

# TRIPICRIN


## Soil Fumigant / Grondberokingsmiddel

Reg. No. / Nr. L8306 Act No. 36 of 1947 / Wet Nr. 36 van 1947

READ THE LABEL BEFORE USE / LEES DIE ETIKET VOOR GEBRUIK

KEEP OUT OF REACH OF CHILDREN AND ANIMALS / HOU BUIITE BEREIK VAN KINDERS EN DIERE

GROUP	3	11	FUNGICIDES
<b>Tripicrin</b> is a ready-to-use broad spectrum liquid soil fumigant for the pre-plant treatment of soil to control soil-borne pests. <b>FOR USE BY REGISTERED PEST CONTROL OPERATORS ONLY.</b>		<b>Tripicrin</b> is 'n gereed-vir-gebruik, breëspektrum, vloeibare grondberokingsmiddel vir die voor-plant behandeling van grond om grondgedraagte peste te beheer. <b>SLEGS VIR GEBRUIK DEUR GEREISTREERDE PLAAGBEHEEROPERATEURS.</b>	

GHS CLASSIFICATION: DANGER	GHS HAZARD STATEMENTS
	<ul style="list-style-type: none"><li>○ Fatal if inhaled or if swallowed.</li><li>○ Toxic in contact with skin.</li><li>○ Causes severe skin burns and eye damage.</li><li>○ Causes serious eye irritation. [vapour contact]</li><li>○ Causes damage to respiratory system and hemal system by inhalation.</li><li>○ Causes damage to respiratory system, hemal system, and liver through prolonged or repeated exposure.</li><li>○ Very toxic to aquatic life with long lasting effects.</li><li>○ Chemical under pressure: May explode if heated.</li></ul>
	GHS PRECAUTIONARY STATEMENTS
	<ul style="list-style-type: none"><li>○ Do not breathe gas or vapours.</li><li>○ Do not get in eyes, on skin, or on clothing.</li><li>○ Use only outdoors or in a well-ventilated area.</li><li>○ Wear protective gloves, eye and respiratory protection.</li><li>○ Wash hands and face thoroughly after handling. Do not touch eyes.</li><li>○ Do not eat, drink, or smoke when using this product.</li><li>○ Avoid release to the environment, [except for authorised use].</li></ul>

**ACTIVE INGREDIENT: Chloropicrin (trichloronitromethane) . . . 990 g/kg min.**  
**AKTIEWE BESTANDDEEL: Chloropikrien (trichloronitrometaan) . . . 990 g/kg min.**

Net mass / Netto massa: ..... (105 or/of 680, 85-315) kg



Registered by: / Geregistreeer deur:  
**Trical Crop Protection Africa (Pty) Ltd**  
Mpy. Reg. No. / Nr. 2011/130873/07  
P.O. BOX 46036  
DURBANVILLE, CAPE TOWN 7551  
REPUBLIC OF SOUTH AFRICA  
Tel. +27 861 111 998

Batch No. / Lot Nr. : .....  
Date of Manufacture / Datum van Vervaardiging : .....  
Expiry date / Vervaldatum : .....

UN No. / VN Nr. :

# 1580

## WARNINGS:

- Fatal if inhaled or if swallowed.
- Toxic in contact with skin.
- Causes severe skin burns and eye damage.
- Causes serious eye irritation. [vapour contact]
- Causes damage to respiratory system and hemal system by inhalation.
- Causes damage to respiratory system, hemal system, and liver through prolonged or repeated exposure.
- Very toxic to aquatic life with long lasting effects.
- Chemical under pressure: May explode if heated.
- RE-ENTRY INTERVAL – Entry by unauthorized persons into the application block is prohibited from the start of the application until 5 days after the application is complete.

**DISCLAIMER: ALTHOUGH THIS REMEDY HAS BEEN EXTENSIVELY TESTED UNDER A LARGE VARIETY OF CONDITIONS, THE REGISTRATION HOLDER DOES NOT WARRANT THAT IT WILL BE EFFICACIOUS UNDER ALL CONDITIONS BECAUSE THE ACTION AND EFFECT THEREOF MAY BE AFFECTED BY FACTORS SUCH AS ABNORMAL SOIL, CLIMATIC AND STORAGE CONDITIONS, QUALITY OF DILUTION WATER, COMPATIBILITY WITH OTHER SUBSTANCES NOT INDICATED ON THE LABEL AND THE OCCURRENCE OF RESISTANCE OF THE PESTS AGAINST THE REMEDY CONCERNED, AS WELL AS BY THE METHOD, TIME AND ACCURACY OF APPLICATION. THE REGISTRATION HOLDER FURTHERMORE DOES NOT ACCEPT RESPONSIBILITY FOR DAMAGE TO CROPS, VEGETATION, THE ENVIRONMENT, OR HARM TO MAN OR ANIMAL OR FOR LACK OF PERFORMANCE OF THE REMEDY CONCERNED DUE TO FAILURE OF THE USER TO FOLLOW THE LABEL INSTRUCTIONS OR TO THE OCCURRENCE OF CONDITIONS WHICH COULD NOT HAVE BEEN FORESEEN IN TERMS OF THE REGISTRATION. CONSULT THE SUPPLIER IN THE EVENT OF ANY UNCERTAINTY.**

