verenigbaarheid van **ZENIT** met ander produkte hang van die formulerings van die betrokke produkte af, asook van die kwaliteit van die spuitwater wat gebruik word. As gevolg van die veranderinge in formulerings word dit aanbeveel dat 'n fisiese verenigbaarheidstoets uitgevoer word voor die tenkmengsel aangemaak word. Moet nie tenkmengsels met ander landbouprodukte of blaarvoedingprodukte maak, alvorens seker gemaak is dat die effektiwiteit van die produk nie sal verlaag, of gewasskade sal voorkom nie. Indien **ZENIT** in kombinasie met enige ander landboumiddel gebruik word, moet al die etiketaanwysings van daardie betrokke produkte gevolg word. **ZENIT** is verenigbaar met emulgeerbare konsentraat- en suspensiekonsentraat-formulerings van onkruidodders van die chloorasetamied- en triasiengroepe. Uitvlokkings kom somtyds voor wanneer mengsels met onkruidodders wat as benatbare poeiers geformuleer is, gemaak word.

WATERKWALITEIT

Die effektiwiteit van **ZENIT** kan beïnvloed word deur baie harde water (> 1000 dpm.)

pH:

Water met 'n uitermatige hoë/lae pH kan die effektiwiteit van **ZENIT** nadelig beïnvloed. Vir die beste resultate moet die water tussen pH 5 en 8 wees. Indien die spuitwater nie hieraan voldoen nie, moet dit met 'n geskikte buffer reggestel word.

Toediening deur besproeiingsstelsel:

In die geval van toediening deur 'n besproeiingsstelsel, moet die water wat gebruik word so skoon as moontlik wees, d.w.s. vry van slik, klei en organiese materiaal, wat normaalweg in die vloedwater van 'n rivier voorkom. Sintetiese piretroïede neig om aan hierdie deeltjies vas te kleef, wat hul effektiwiteit sal verlaag.

REËNVAAS-EIENSKAPPE

ZENIT het uitstekende reënvas-eienskappe, maar moenie toedien wanneer die blare nat is nie.

TOEDIENINGSMETODES

Verseker dat die spuittoerusting korrek gekalibreer is en gereeld gedurende toediening nagegaan word om egalige en akkurate toediening te verseker. **Konstante roering deur die hele spuitoperasie is noodsaaklik.** Gebruik slegs skoon water.

GRONDTOEDIENING

Ongeag of 'n newelblaser of spuitbalk met spuitpunte gebruik word, die dosis/ha bly onveranderd. Spuite moet korrek gekalibreer word om die benodigde hoeveelheid spuitmengsel eweredig oor die teikenarea te versprei. Die hoeveelheid water wat vir goeie bedekking benodig word, mag verskil van apparaat tot apparaat. Die hoeveelheid spuitmengsel/ha sal afhang van die hoeveelheid wat benodig word om goeie bedekking met die spesifieke apparaat te verkry. Gebruik voldoende water om deeglike bedekking te verseker.

LUGTOEDIENING

MOENIE LUGBESPUITING BEGIN VOORDAT U EERS MET U ZENIT VERTEENWOORDIGER GEKONSULTEER HET NIE.

Lugtoediening mag slegs deur 'n geregistreerde lugbespuitingsoperateur met 'n korrek gekalibreerde, geregistreerde vliegtuig volgens die instruksies van SANS Kode 10118 (Aerial Application of Agricultural Pesticides) 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 (soos hidroliese of roterende spuitkoppe) wat die vereiste druppelgrootte en bedekking sal produseer, maar wat die minste verlies van produk deur wegdrywing sal verseker.
- Die operateur moet 'n stelsel kies wat 'n druppelspektrum met die kleinste moontlike relatiewe span sal produseer.
- Al die spuitneuse of atomiseerders moet in die binneste 75% van die vlerkspan geplaas word om die beweging van druppels binne-in die vlerkpuntvorteks te verhoed.

Toedieningsvereistes:

- '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 effekte indien **ZENIT** teen 'n laer volume, as hierbo aanbeveel, uit die lug toegedien word nie.
- 'n Druppelbedekking van 30-40 druppels per cm² moet op die teikenarea herwin word.
- Dit word aanbeveel om gebruik te maak van 'n druppelspektrum met 'n VMD van 250-280 mikron. 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 klim, duik, draai of uitklim nie.
- Dien toe voordat die gewas te ruig word aangesien dit behoorlike bedekking van die plante kan verhinder. Verseker dat deeglike penetrasie en benutting verkry word.

- Monitor die effektiwiteit binne 3 dae na bespuiting. 'n Verdere bespuiting mag nodig wees indien onbevredigende beheer verkry is.

Meteorologiese toestande:

- Moet nie onder temperatuurinversie-toestande (deur bokant of binne-in die inversielaag te spuit) toedien nie.
- Die verskil in temperatuur tussen die nat-en droëbollesing, soos met 'n swaaihigrometer bepaal, moet nie 8 °C oorskry nie.
- Moet nie spuit indien die windspoed 15 km/h oorskry nie.
- Moet nie tydens turbulente, onstabiele en droë toestande toedien nie of gedurende die hitte van die dag wanneer stygende en dalende konveksie-windbeweging plaasvind nie.

Algemeen:

- Verseker dat die lande wat behandel sal wees akkuraat gemerk is en dat die lugbespuitingsoperateur presies weet watter lande gespuit moet word.
- Verkry 'n versekering van die lugbespuitingsoperateur dat aan die bogenoemde vereistes voldoen sal word.

