

IMPERIO 150 EC

BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY

GEBRUIKSAANWYSINGS INGESLUIT
Lotonommer
Datum van vervaardiging

VERWYS NA BESONDERHEDE
SOOS OP HOUER / SAK GEDRUK

IMPERIO 150 EC

INSECTICIDE



Reg. No. L10497, Act/Wet No. 36 of/van 1947 1: 17/09/2018

An emulsifiable concentrate stomach and contact insecticide for the control of various insect pests on crops as listed.

'n Emulgeerbare konsentraat maag en kontak insekdodoer vir die beheer van verskeie plaë op gewasse soos aangedui.

IRAC INSECTICIDE GROUP CODE	22 A	IRAC INSEKDOEDERGROEPKODE
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ACTIVE INGREDIENT / AKTIEWE BESTANDEEL		
Indoxacarb (oxadiazine)	150 g/ℓ	Indoksakarb (oksadiasien)

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: 3082








HARMFUL / SKADELIK








DIRECTIONS FOR USE ENCLOSED
Batch Number
Date of manufacture

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

WARNINGS

Withholding period:

Allow the following minimum number of days between last treatment and harvest:

Maize and Sweetcorn (Grazing).....	42 days
Peaches.....	28 days
Peppers.....	1 day

IMPORTANT: The recommended withholding period between last application and harvest meets local residue requirements, but may not meet export requirements. If the treated crop is intended for export, consult the relevant importer or exporting body regarding the Maximum Residue Limits and recommended withholding periods for the use of this product.

- Do not graze or use treated crops as fodder.
- Handle with care.
- May cause sensitisation by skin contact.
- Harmful by swallowing, inhalation and by contact.
- Toxic to animals, bees, fish and other aquatic organisms. (Refer to Use restrictions: BEES)
- Store in the original container in a cool, dry place.
- Store away from food and feed.
- Keep product away from light.
- Keep out of reach of children, uninformed persons and animals.
- Use of this material in a manner or at a time other than in accordance with the directions on this label may cause excessive residues or other undesirable results.
- Do not use this product in any way contrary to the directions on this label.
- In case of poisoning of a human or animal: **Seek Medical assistance immediately and make this label available to him.**
- **Re-entry:** Do not enter the treated area within 1 day after treatment unless wearing protective clothing.
- **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.
- **IMPERIO150 EC** has been tested on 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 **IMPERIO 150 EC** 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 spray mist.
- All persons in direct contact with the product, including markers must wear protective clothing-protective gloves, boots and face shield.
- Wash with plenty of soap and cold water immediately after use and accidental skin contact.
- Wash contaminated clothing immediately after use.
- Immediately remove all contaminated clothing and shoes.
- Do not eat, drink or smoke while mixing or applying the product or before washing hands and face.
- Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.
- **Do not** spray during periods of bee activity.
- Clean applicator after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Prevent contamination of food, feeds, drinking water and eating utensils.
- Invert the empty container over the spraying or mixing tank and allow it to drain for at least thirty seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to at least 30% of the volume of the container. Add the rinsings to the

contents of the spray tank before destroying the container in the prescribed manner.

- **Never** re-use the empty container for any other purpose.
- Empty containers must be destroyed by perforation and flattening and then buried in an approved dump site.

USE RESTRICTIONS

- Consult the sales agent of your local Distributor for on farm advice before using **IMPERIO 150 EC**.
- Do not apply to any crop or situation not mentioned in this label.
- 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.

BEEES

IMPERIO 150 EC is moderately toxic to honeybees. **IMPERIO 150 EC** must therefore not be sprayed directly onto foraging bees. Once the spray deposit has dried, bees can then be allowed to forage.

RESISTANCE MANAGEMENT

For resistance management, **IMPERIO 150 EC** is a group code 22A insecticide. Any insect population may contain individuals naturally resistant to **IMPERIO 150 EC** and other group code 22A insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **IMPERIO 150 EC** or any other group code 22A insecticides.

To delay insecticide resistance:

- Avoid exclusive repeated use of insecticides from the same chemical 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.

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

Since the occurrence of resistance cannot be forecast, users are advised to keep treated plants under close observation. If treatment is not effective following the use of **IMPERIO 150 EC** as recommended, a resistant strain may be present. If a resistant strain 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.

Some insects (*Helicoverpa armigera*, *Chrysodeixis acuta*, *Plutella xylostella* and *Phthorimae operculella*) have been able to develop resistance to current commercially available products. When resistance occurs, recommended rates fail to suppress the pest population below the economic threshold. The onset of resistance cannot be predicted and local advisors should be consulted for resistance management recommendations. As a result of its unique mode of action, **IMPERIO 150 EC** is ideally suited for applications where resistance management is important. Whilst there is no evidence of insect resistance to indoxacarb, the following guidelines will maximise the effective life of the product:

1. Where appropriate, alternate **IMPERIO 150 EC** with compounds from different chemical classes (carbamate, pyrethroid, organophosphate and IGR). Only registered products from these classes may be used. The maximum number of applications per season with **IMPERIO 150 EC** as per the instructions under the **DIRECTIONS FOR USE** in this label must not be exceeded.
2. Monitor insect populations and apply **IMPERIO 150 EC** according to the label instructions when locally determined economic thresholds are reached. More than one application may be necessary for any infestation. In certain crops, **IMPERIO 150 EC** must be applied preventatively.
3. Follow the label recommendations precisely for rates, spray intervals as well as for the optimum timing to apply **IMPERIO 150 EC**.