## PRECAUTIONS:

- Do not breathe gas or vapours.
- Do not get in eyes, on skin, or on clothing.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves, eye and respiratory protection.
- Wash hands and face thoroughly after handling. Do not touch eyes.
- Do not eat, drink, or smoke when using this product.
- Avoid release to the environment, [except for authorised use].
- This fumigant is a highly hazardous material and must be handled with care by persons wearing the proper protective clothing and equipment, including a face shield.
- If a handler/applicator experiences sensory irritation (tearing or burning of the eyes or nose), an approved respirator must be worn.
- Never use mouth to blow out clogged lines, nozzles, etc.
- Remove clothing immediately if pesticide gets on clothing; then wash thoroughly and put on clean clothing.
- Wash all contaminated clothing with soap and hot water before reuse.
- Store product under lock and key, in a cool, dark, dry, well-ventilated area, away from food and feed.
- After handling, wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- DO NOT use containers or application equipment made of copper, magnesium, aluminium, or their alloys, as this fumigant may be corrosive to such metals.
- DO NOT use water to clean equipment; use diesel oil.
- Return all empty or partially used containers to registrant or distributor; DO NOT use for any other purpose.

**RELEVANT SUBSTANCE(S):**

Chemical Identity of Component	Synonym(s)	CAS Number	Concentration by weight %
Chloropicrin	Trichloronitromethane	76-06-2	100.0

**SYMPTOMS OF HUMAN POISONING:**

Early symptoms of overexposure are lachrymation, respiratory distress, and vomiting. Pulmonary edema may develop later.

**FIRST AID:**

- **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately. Specific treatment is urgent.
- **IF IN EYES:** Immediately rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get emergency medical help immediately [for liquid contact]. [For vapour contact], if eye irritation persists: Get medical help.
- **IF ON SKIN:** Take off immediately all contaminated clothing. Immediately rinse with water for several minutes. Get emergency medical help immediately. Wash contaminated clothing before reuse.
- **IF SWALLOWED:** Get emergency medical help immediately. [Dab material from mouth with dry cloth first, if possible.] Rinse mouth. Do NOT induce vomiting.
- **IF exposed or concerned:** Get emergency medical help immediately.
- Get medical advice if you feel unwell.

**IN ALL CASES OF OVEREXPOSURE, GET MEDICAL ATTENTION IMMEDIATELY. TAKE PERSON TO A DOCTOR OR TO AN EMERGENCY TREATMENT FACILITY.**

**NOTES TO PHYSICIAN:** No specific antidote known. Treat symptomatically.

**USE RESTRICTIONS:**

- DO NOT use when soil temperature is below 5°C.
- DO NOT use when soil temperature is above 30°C.
- DO NOT apply during unfavorable weather conditions. [Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist within an hour prior to sunset and continue past sunrise and may persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.]
- DO NOT fumigate when soil is very wet or very dry.
- DO NOT fumigate soils with greater than 25% clay content.
- DO NOT fumigate within 50 cm of roots of desirable vegetation.
- DO NOT plant or sow for at least 10 days after removal of polyethylene sheeting (plastic fumigation film), if used.
- DO NOT plant or sow if odour is present.

**MODE OF ACTION:** Direct toxicity to soil organisms, fungi, bacteria, insects and plants/seeds.

**DIRECTIONS FOR USE – Use only as directed.****APPLICATION TIMING**

Tripicrin is a pre-plant fumigant; it must be used prior to planting the crop, as it will cause injury to plants present at the time of fumigation and until the active ingredient has completely dissipated. Tripicrin can be applied at any time of the year when soil conditions permit. Conditions that allow rapid diffusion of the fumigant as a gas through the soil normally give the best results. Tripicrin does not provide residual control of soil pests, and thus will only kill pests present at the time of fumigation. The following soil temperature,

preparation and moisture conditions should exist at time of application. Failure to meet these conditions may result in unsatisfactory product performance.

### **SOIL CONDITIONS**

Optimal temperatures for application are between 15°C and 25°C at the intended depth of fumigation.