AANBEVELINGS

GEWAS/PLAAG	DOSIS	OPMERKINGS
<p>Alle gewasse</p> <p>Snywurms</p>	<p><u>Grondtoediening</u> 125 -165 ml /ha</p> <p>0,4 - 0,5 ml in 3 l water/100m ry</p> <p><u>Lugtoediening:</u> 165 ml /ha</p>	<p>Dien voor-opkoms en/of vroeë na-opkoms toe.</p> <p><u>Algehele behandeling:</u> Dien toe in ongeveer 300 l water/ha.</p> <p><u>Strookbehandeling:</u> Dien toe in 'n strook van ten minstens 30 cm wyd oor die ry.</p> <p>Dien toe in ten minste 30 l water/ha. Verwys na "LUGTOEDIENING" hierbo.</p>

NOTAS:

- Snywurms is geneig om ondergronds te voed indien die grondoppervlak droog is. Skade aan saailinge is gewoonlik nie sigbaar alvorens die plante begin verwelk nie. Indien daar in droë grond geplant word (of wanneer die grond kort na plant vinnig verdroog) kan swak beheer van snywurms verwag word, aangesien die plaag nie met die produk op die grondoppervlak in aanraking kom nie. Opvolgbespuiting van **ZENIT** sal nie noodwending beheer verseker nie, tensy die grondoppervlak klam is.
- Grond moet fyn bewerk en vry van kluite en oormatige plantreste wees. Indien die gewas alreeds opgekom het, begin toediening sodra plante skade toon.
- Die grondoppervlak moet klam wees tot 'n diepte van 5 cm tydens toediening. Indien op droë grond toegedien word, moet reën of besproeiing die grond binne 3 dae na toediening tot 'n diepte van ten minste 5 cm benat.
- Minimum bewerking lei gewoonlik tot hoë snywurmpopulasies. In sulke gevalle word 'n algehele bespuiting aanbeveel. Die populasie moet sorgvuldig gemonitor word want 'n opvolgbehandeling mag nodig wees.
- Ernstige gewasskade moet verwag word by gewasse wat direk na 'n wintergewas geplant is of in lande wat baie plantreste- of onkruidbedekking gehad het.

GEWAS/PLAAG	DOSIS	OPMERKINGS
BONE, GRONDBONE (GRONDBOONTJIES) EN ERTJIES Amerikaanse bolwurm	<u>Grondtoediening</u> 250 mℓ /ha <u>Lugtoediening:</u> 250 mℓ /ha	BELANGRIK: Sien die waarskuwing teen bestandheid van Amerikaanse bolwurm onder " WEERSTANDSWAARSKUWING " hierbo. Verken die lande weekliks vanaf blomtyd. Gebruik 'n monstergrootte van 25 plante/15 ha (of 2 plante/ha). Begin toedien sodra 10% van die plante besmet is. Vir die beste resultate moet die larwes nie meer as 10 mm in lengte oorskry nie. Dien toe in 200 - 500 ℓ water/ha. Dien toe in ten minste 30 ℓ water/ha. Verwys na " LUGTOEDIENING " hierbo.
LUSERN Lusernrusper	<u>Grondtoediening:</u> 250 mℓ/ha	Dien toe voordat die plaag noemenswaardige blaaroppervlakte gevreet het. Herhaal indien nodig.
LUPIENE Amerikaanse bolwurm	<u>Lugtoediening:</u> 200 mℓ/ha	BELANGRIK: Sien die waarskuwing teen bestandheid van Amerikaanse bolwurm onder " WEERSTANDSWAARSKUWING " hierbo. Verken die lande weekliks vanaf blomtyd. Gebruik 'n monstergrootte van 25 plante/15 ha (of 2 plante/ha). Begin toedien sodra 10% van die plante besmet is. Vir die beste resultate moet die larwes nie meer as 10 mm in lengte oorskry nie. Dien toe in ten minste 30 ℓ water/ha. Verwys na " LUGTOEDIENING " hierbo.
TAMATIES Amerikaanse bolwurm	<u>Hoë-volume toediening:</u> 12,5 mℓ /100 ℓ water (2 ℓ spuitmengsel/10 cm planthoogte/100 m rylengte) <u>Lae-volume toediening:</u> 0,25 mℓ / 10 cm planthoogte /100 m rylengte	BELANGRIK: Sien die waarskuwing teen bestandheid van Amerikaanse bolwurm onder " WEERSTANDSWAARSKUWING " hierbo. Dien toe sodra die plante begin blom of wanneer bolwurms verwag word. Vir die beste resultate moet die larwes nie 10 mm in lengte oorskry nie. Herhaal elke 7 - 10 dae. Dien toe as 'n voldekbepuiting. Vir die dosis/ha sien die berekening hieronder. Gebruik voldoende water vir goeie bedekking. Vir die dosis/ha sien die berekening hieronder.

DOSIS / HA:

Bereken die dosis/ha van **ZENIT** deur van die volgende formules te gebruik:-

HOË-VOLUME TOEDIENING:

$$\frac{(\text{Totale lengte van rye/ha})}{100} \times \frac{(\text{Hoogte van tamaties in cm} \times 2)}{10} = \text{Volume } (\ell) \text{ van mengsel/ha}$$

$$\text{en } \frac{(\text{Volume } (\ell) \text{ van mengsel/ha})}{100} \times 12,5 = \text{mℓ ZENIT /ha}$$

LAE-VOLUME TOEDIENING:

$$\frac{(\text{Totale lengte van rye/ha})}{100} \times \frac{(\text{Hoogte of tamaties in cm})}{10} \times 0,25 = \text{mℓ ZENIT /ha}$$