4. **IMPERIO 150 EC** respects beneficial insects and mites. Such beneficials that will remain following treatments can help to control / reduce pest re-infestation. Surviving beneficials provide additional pressure on the pest population and can therefore aid in the reduction of resistance potential.

SYMPTOMS OF HUMAN POISONING

May cause eye damage.

May cause skin damage

In severe cases, there may be involuntary defaecation, bradycardia, hypotension, pulmonary oedema, convulsions, coma and death from respiratory failure or cardiac arrest.

FIRST AID TREATMENT

- **Skin contact:** Wash affected areas thoroughly with soap and cold water immediately. Do not rub skin. Remove contaminated clothing and launder before re-use. If irritation persists, seek medical advice. Emergency personnel should wear gloves and avoid contamination. **Seek medical attention.**
- **Eye contact:** If in eyes, hold eyelids open and wash with copious amounts of clean water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue to rinse the eye. **Seek medical attention.**
- **Ingestion: Seek medical attention immediately. Do not induce vomiting.** Never give anything by mouth to an unconscious or convulsing person. If the patient is alert and respiration is not depressed, administer 1 – 2 glasses of water and, if possible, 50 g of activated charcoal.
- **Inhalation:** Remove affected person to fresh air, keep the patient calm, warm and at rest. If breathing is difficult, give oxygen. Administration of oxygen must be applied by a qualified person. If breathing stops, call an ambulance and apply artificial respiration. **Seek medical attention immediately.**

NOTE TO PHYSICIAN

Antidotal treatment is not applicable. Consider gastric lavage while avoiding aspiration. Do not administer ephedrine or related drugs.

MODE OF ACTION

IMPERIO 150 EC acts by inhibiting sodium ion entry into the nerve cells, resulting in paralysis and death of the pest. Death occurs within 1 – 2 days, but inhibition of pest feeding occurs within 2 – 8 hours. **IMPERIO 150 EC** is active as a larvacide through ingestion (stomach action) and through cuticular absorption (contact action). **IMPERIO 150 EC** is equally active on larvae of all development stages. **IMPERIO 150 EC** is virtually a Lepidoptera specific insecticide and is safe to most beneficial insects, including predatory mites. **IMPERIO 150 EC** is also effective in hot climatic conditions.

RAINFALL PROPERTIES

Once the spray deposit has dried on the target area, **IMPERIO 150 EC** will not wash off through rainfall or irrigation, and these conditions will therefore not influence the normal residual activity of **IMPERIO 150 EC**.

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 °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:
 - Reduced efficacy due to suspension and evaporation of small droplets in the air (Which leads to inadequate coverage).
 - 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.**

DIRECTIONS FOR USE

Use only as directed.

Thorough and even coverage of the crop is essential. Avoid application during the heat of the day or if the plants are wet or if rain is imminent.

COMPATIBILITY

The compatibility of **IMPERIO 150 EC** has not been fully investigated. The compatibility of **IMPERIO 150 EC** 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. When mixing **IMPERIO 150 EC** with other products, follow all label instructions of the respective products carefully. **IMPERIO 150 EC** is compatible with adjuvants such as H&R crop oil (L 6802).

MIXING INSTRUCTIONS

Half-fill the spray tank with suitable water, then add the required amount of **IMPERIO 150 EC** to the water in the tank while agitating. Fill the spray tank to the desired volume. Should tank mixtures with other products be made, follow the respective manufacturers' label recommendations. If tank mixtures are used, first add the **IMPERIO 150 EC** to a half-filled spray tank, followed by the tank mixture partner. Thereafter, top up with the required amount of clean water. **Tank mixtures must be sprayed out immediately and not be allowed to stand in the spray tank overnight.** Spraying equipment must be thoroughly flushed out at the end of the spraying operation.

Ensure constant and thorough agitation during mixing and spray operations.