### **SOIL PREPARATION**

For best results, the area to be fumigated should be tilled to where control is desired and at a minimum the depth of application (20 to 50 cm). The surface should be generally free of large clods. Large clods can prevent effective soil sealing and reduce effectiveness of Tripicrin. Plant residues should be thoroughly incorporated into the soil prior to treatment to avoid interfering with application. Undecomposed plant material may harbour pests that will not be controlled by fumigation. Little or no crop residue should be present on the soil surface. Crop residue that is present should lie flat to permit the soil to be sealed effectively. Compacted soil layers within the desired treatment zone should be fractured before or during application of the fumigant. Deviation from the above conditions may result in unsatisfactory results.

### **SOIL MOISTURE**

It is critical to manage soil moisture properly before fumigation. Plan fumigation for seasons, crop rotations, or irrigation schedules which leave moisture in the soil. For fumigation depths of 40 to 45 cm (as for apple replants), the soil should be moist within a 40 cm radius upwards from the point of injection as determined by the feel method (see below). For all other applications, the soil must be moist from the soil surface to at least 30 cm deep as determined by the feel method (see below). The amount of moisture needed in this zone will vary according to soil type. If irrigation is not available and there is adequate soil moisture below 15 cm, it may be brought to the surface by disking or ploughing before or during the injection.

In general, no irrigation should immediately precede subsoiling or fumigation. However, when irrigation is available and surface soil moisture conditions are not likely to provide an adequate seal against fumigant loss, a very light sprinkler irrigation to wet the top 2.5 to 5 cm of soil may be used to bring soil moisture content to the desired level.

### **The following descriptions will aid in determining acceptable soil moisture conditions by the "feel method".**

For coarse soils (sand and loamy sand), there must be enough moisture to allow formation of a weak ball when compressed in the hand. Due to soil texture, this ball is easily broken with little disturbance. In loamy, or medium textured soils (coarse sandy loam, sandy loam and fine sandy loam), a soil sample with the proper moisture content can be formed into a ball which holds together with moderate disturbance, but does not stick between the thumb and forefinger. Fine textured soils (clay loam, silty clay loam, sandy clay, silty clay, sandy clay loam and clay), should be pliable and not crumbly, but should not form a ribbon when compressed between the thumb and forefinger.

### **APPLICATION METHODS AND EQUIPMENT**

- Apply via shank (chisel) injection rig or switch plough application.
- Before fumigation, be sure that the application equipment is properly calibrated.
- For shallow (injection depth 20 to 40 cm) broadcast work, use a shank spacing of 25 to 30 cm.
- For deep applications (injection depth 40-45 cm), a shank spacing of up to 60 cm may be used; however, it is recommended that the shank spacing not exceed 45 cm.

### **PLACEMENT OF FUMIGANT**

Tripicrin may be applied as either a broadcast (overall) or row (bed) treatment. It should be injected at least 20 cm below the final soil surface, although placement to 30 cm below the final soil surface is recommended. Deeper placement is recommended when fumigating soil to be planted to deep-rooted plants, such as perennial fruit and nut crops, or to control deeply distributed pests.

- Tarped bed and broadcast: The injection point should be a minimum of 20 cm from the nearest final soil/air interface (i.e., top of bed, for bed applications).
- Non-tarped bed: The injection point should be a minimum of 30 cm from the nearest final soil/air interface.
- Non-tarped broadcast: The injection point should be a minimum of 30 cm from the nearest final soil/air interface.

- Non-tarped deep broadcast: The injection point should be 40-45 cm from the nearest final soil/air interface.

### **SOIL SEALING**

Sealing the soil after application is very important. The soil should be sealed immediately after injection. There are various methods to seal the surface of the soil, as follows.

- For shallow (injection depth 20 to 30 cm) broadcast and/or wide-bed applications, the soil should be sealed with polyethylene sheeting (plastic fumigation film/tarp) or by means of a roller, cultipacker, or similar equipment.
- For deeper applications (injection depth 30-45 cm), seal with polyethylene sheeting or by means of a disk, roller, cultipacker, or similar equipment.
- For row and/or narrow-bed applications, sealing can be accomplished with polyethylene sheeting or by use of a bed press, ring roller, or similar equipment.
- For non-tarped applications, the soil surface should be capped with irrigation, by saturating the top 20 mm of soil with water. Repeated irrigation may be required during the treatment period, to reduce cracking of the soil cap.