RECOMENDATIONS

CROP/PEST	APPLICATION RATE	REMARKS
<p>Maize (including sweetcorn) (Grazing)</p> <p>Stalk borer larvae (<i>Busseola fusca</i>)</p>	<p>General ground application:</p> <p>300 ml / ha IMPERIO 150 EC + 500 ml / ha adjuvant such as H&R crop oil.</p> <p>Ground application over the plant row:</p> <p>3.0 ml / 100 m plant row IMPERIO 150 EC</p> <p>+</p> <p>3.3 ml / 100 m plant row H&R crop oil</p> <p>Application with Pivot irrigation system:</p> <p>300 ml / ha IMPERIO 150 EC</p>	<p>Apply in a minimum of 450 l water per ha. Apply IMPERIO 150 EC over the funnel of the plants and ensure thorough coverage of the foliage. In order to ensure optimum results, application must occur early in the morning when dew is present. The absence of rain or irrigation within 3 days following application may lead to decrease in control obtained by IMPERIO 150 EC spray mixtures. Water following application is required to wash the spray mixture into the funnel.</p> <p>Apply in 3 l water per 100 m plant row over the funnel of the plants and ensure thorough coverage of the foliage. In order to ensure optimum results, application must occur early in the morning when dew is present. The absence of rain or irrigation following application may lead to decrease in control obtained by IMPERIO 150 EC spray mixtures. Water following application is required to wash the spray mixture into the funnel.</p> <p>Under conditions of repeated infestation, apply IMPERIO 150 EC in a 10 – 14 day spray programme. Use the shorter interval when the pest infestation pressure is high or when the maize is growing rapidly. Do not exceed a maximum of 3 applications per season.</p> <p>Do not apply IMPERIO 150 EC to maize that is under drought stress. Larvae that may have already tunnelled into the funnels will not be controlled by IMPERIO 150 EC spray mixtures.</p> <p>For instructions for the control of stalkborer with IMPERIO 150 EC, see “IMPORTANT NOTES” below.</p> <p>When IMPERIO 150 EC is applied through a centre pivot irrigation system, the addition of an adjuvant is not necessary. However, if an adjuvant is added, a mineral oil type adjuvant such as H&R crop oil at 5 l / ha is recommended.</p> <p>Apply IMPERIO 150 EC as a preventative or early corrective foliar treatment.</p> <p>Under conditions of repeated infestation, apply IMPERIO 150 EC in a 10 – 14 day spray programme. Use the shorter interval when the pest infestation pressure is high or when the maize is growing rapidly. Do not exceed a maximum of 3 applications per season.</p> <p>Ensure that the pivot irrigation system complies with the following specifications before the application is started:</p> <ol style="list-style-type: none"> 1. The distribution coefficient of the pivot irrigation system must be >90%, and the pivot should not apply more than 5 mm (50 000 l) per hectare at the maximum speed. 2. All sieves of the pivot irrigation system must be cleaned before the application is started. 3. The injection pump of the pivot system must be calibrated according to the time it takes do for the pivot irrigation system to complete one full circle.

		<ol style="list-style-type: none"> 4. The pivot irrigation system must be set to the maximum speed so that as little water as possible (not more than 5 mm) is applied per hectare. 5. The IMPERIO 150 EC must be mixed with water in the application tank. The spray mixture must be stirred continuously before and after the application. 6. The IMPERIO 150 EC spray mixture must be injected into the main application line of the pivot irrigation system as soon as the irrigation system reaches the maximum speed. The position on the land must be marked when the spray mixture reaches the furthest end of the pivot irrigation system. 7. The pivot irrigation system must be allowed to complete one full circle from the aforementioned point. <p>Do not irrigate within 6 hours after an IMPERIO 150 EC application.</p>
<p>Peppers</p> <p>Tomato leaf miner moth larvae (<i>Tuta absoluta</i>)</p>	<p>Ground application</p> <p>300 mℓ / ha.</p> <p>(When applying > 1000 ℓ spray mixture per ha, use 30 mℓ / 100 ℓ water)</p>	<p>Preventative / Early corrective foliar application:</p> <ul style="list-style-type: none"> • Apply in 500 – 1500 ℓ water per ha. • Ensure even and thorough coverage of all foliage. In the case of trellised peppers, both sides of the pepper rows must be sprayed. • Monitor the adult moth flights. • Start application at egg-hatching or when the first erosions by the newly hatched larvae are observed. • If additional applications are required, re-apply at 8 day intervals. • IMPERIO 150 EC has an efficacy of around 85% against <i>Tuta absoluta</i> larvae. The addition of a suitably registered adjuvant may increase the efficacy to approximately 95% due to improved penetration of the active ingredient into the leaves. • Please see notes below

IMPORTANT NOTES ON STALK BORER IN MAIZE:

Stalk borer (*Busseola fusca*) larvae:

Commercial maize:

Apply preventatively or when eggs are found on 5% of the plants, or when 10% of the plants show shot hole damage symptoms (caused by small feeding larvae) on the maize funnels.

Sweetcorn:

Apply preventatively, or when egg laying starts, or with the first signs of shot hole damage symptoms on the maize funnels.

Important: Application must be done before the larvae migrate to the stems of the maize plants and when the larvae are smaller than the 2nd larval instar. Do not apply IMPERIO 150 EC on maize against stalk borer while the tassel is encircled by the flag leaf.

IMPORTANT NOTES ON TOMATO LEAF MINER MOTH LARVAE IN PEPPERS:

- Regular scouting of pepper fields is essential to determine the timing of the first and subsequent applications is required.
- **IMPERIO 150 EC** can be applied in an 8 – 14 day interval spray programme under conditions of continuous re-infestation. Use the shorter interval early in the growth season when the plants are growing actively.
- Do not exceed 6 applications of **IMPERIO 150 EC** per season. The alternation of **IMPERIO 150 EC** with insecticides having a different mode of action is recommended. Apply 2 – 3 applications of **IMPERIO 150 EC** consecutively (block application) before alternating to products with other modes of action.
- Most beneficial insects are unaffected by applications of **IMPERIO 150 EC**.
- The addition of a suitably registered adjuvant or wetter is recommended to improve coverage.

CROP/PEST	APPLICATION RATE	REMARKS
<p>STONE FRUIT (Peaches and Nectarines)</p> <p>African (American) bollworm (<i>Helicoverpa armigera</i>)</p>	<p>30 ml /100 l water</p>	<p>Foliar application:</p> <ul style="list-style-type: none"> • Apply as a full cover spray at 500 – 2000 l spray mixture per ha. • Apply preventatively or when eggs or larvae are present, but before the larvae enter the fruit. A follow – up application may be needed 10 – 14 days later depending on the re – infestation of the pest. • Ensure even and thorough coverage of the whole tree. <p>Do not exceed a maximum of 2 applications of IMPERIO 150 EC in total per season on the crop.</p>

The addition of a non-ionic adjuvant to the spray mixture is recommended to improve coverage.

ACKNOWLEDGEMENT OF TRADEMARKS

H&R Crop oil (L 6802)

H&R Global Special Product Sales (Pty) Ltd.

WAARSKUWINGS

Onthoudingsperiodes:

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

Mielies en Suikermielies (beweiding)	42 dae
Perskes.....	28 dae
Rissies.....	1 dag

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. Indien behandelde gewasse vir uitvoer bestem is, moet die betrokke invoerder of uitvoerliggaam genader word rakende die Maksimum Residuvlakke (MRL) en voorgestelde onthoudingsperiodes vir die gebruik van die produk.

- Moenie bewei of behandelde gewas as voer gebruik nie.
- Hanteer versigtig.
- Mag velsensitiwiteit met aanraking veroorsaak.
- Skadelik indien ingesluk, ingeasem en deur kontak.
- Giftig vir diere, bye, visse en ander waterorganismes (Verwys na Gebruiksbeperkings: BYE)
- Bêre in die oorspronklike houer in 'n koel droë plek.
- Bêre weg van kos en voer.
- Hou produk weg van lig.
- Hou buite bereik van kinders, oningeligte persone en diere.
- Die gebruik van hierdie produk op 'n manier of op 'n tydstip teenstrydig met die etiketaanwysings mag oormatige residue, asook ander ongewensde resultate, veroorsaak.
- Moenie hierdie produk op enige wyse teenstrydig met die etiketaanbevelings gebruik nie.
- In geval van mens- of diervergiftiging: **Verkry onmiddellik mediese bystand en toon hierdie etiket aan die persoon.**
- **Herbetreding:** Moenie die behandelde gebied binne een dag betree, tensy beskermende oorklere gedra word.
- **Lugtoediening:** Stel al die inwoners in die onmiddellike omgewing van die gebied wat gespuit gaan word in kennis en reik die nodige waarskuwings uit. Moenie oor water toedien of toelaat dat die spuitnewel wegdryf en gebiede besoedel wat nie behandel word nie.
- **IMPERIO 150 EC** is sonder enige fitotoksiseitskade op die mees belangrikste kommersiële kultivars getoets. Meer sensitiewe kultivars mag in die toekoms vrygestel word wat eers getoets moet word; hiervoor moet **IMPERIO 150 EC** 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 word nie en die voorkoms van weerstand van die plaë teen die betrokke middel, sowel as die metode, tyd en akkuraatheid van die 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 voor kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

VOORSORGMAATREËLS

- Moet nie die dampe of spuitnewel inasem nie.
- Alle persone wat in direkte kontak met die produk kom, ook die merkers, moet beskermende oorklere, handskoene, stewels en gesigskerm dra.
- Was hande, arms en gesig deeglik met seep en water na gebruik, of in die geval van toevallige velkontak.
- Was besoedelde klere onmiddellik na gebruik.
- Verwyder onmiddellik alle besoedelde klere en skoene.
- Moet nie eet, drink of rook tydens vermenging of toediening van die produk of voordat hande en gesig gewas is nie.
- Vermy wegdrywing van spuitnewel na ander gewasse, weiding, riviere, damme en gebiede wat nie behandel moet word nie.
- **Moenie** spuit gedurende periodes waar bye aktief is nie.

- Maak toedieningsapparaat voor en na gebruik skoon. Uitspoelwater moet nie gewasse, weidings, riviere, damme of boorgate besoedel nie.
- Voorkom die besoedeling van voedsel, voer, drinkwater en eetgerei.
- Keer die leë houër om oor die spuittenk of mengbak en dreineer vir minstens 30 sekondes nadat die vloeï tot 'n gedrup verminder het. Spoel die houër daarna **drie keer** uit met 'n volume water gelykstaande aan 'n minimum van een derde van die inhoud van die houër. Gooi die spoelwater by die inhoud van die spuittenk voordat die houër op die voorgeskrewe manier vernietig word.
- **Moenie** die houër hergebruik of vir enige ander doel gebruik nie.
- Leë houërs moet vernietig word deur dit plat te maak, gate daarin te maak en by 'n goedgekeurde stortingsterrein te begrawe.