### **TREATMENT/EXPOSURE PERIOD**

If used, the polyethylene sheeting may be removed after 5 days. For all other seals, leave the soil undisturbed for 7 days before cultivating to aerate the soil. If the polyethylene sheeting is to be left in place as a mulch, holes for planting can then be punched. Cold and/or wet soil conditions may require a longer treatment/exposure period. Do not cultivate the soil if it is too wet for proper tillage.

### **DAYS TO PLANTING**

Do not plant for at least 10 days after the plastic fumigation film has been removed or after holes have been punched. For all other seals, do not plant for 7 days after the initial cultivation. Longer aeration periods may be required if soils are wet, cold, or heavy (high clay/silt content).

DO NOT PLANT if odour is present. If odour is present after the aeration period, it may be necessary to cultivate the soil multiple times before planting or sowing. Break the crust of the soil, if necessary, by cultivating with a clean implement, thus allowing the soil to aerate.

### **FERTILIZATION**

Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. To avoid ammonia injury and/or nitrate starvation to crops, avoid using fertilizers containing ammonia salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is about 20°C. Liming highly acid soils before fumigation stimulates nitrification and may also reduce the possibility of ammonia toxicity.

### **RECONTAMINATION**

- Avoid re-infestation of treated soil. Do not use transplants, tools, or crop remains infested with soil-borne plant parasitic pests and weed seeds. Clean application equipment carefully before and after use.
- Do not contaminate fumigated areas by walking from non-fumigated to fumigated soil.
- If the treated area is in a location where flooding or surface runoff of water is possible after rains, make sure that there is adequate drainage in the treated area.
- This product cannot be expected to control pests found at soil depths which exceed the effective depth of fumigation, nor can it be expected that this product will control pests outside the effective fumigation zone.

**DOSAGE / RATE TABLE**

**TRIPICRIN SOIL FUMIGANT**

<b>CROP</b>	<b>PROBLEM / PEST</b>	<b>DOSAGE</b>	<b>REMARKS</b>
<b>ALL ANNUAL CROPS</b> <b>including:</b> potatoes, vegetables and tobacco	Soil-borne fungal diseases, including species of: <i>Verticillium</i> <i>Fusarium</i> <i>Pythium</i> <i>Phytophthora</i> <i>Rhizoctonia</i> <i>Sclerotium</i> <i>Macrophomina</i> Bacterial wilts, including: <i>Streptomyces scabies</i> (potato scab) wireworms nematodes insects weeds	200 to 690 kg/ha	Pre-plant soil fumigation  Use lower rates on lighter soils (< 10% clay, such as sand or sandy loam).  Use higher rates on heavier soils (10-25% clay, such as silt or clay loam).
<b>ALL PERENNIAL CROPS</b> <b>including:</b> fruit trees, nut trees and strawberries			

**CONTAINER STORAGE, HANDLING AND SHIPPING:**

Store locked up in a well-ventilated place. Keep containers tightly closed. Store containers upright, secured to a rack or wall, to prevent tipping. DO NOT subject containers to rough handling or mechanical shock, such as dropping, bumping, dragging, or sliding. DO NOT use ropes, slings, hooks, tongs, or other similar handling devices for unloading containers. Transport containers using a hand truck, fork truck, or other device to which the containers can be firmly secured. Open containers only in a well-ventilated area. For cylinders, remove the valve protection bonnet and safety cap only when fumigant is about to be removed from the cylinder; then re-secure the bonnet and cap when the cylinder is not in use or is empty. For drums, the bung(s) must be kept secured in place when the drum is not in use. DO NOT ship containers without safety caps and valve protection bonnets or bungs secured.

**SPILL AND LEAK PROCEDURES:**

Evacuate everyone from the immediate area of the spill or leak. For entry into affected area to correct problems, wear the protective clothing and equipment described above. Move leaking or damaged containers outdoors or to an isolated location. Observe strict safety precautions. Work upwind, if possible. Allow spilled fumigant to evaporate or to absorb onto vermiculite, dry sand, earth, or similar absorbent material. Dispose of contaminated material on site or at an approved disposal facility. Only correctly trained and equipped handlers are permitted to perform such cleanup. DO NOT permit entry into the spill or leak area by any other person until the concentration of chloropicrin is measured to be 0.15 ppm or less.

**FOR CHEMICAL EMERGENCY (Spill, Leak, Fire, Exposure, or Accident),**

**Call CHEMTREC: 0-800-983-611 (24 hours)**

#### WAARSKUWINGS:

- Dodelik indien ingeasem of ingesluk word.
- Giftig in aanraking met vel.
- Veroorsaak ernstige velbrandwonde en oogskade.
- Veroorsaak ernstige oogirritasie. [damp kontak]
- Veroorsaak skade aan respiratoriese stelsel en hemale stelsel deur inaseming.
- Veroorsaak skade aan respiratoriese stelsel, hemale stelsel en lewer deur langdurige of herhaalde blootstelling.
- Baie giftig vir waterlewende organismes met landdurige gevolg.
- Chemies onder druk: Kan ontplof as dit verhit word.
- HERTOEGANGSINTERVAL – Betreding deur ongemagtigde persone tot die aansoekblok is verbied vanaf die begin van die aansoek tot 5 dae nadat die aansoek voltooi is.