GEBRUIKSBEPERKINGS

- Konsulteer met die verkoopsagent of plaaslike verspreider vir "op die plaas"-advies voordat **IMPERIO 150 EC** gebruik word.
- Moenie op enige gewas of situasie toedien wat nie op die etiket verskyn nie.
- Moenie 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 verteenwoordiger vooraf geraadpleeg is.

Bye

IMPERIO 150 EC is matig giftig teenoor heuningbye. **IMPERIO 150 EC** moet gevolglik nie direk op aktiewe bye gespuit word nie. Sodra neerslag droog is, kan bye toegelaat word om kos te gaan soek.

WEERSTANDBESTUUR

Vir weerstandsbestuur is **IMPERIO 150 EC** 'n groepkode 22A insekdoder. Enige insekpopulasie mag individue bevat wat natuurlike weerstand teen **IMPERIO 150 EC** of enige ander groepkode 22A insekdoder het. Die weerstandbiedende individue kan uiteindelik die insekpopulasie oorheers as hierdie insekdoder herhaaldelik aangewend word. Hierdie weerstandbiedende insekte sal waarskynlik nie deur **IMPERIO 150 EC** of enige ander groepkode 22A insekdoder beheer word nie.

Om weerstand teen insekdoders te vertraag:

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

Vir spesifieke inligting oor weerstandsbestuur kan die registrasiehouer van hierdie produk gekontak word.

Aangesien die voorkoms van weerstandbiedendheid moeilik is om te bepaal, is dit uiters belangrik om die behandelde gewasse noukeurig te ondersoek. Indien die behandeling nie effektief was met die gebruik van **IMPERIO 150 EC** soos voorgeskryf nie, mag daar 'n weerstandbiedende-populasie teenwoordig wees. Indien so 'n weerstandbiedende-populasie positief geïdentifiseer word, moet daar onmiddellik 'n insekdoderbespuiting wat 'n ander werkswyse het, waar daar geen bewys van weerstand voorkom, gedoen word.

Sommige insekte (*Helicoverpa armigera*, *Chrysodeixis acuta*, *Plutella xylostella* en *Phthorimae operculella*) het dit reggekry om weerstandbiedendheid teen huidige kommersiële beskikbare produkte te ontwikkel. Wanneer weerstandigheid voorkom, misluk aanbevole dosisse om die plaagpopulasie onder die ekonomiese drumpelwaarde te onderdruk. Die aanvang van weerstandigheid kan nie voorspel word nie en plaaslike adviseurs moet vir weerstandsbestuur-aanbevelings geraadpleeg word. As gevolg van **IMPERIO 150 EC** se unieke metode van werking is dit ideaal in bespuitingsituasies waar weerstandsbestuur belangrik is. Terwyl daar geen bewyse van insekweerstand teen indosakarb is nie, sal die volgende riglyne die effektiewe leeftyd van die produk verleng:

5. Indien toepaslik, moet **IMPERIO 150 EC** met produkte van verskillende chemiese groepe (karbamate, piretroïede, organofosfate en IGR) afgewissel word. Slegs geregistreerde produkte van hierdie groepe mag gebruik word. Moenie die maksimum hoeveelheid **IMPERIO**

150 EC toedienings per seisoen, soos in die **GBRUIKSAANWYSINGS** aangedui, oorskry nie.

6. Moniteer insekpopulasies en dien **IMPERIO 150 EC** volgens die etiketvoorskrif toe wanneer plaaslik bepaalde drumpelwaardes bereik word. Meer as een bespuiting mag nodig wees vir enige infestasië. By sekere gewasse moet **IMPERIO 150 EC** voorkomend toegedien word.
7. Die etiketvoorskrifte moet noukeurig gevolg word vir die presiese bepaling van die dosis, spuitintervalle asook die ideale tyd van die **IMPERIO 150 EC** toediening.
8. **IMPERIO 150 EC** is veilig vir voordelige insekte en myte. Die voordelige insekte wat oorbly na 'n behandeling kan help met die beheer/verminderinge van die peste se herinfestasië. Hierdie oorblywende voordelige insekte plaas verdere druk op die insekpopulasië en help dus in die verlagings van die weerstandspotensiaal.

SIMPTOME VAN MENSLIKE VERGIFTIGING

Mag oogskade veroorsaak.

Mag velskade veroorsaak.

In ernstige gevalle mag onwillekeurige defekasië, bradikardie, hipotensie, longedeem, stuiptrekkings, koma en dood agv asemhalingsnood of hartaanval, voorkom.