**VRYWARING: ALHOEWEL HIERDIE MIDDEL OMVATTEND ONDER 'N GROOT VERSKEIDENHEID TOESTANDE GETOETS IS, WAARBORG DIE REGISTRASIEHOUER NIE DAT DIT ONDER ALLE TOESTANDE DOELTREFFEND SAL WEES NIE, AANGESIEN DIE WERKING EN EFFEK DAARVAN BEÏNVLOED KAN WORD DEUR FAKTORE SOOS ABNORMALE GROND-, KLIMAATS- EN BERGINGSTOESTANDE, VERENIGBAARHEID MET ANDER STOWWE WAT NIE OP DIE ETIKET AANGEDUI IS NIE EN DIE VOORKOMS VAN WEERSTAND VAN DIE PESTE TEEN DIE BETROKKE MIDDEL, SOWEL AS DIE METODE, TYD EN AKKURAATHEID VAN TOEDIENING. VERDER AANVAAR DIE REGISTRASIEHOUER NIE VERANTWOORDELIKHEID VIR SKADE AAN GEWASSE, PLANTEGROEI OF DIE OMGEWING, OF VIR NADELIGE EFFEK OP MENS OF DIER, OF VIR GEBREK AAN PRESTASIE AS GEVOLG VAN DIE VERSUIM VAN DIE GEBRUIKER OM ETIKETAANWYSINGS NA TE KOM, OF AS GEVOLG VAN DIE ONTSTAAN VAN TOESTANDE WAT NIE KRAGTENS DIE REGISTRASIE VOORSIEN KON WORD NIE. RAADPLEEG DIE VERSKAFFER IN DIE GEVAL VAN ENIGE ONSEKERHEID.**

#### VOORSORGMATREËLS:

- Moet nie die gas of dampe inasem nie.
- Moet nie toelaat dat die produk in aanraking kom met die vel, oë en/of met enige kledingstuk nie.
- Gebruik slegs buite of in 'n goed geventileerde area.
- Dra beskermende handskoene, oog- en asemhalingsbeskerming.
- Was hande en gesig deeglik na hantering. Moet nie aan oë raak nie.
- Moet nie eet, drink of rook wanneer hierdie produk gebruik word nie.
- Vermy vrystelling na die omgewing, [behalwe vir gemagtigde gebruik].
- Hierdie berokingsmiddel is baie gevaarlik en moet met uiterste sorg hanteer word. Hierdie middel mag slegs deur geregistreerde plaagbeheeroperateurs of persone onder die direkte toesig van opgeleide persone hanteer word.
- Indien 'n hanteerder sensoriese irritasie (oë of neus wat traan of brand) ervaar, moet hy 'n goedgekeurde respirator dra.
- Moet nooit verstopte lyne, neusstukke ens. per mond uitblaas nie.
- Verwyder klere onmiddellik indien plaagdoder op klere beland het; was dan deeglik en trek skoon klere aan.
- Was alle gekontamineerde klere met seep en warm water voor hergebruik.
- Berg agter slot en grendel in 'n koel, donker, droë, goed geventileerde stoor weg van voedsel en voer.
- Ná hantering moet die hanteerder sy hande deeglik was voordat hy iets eet of drink, kougom kou, rook of die toilet gebruik.
- MOENIE toerusting of toedieningshouders gebruik wat van magnesium, aluminium of hul allooie vervaardig is nie, aangesien hierdie berokingsmiddel sulke metale sal laat wegroes.
- MOENIE water gebruik om toerusting skoon te maak nie; gebruik diesel-olie.
- Stuur alle leë of half-gebruikte houders terug aan die verspreider of registrasiehouer; MOENIE die houer vir enige ander doel gebruik nie.

#### RELEVANTE STOF(TE):

Chemiese identiteit van komponent	Sinonieme(e)	CAS Nommer	Konsentrasie volgens gewig %
Chloropikrien	Trichloronitrometaan	76-06-2	100.0

## **SIMPTOME VAN VERGIFTIGING**

Vroeë simptome van oormatige blootstelling is tranerige oë, respiratoriese nood en braking. Oortollige vloeistof in die longe mag later ontwikkel.

## **NOODHULP**

- **INDIEN INGESAEM:** Verwyder persoon na vars lug en hou gemaklik vir asemhaling. Kry onmiddellik mediese noodhulp. Spesifieke behandeling is dringend.
- **INDIEN IN OË:** Spoel dadelik versigtig uit met water vir etlik minute. Verwyder kontaklense, indien teenwoordig en maklik om te doen. Hoe aan met spoel. Kry onmiddellik mediese noodhulp [vir vloeistofkontak]. [Vir dampkontak], indien oogirritasie voortduur: Kry mediese hulp.
- **INDIEN OP DIE VEL:** Trek onmiddellik alle bosoedelde klere uit. Spoel onmiddelik met water vit etlik minute. Kry onmiddellik mediese noodhulp. Was gekontameneerde klere voor hergebruik.
- **INDIEN INGESLUK:** Kry onmiddellik mediese noodhulp. [Dep materiaal eers uit die mond met 'n droë lap, indien moontlik.] Spoel mond uit. Moet nie vomering induseer nie.
- **INDIEN blootgestel of bekommerd:** Kry onmiddellik mediese noodhulp.
- Kry mediese advies as jy onwel voel.

**IN ALLE GEVALLE VAN OORBLOOTSTELLING MOET MEDIESE HULP ONMIDDELIK GEKRY WORD. NEEM DIE PERSOON NA 'N DOKTER OF NA 'N NOODGEVALLE-BEHANDELINGFASILITEIT.**

## **NOTA AAN GENEESHEER**

Geen spesifieke teenmiddel is bekend nie. Behandel volgens simptome. Die produk bevat gedistilleerde petroleum. Braking mag aspirasie pneumonie veroorsaak.

## **GEBRUIKSBEPERKINGS:**

- MOENIE gebruik wanneer die grondtemperatuur laer as 5°C is nie.
- MOENIE gebruik wanneer die grondtemperatuur hoër as 30°C is nie.
- MOENIE toedien gedurende ongunstige weerstoestande nie. [Ongunstige weerstoestande blok die opwaartse beweging van lug, wat dan veroorsaak dat die berokingsmiddel se dampe naby aan die grond vasgevang word. Die gevolglike lugmassa kan vanaf die perseel in onvoorspelbare rigtings wegbeweeg. Hierdie toestande kom voor binne 'n uur voor sonsondergang, tot ná sonsopkoms, en mag voortduur tot so laat as namiddag. Ongunstige toestande is algemeen op aande met beperkte wolkbedekking en ligte tot geen wind. Hul teenwoordigheid kan aangedui word deur grondvog of mis en kan ook geïdentifiseer word deur rook van 'n grondbron wat sywaarts afdraai onder 'n "plafonlaag" en dan in 'n gekonsentreerde wolk sywaarts beweeg.]
- MOENIE berook wanneer die grond baie nat of baie droog is nie.
- MOENIE grond berook wat meer as 25% klei-inhoud het nie.
- MOENIE berook binne 50 cm vanaf wortels van gewenste plantegroei nie.
- MOENIE plant of saai vir ten minste 10 dae ná polistireenbedekking (plastiek berokingsfilm) verwyder is nie, indien gebruik.
- MOENIE plant of saai indien daar steeds 'n reuk teenwoordig is nie.

**MODE VAN AKSIE:** Direkte toksisiteit vir grondorganismes, swamme, bakterieë, insekte en plante/sade.

**GEBRUIKSAANWYSINGS - Gebruik slegs soos aangedui.**

## **TYDSBEREKENING VIR TOEDIENING**

Tripicrin is 'n voor-plant-berokingsmiddel; dit moet gebruik word voordat die gewas geplant word, aangesien dit die bestaande plante kan beskadig wanneer beroking toegepas word, en totdat die aktiewe bestanddeel heeltemal versprei het. Tripicrin kan enige tyd van die jaar toegedien word, indien grondtoestande dit toelaat. Toestande wat die vinnige diffusie van die berokingsmiddel as 'n gas deur die grond moontlik maak, lewer normaalweg die beste resultate. Tripicrin verskaf nie beheer van agtergeblewe grondpeste nie en sal dus slegs peste doodmaak wanneer die beroking uitgevoer word. Die ondergenoemde grondtemperatuur, -voorbereiding en -vogtoestande behoort teenwoordig te wees wanneer toediening plaasvind. Indien nie aan hierdie voorwaardes voldoen word nie, kan dit op onbevredigende produkprestasie uitloop.



## **GRONDTOESTANDE**

Optimale temperature vir toediening is tussen 15 °C en 25 °C op die beoogde berokingsdiepte.