NOODHULPBEHANDELING

- **Velkontak:** Was onmiddellik die aangetaste gedeelte deeglik met seep en koue water. Moenie vel vryf nie. Verwyder besoedelde klere en was voor hergebruik. Indien irritasië voortduur, moet mediese advies gesoek word. Noodhulppersoneel moet handskoene dra en kontaminasië vermy. **Verkry mediese aandag.**
- **Oogkontak:** Indien in die oë beland, hou ooglede oop terwyl met groot hoeveelhede skoon water vir ten minste 15 minute uitgespoel word. Indien kontaklense teenwoordig is, verwyder eers na die eerste 5 minute en gaan voort met die uitspoeling van die oë. **Verkry mediese aandag.**
- **Ingesluk: Soek onmiddellik mediese aandag. Moenie braking induseer nie.** Moet nooit iets per mond vir 'n bewustelose persoon of iemand wat stuiptrekkings het, toedien nie. Indien die pasiënt wakker is en asemhaling is nie onderdruk nie, kan 1 – 2 glase water en, indien moontlik, 50 g geaktiveerde koolstof ingegee word.
- **Ingeasem:** Verwyder die geaffekteerde persoon na vars lug en hou die persoon kalm, warm en rustig. Indien asemhaling moeilik is, gee suurstof. Dié toediening moet deur 'n gekwalifiseerde persoon gedoen word. Indien asemhaling stop, bel vir 'n ambulans en dien kunsmatige asemhaling toe. **Verkry onmiddellik mediese aandag.**

NOTA AAN GENEESHEER

Behandeling met teenmiddel is nie van toepassing nie. Oorweeg maagspoeling en verhoed aspirasië. Moenie efedrien of soortgelyke middels toedien nie.

METODE VAN WERKING

IMPERIO 150 EC verhoed dat die natriumioon die senuweesels binnedring en gevolglike verlamming en dood van die plaaginsek veroorsaak. Dood geskied binne 1 – 2 dae, maar die vreetproses van die pes word binne 2 – 8 ure geïnhibeer. **IMPERIO 150 EC** is aktief as 'n larwedoder deur innames (maagaksie) en deur kutikulêre absorpsie (kontakaksie). **IMPERIO 150 EC** is ewe aktief op larwes van enige ontwikkelingsstadiums. **IMPERIO 150 EC** is feitlik 'n Lepidoptera spesifieke insekdoder en is veilig vir die meeste voordelige insekte, insluitend predatoriese myte. **IMPERIO 150 EC** is ook effektief in warm klimaatstoestande.

REËNVASTE EIENSKAPPE

Sodra die spuitmengsel op die teikengebied droog is, sal **IMPERIO 150 EC** nie deur reën of besproeiing afgewas word nie en sulke toestande behoort dus geen invloed op die normale nawerking van **IMPERIO 150 EC** te hê nie.

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 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 vereistes 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 spanwydte sal produseer.
- Al die spuitkoppe en atomiseerders moet in die binneste 60 - 75% van die vlerkspan geplaas word om te verhoed dat die druppels binne-in die vlerkvorteks inbeweeg.

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 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 tussen 3 en 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 swaaihigrometer bepaal, moet nie 8°C oorskry nie.
- Moenie tydens turbulente, onstabiele toestande, of gedurende die hitte van die dag wanneer stygende en dalende konveksie-windbewegings plaasvind, toedien nie.
- Moenie tydens temperatuur-inversie-toestande (deur bokant of binne-in die inversielaag 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 teikenarea lei).
 - iv. Skade aan ander sensitiewe gewasse en/of nie-teikenareas deur wegdrywing van die spuitwolk vanaf die teikenarea.
- Moenie 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 gespuit moet word.
- **Kry die versekering van die lugspuitoperateur dat al die bostaande vereistes nagekom sal word en dat die relevante data in 'n logboek aangeteken sal word vir toekomstige verwysing.**

GEBRUIKSAANWYSINGS

Gebruik slegs soos aangedui.

Deeglike en egalige bedekking van die gewas is belangrik. Vermoed toediening op die hitte van die dag, of wanneer plante nat is of wanneer dit binnekort gaan reën.

VERENIGBAARHEID

Die verenigbaarheid van **IMPERIO 150 EC** is nog nie ten volle ondersoek nie. Die verenigbaarheid van **IMPERIO 150 EC** met ander produkte hang van die formulerings van die betrokke produkte af, asook die kwaliteit van die spuitwater wat gebruik word. Omdat formulerings van tyd tot tyd kan verander, word dit aanbeveel dat 'n fisiese verenigbaarheidstoets uitgevoer word, voordat die tenkmengsel gemaak word. Wanneer **IMPERIO 150 EC** met ander produkte vermeng word, volg daardie produketikette se voorskrifte noukeurig. **IMPERIO 150 EC** is verenigbaar met bymiddels soos H&R crop oil (L 6802).

MENGINSTRUKSIES

Maak die spuittenk halfvol met skoon water en voeg die verlangde hoeveelheid **IMPERIO 150 EC** by die spuitwater terwyl dit geroer word. Maak tenk tot by die verlangde volume vol terwyl roering plaasvind. Indien tenkmengsels met ander produkte gemaak word, volg die gebruiksaanwysings op daardie spesifieke produketiket. Indien tenkmengsels gebruik word, voeg eerstens die **IMPERIO 150 EC** in 'n halfvol tenk by en daarna die tenkmengselvennoot. Hierna word die tenk volgemaak met die verlangde hoeveelheid skoon water. **Tenkmengsels moet onmiddellik uitgespuit word en nie toegelaat word om in die spuittenk oornag te staan nie.** Spuittoerusting moet deeglik na die spuitproses skoongespuit word.

Verseker konstante en deeglike roering tydens die vermenging- en spuitproses.

AANBEVELINGS

GEWAS/PLAAG		OPMERKINGS
<p>Mielies (insluitend suikermielies) (Beweiding)</p> <p>Stronkboorderlarwe (<i>Busseola fusca</i>)</p>	<p>Algemene grondtoediening:</p> <p>300 ml / ha IMPERIO 150 EC + 500 ml / ha byvoegmiddel soos H&R crop oil.</p> <p>Grondtoediening oor die plantry:</p> <p>3.0 ml / 100 m plantry IMPERIO 150 EC</p> <p style="text-align: center;">+</p> <p>3.3 ml / 100 m plantry H&R crop oil</p> <p>Toediening met spilpunt besproeiingstelsel</p> <p>300 ml / ha IMPERIO 150 EC</p>	<p>Dien in 'n minimum van 450 l water per ha toe. Dien IMPERIO 150 EC oor die kelke van die plante toe en verseker deeglike bedekking van die loof. Vir beste resultate, moet toediening vroeg soggens geskied wanneer daar dou teenwoordig is. Die afwesigheid van reën of besproeiing binne 3 dae na toediening mag tot verlaagde beheer met IMPERIO 150 EC spuitmengsel lei. Water na die toedieningsproses is noodsaaklik om die spuitmengsel in die kelke in te was.</p> <p>Dien in 3 l water per 100 m plantry oor die kelke van die plante toe en verseker deeglike bedekking van die loof. Vir beste resultate, moet toediening vroeg soggens geskied wanneer daar dou teenwoordig is. Die afwesigheid van reën of besproeiing binne 3 dae na toediening mag tot verlaagde beheer met IMPERIO 150 EC spuitmengsel lei. Water na die toedieningsproses is noodsaaklik om die spuitmengsel in die kelke in te was.</p> <p>Onder toestande van herhaalde infestasië, dien IMPERIO 150 EC in 'n 10 – 14 dae spuitprogram toe. Gebruik die korter interval wanneer die infestasiëdruk hoog is, of wanneer die mielies vining groei. Moenie die maksimum van 3 toedienings per seisoen oorskry nie.</p> <p>Moenie IMPERIO 150 EC op mielies toedien wat onder droogtestremming verkeer nie. Larwes wat alreeds in die kelke ingetoon het, sal nie met IMPERIO 150 EC spuitmengsels beheer word nie.</p> <p>Vir aanwysings vir die beheer van stronkboorder met IMPERIO 150 EC, sien “BELANGRIKE NOTAS” hieronder.</p> <p>Wanneer IMPERIO 150 EC deur 'n spilpuntbesproeiingstelsel toegedien word, is dit nie nodig om 'n byvoegmiddel saam toe te dien nie. Indien 'n byvoegmiddel egter wel saam toegedien word, word 'n minerale olie tipe benatter soos H&R crop oil teen 5 l / ha aanbeveel.</p> <p>Dien IMPERIO 150 EC as 'n voorkomende of vroeë korrektiewe blaarbehandeling toe.</p> <p>Onder toestande van herhaalde infestasië, dien IMPERIO 150 EC in 'n 10 – 14 dae spuitprogram toe. Gebruik die korter interval wanneer die infestasiëdruk hoog is, of wanneer die mielies vining groei. Moenie die maksimum van 3 toedienings per seisoen oorskry nie.</p> <p>Verseker dat die spilpuntbesproeiingstelsel aan die volgende spesifikasie voldoen alvorens met toediening begin:</p> <ol style="list-style-type: none"> 8. Die distribusie-koëffisiënt van die spilpuntbesproeiingsstelsel moet >90% wees, en die spilpunt moet nie meer as 5 mm (50 000 l) per hektaar teen maksimum spoed, toedien nie. 9. Alle siwwe van die spilpuntbesproeiingsstelsel moet voor toediening skoongemaak word.