## **GRONDVOORBEREIDING**

Vir die beste resultate moet die area wat berook gaan word, bewerk word tot waar beheer verlang word en op 'n minimumdiepte van toediening (20-50 cm). Die oppervlak moet in die algemeen sonder groot kluite wees. Groot kluite kan doeltreffende grondverseëling voorkom en Tripicrin se doeltreffendheid verminder. Plantreste moet voor behandeling deeglik in die grond ingewerk word ten einde inmenging met die toediening te vermy. Onafgebreekte plantmateriaal kan peste bevat wat nie deur beroking beheer sal word nie. Baie min of geen gewasreste behoort op die grondoppervlak teenwoordig te wees. Gewasreste wat wel teenwoordig is, moet plat lê sodat die grond doeltreffend verseël kan word. Gekompakteerde grondlae binne die verlangde behandelingsone moet voor of tydens toediening van die berokingsmiddel opgebreek word. Indien daar van die bogenoemde voorwaardes afgewyk word, sal dit tot onbevredigende resultate.

## **GRONDVOG**

Dit is van kardinale belang dat die grondvog behoorlik voor beroking bestuur word. Beplan beroking vir seisoene, gewaswisseling of besproeiingskedules wat vog in die grond sal laat agterbly. Vir berokingsdieptes van 40-45 cm (soos vir die herplant van appels) moet die grond binne 'n radius van 40 cm en meer vanaf die toedieningspunt klam wees, soos bepaal deur die voel-metode (sien hieronder). Vir alle ander toedienings moet die grond vanaf die grondoppervlak minstens 30 cm diep klam wees, soos bepaal deur die voel-metode (sien hieronder). Die hoeveelheid vog wat in hierdie sone nodig is, sal ooreenkomstig die grondsoort wissel. Indien besproeiing nie beskikbaar is nie en daar wel voldoende grondvog van minder as 15 cm is, kan dit na die oppervlak gebring word deur die grond voor of tydens die toediening te eg of te ploeg.

In die algemeen behoort geen besproeiing onmiddellik voor grondbreking of beroking plaas te vind nie. Wanneer besproeiing egter beskikbaar is en die toestand van die oppervlakgrondvog waarskynlik nie 'n voldoende seël teen berokingsverlies sal verskaf nie, kan 'n baie ligte sprinkelbesproeiing gegee kan word om die boonste 2.5-5 cm grond nat te maak sodat die grondvoginhoud die verlangde vlak kan bereik.

## **Die volgende beskrywings sal meehelp om aanvaarbare grondvogtoestande deur middel van die voel-metode te bepaal:**

Vir growwe grondsoorte (sand en leemgrond) moet daar voldoende vog wees om die vorming van 'n sagte bal moontlik te maak wanneer dit in 'n mens se hand saamgepers word. Hierdie bal breek maklik met slegs 'n bietjie steurnis op grond van die grondtekstuur. In leemgrond of grond met 'n medium tekstuur (growwe sandleem, sandleem en fyn sandleem) sal 'n grondmonster met die verlangde voginhoud in 'n bal gevorm kan word wat nie met matige steurnis sal verkrummel nie, maar wat nie tussen die duim en voorvinger sal vasklou nie. Grond met 'n fyn tekstuur (kleileem, slikagtige kleileem, sandklei, slikagtige klei, sandkleileem en klei) behoort soepel en nie krummelrig nie te wees, maar behoort 'n lint te vorm wanneer dit tussen 'n mens se duim en voorvinger saamgepers word.

## **TOEDIENINGSMETODES EN -TOERUSTING**

- Dien toe via die skag- (beitel-) inspuitboor of verander die ploegwyse.
- Maak seker dat die toedieningstoerusting voor beroking behoorlik gekalibreer is.
- Vir vlak (inspuitdiepte 20-40 cm) uitspreidingswerk moet 'n skagspasiëring van 25-30 cm gebruik word.
- Vir diep toedienings (inspuitdiepte 40-45 cm) kan 'n skagspasiëring van tot en met 60 cm gebruik word; daar word egter aanbeveel dat die skagspasiëring nie meer as 45 cm moet wees nie.

## **PLASING VAN BEROKINGSMIDDEL**

Tripicrin kan as óf 'n uitspreidings- (algehele) óf 'n ry- (bedding-) behandeling toegedien word. Dit behoort minstens 20 cm onder die finale grondoppervlak ingespuut te word, hoewel plasing tot 30 cm onder die finale grondoppervlak aanbeveel word. Dieper plasing word aanbeveel wanneer die grond waarin plante met diep wortelstelsels geplant gaan word, soos meerjarige vrugte- en neutbome, berook word, of om peste wat diep onder die grond is, te beheer.