		<p>10. Die inspuitingspomp van die spilpunt moet gekalibreer word volgens die tyd wat dit vir die spilpuntbesproeiingstelsel sal neem om een sirkel te voltooi.</p> <p>11. Die spilpuntbesproeiingstelsel moet op maksimum spoed gestel word, sodat so min as moontlik water (nie meer as 5 mm) per hektaar toegedien word.</p> <p>12. Die IMPERIO 150 EC moet in die toedieningstenk met water gemeng word. Die spuitmengsel moet voortdurend voor en na toediening geroer word.</p> <p>13. Die IMPERIO 150 EC spuitmengsel moet in die hooftoevoerlyn van die spilpuntbesproeiingstelsel ingespuut word sodra die besproeiingstelsel maksimum spoed bereik het. Merk die posisie in die land wanneer die spuitmengsel die verste punt van die spilpuntbesproeiingstelsel bereik het.</p> <p>14. Laat die spilpuntbesproeiingstelsel 'n volle sirkel vanaf laasgenoemde punt voltooi.</p> <p>Moenie binne 6 ure na 'n IMPERIO 150 EC toediening besproei nie.</p>
<p>Rissies</p> <p>Tamatie bladmyner motlarwe (<i>Tuta absoluta</i>)</p>	<p>Grondtoediening</p> <p>300 ml / ha</p> <p>(Indien > 1000 l spuitmengsel per ha, gebruik 30 ml / 100 l water)</p>	<p>Voorkomende / Vroeë korrektiewe looftoediening:</p> <ul style="list-style-type: none"> • Dien toe in 500 – 1500 l water per ha. • Vereker egalige en deeglike bedekking van alle groenmateriaal. By opgeleide rissies, verseker dat beide kante van die rye gespuut word. • Moniteer die volwasse motvlugte. • Begin toediening met eierlegging of wanneer die eerste tekens (myne) van die jong larwes gesien word. • Indien addisionele toedienings noodsaaklik is, herbespuit met 8-dae intervalle. • IMPERIO 150 EC het 'n effektiwiteit van ongeveer 85% teen <i>Tuta absoluta</i> larwes. Met die byvoeging van 'n geskikte geregistreerde byvoegmiddel kan die effektiwiteit na ongeveer 95% verhoog word deur verbeterde penetrasie van die aktiewe bestanddeel in die blare. • Sien asseblief die belangrike notas hieronder.

BELANGRIKE NOTAS OOR STRONKBOORDER IN MIELIES:

Stronkboorder (*Busseola fusca*) larwe: Kommersiële mielies:

Dien voorkomend toe of wanneer eiers op 5% van die plante gekry word, of wanneer 10% van die plante haelgat simptome (deur klein voedende larwes veroorsaak) op die mieliekelke vertoon.

Suikermielies:

Dien voorkomend toe, of wanneer eierlegging begin, of met die eerste tekens van haelgatsimptome op die mieliekelke.

Belangrik: Toediening moet gedoen word voordat larwes na die stamme van mielieplante migreer en larwes moet kleiner as die 2de larf instar wees. Moenie IMPERIO 150 EC toedien op mielies teen stronkboorder as die pluim deur die vlagblaar omsluit word nie.

BELANGRIKE NOTAS OOR TAMATIE-BLADMYNERMOTLARWES IN RISSIES:

- Gereelde inspeksie van rissielande is noodsaaklik om die tydsberekening van die eerste bespuiting en opvolgtoedienings te bepaal.
- **IMPERIO 150 EC** kan in 'n 8 – 14 dag interval spuitprogram gebruik word onder toestande van aanhoudende her-infestasië. Gebruik die korter interval vroeg in die groeiseisoen wanneer die plante aktief groei.

- Moenie 6 toedienings van **IMPERIO 150 EC** per seisoen oorskry nie. Die afwisseling van **IMPERIO 150 EC** met insekdoders wat 'n ander metode van werking het, word aanbeveel. Dien 2 – 3 toedienings van **IMPERIO 150 EC** opeenvolgend (blokbespuiting) toe, voordat afgewissel word met produkte wat 'n ander metode van werking het.
- Die meeste voordelige insekte word nie deur **IMPERIO 150 EC** benadeel nie.
- Die byvoeging van 'n geskikte geregistreerde byvoegmiddel of benatter vir verbeterde bedekking word aanbeveel.

GEWAS/PLAAG	DOSIS	OPMERKING
<p>Steenvrugte (Perskes en Nektariene)</p> <p>Afrika (Amerikaanse) bolwurm (<i>Helicoverpa armigera</i>)</p>	<p>30 ml /100 l water</p>	<p>Looftoediening:</p> <ul style="list-style-type: none"> • Dien as 'n voldekbespuiting teen 500 – 2000 l spuitmengsel per ha. • Dien voorkomend toe of wanneer eiers en larwes teenwoordig is, maar voordat die larwes die vrugte penetreer. 'n Opvolgbespuiting mag 10 – 14 dae later nodig wees afhangend van die herinfestasië van die plaag. • Verseker egalige en deeglike bedekking van die hele boom. <p>Moenie die maksimum van 2 IMPERIO 150 EC bespuitings in totaal per seisoen op die gewas oorskry nie.</p>

Die byvoeging van 'n nie-ioniese byvoegmiddel by die spuitmengsel word aanbeveel om bedekking te verbeter.

ERKENNING VAN HANDELMERKE

H&R Crop oil (L 6802)

H&R Global Special Product Sales (Edms.) Bpk.