- Bedding en uitspreiding met plastiekbedekking: Die inspuitpunt behoort 'n minimum van 20 cm vanaf die naaste finale grond-/lugkoppelvlak te wees (d.i. bo-op beddings, vir toediening in beddings).

- Bedding sonder plastiekbedekking: Die inspuitpunt behoort 'n minimum van 30 cm vanaf die naaste finale grond-/lugkoppelvlak te wees.
- Uitspreiding sonder plastiekbedekking: Die inspuitpunt behoort 'n minimum van 30 cm vanaf die naaste finale grond-/lugkoppelvlak te wees.
- Diep uitspreiding sonder plastiekbedekking: Die inspuitpunt behoort 'n minimum van 40-45 cm vanaf die naaste finale grond-/lugkoppelvlak te wees.

### **GRONDVERSEËLING**

Om grond onmiddellik na toediening te verseël, is baie belangrik. Die grond moet onmiddellik na toediening verseel word. Daar bestaan verskeie metodes om die grondoppervlak te verseël, naamlik:

- Vir vlak (inspuitdiepte 20-30 cm) uitspreiding- en/of wye-beddingtoediening behoort die grond met poliëtileenseil (plastiekberokingsseil) of met behulp van 'n roller, voorpakker of soortgelyke toerusting verseël te word.
- Vir dieper toedienings (inspuitdiepte 30-45 cm) behoort die grond met poliëtileenseil of met behulp van 'n eg, 'n roller, 'n voorpakker of soortgelyke toerusting verseël te word.
- Vir toedienings in rye en/of smal beddings kan verseëling gedoen word deur poliëtileenseil of 'n beddingpars, ringroller of soortgelyke toerusting te gebruik.
- Vir toedienings sonder plastiekseilbedekking behoort die grondoppervlak liggies besproei te word deur die boonste 20 mm grond met water te deurdrenk. Herhaalde besproeiing kan tydens die toedieningstydperk nodig wees om kraking van die boonste grondlaag te verminder.

### **BEHANDELINGS-/BLOOTSTELLINGSTYDPERK**

Indien dit gebruik is, kan die poliëtileenseil na vyf (5) dae verwyder word. Vir alle ander verseëlings moet die grond sewe (7) dae lank onverstoord gelaat word voordat die grond bewerk word om dit te belug. Indien die poliëtileenseil as grondbedekking in plek gelaat word, kan gate daarin gesteeek word vir plant. Koue en/of nat grondtoestande kan 'n langer behandelings-/bloomstellingstydperk vereis. Moenie die grond verbou indien dit te nat is om dit behoorlik te bewerk nie.

### **DAE VOOR PLANTING**

Moenie minstens tien (10) dae nadat die plastiekberokingslaag verwyder of gate daarin gemaak is, plant nie. Vir alle ander verseëlings moet minstens sewe (7) dae lank na die aanvanklike verbouing nie geplant word nie. Langer belugtingstye kan nodig wees indien die grond nat, koud of swaar (hoë klei-/slikinhoud) is.

MOENIE PLANT indien daar 'n reuk teenwoordig is nie. Indien daar na die belugtingstydperk 'n reuk teenwoordig is, kan dit nodig wees om die grond meermale te bewerk voordat geplant of gesaai kan word. Breek die grondkorslaag, indien nodig, deur met 'n skoon implement te werk en sodoende die grond te belug.

### **BEMESTING**

Berokings kan die vlak van ammoniakstikstof en oplosbare soute in die grond tydelik verhoog. Om te voorkom dat die gewasse skade ly a.g.v. 'n gebrek aan ammoniak en/of nitrate, moet bemestingstowwe wat ammoniaksoute bevat, nie gebruik word nie; gebruik slegs bemestingstowwe wat nitrate bevat totdat die gewasse goed gevestig is en die grondtemperatuur ongeveer 20 °C bereik. Deur kalk voor berokings by grond te voeg wat hoë vlakke suur bevat, stimuleer nitrifisering en kan die moontlikheid van ammoniaktoxisiteit verminder.

### **HERBESMETTING**

- Voorkom die herbesmetting van behandelde grond. Moenie uitplantings, gereedskap of gewasreste gebruik wat met grondgedraagte plantparasitiese peste en onkruidsaad besmet kan wees nie. Maak toedieningstoerusting deeglik skoon voor en na gebruik.
- Moenie berookte gebiede besmet deur vanaf nieberookte na berookte grond te stap nie.
- Indien die behandelde gebied geleë is waar vloede of oppervlakwater die grond moontlik na reënbuie kan wegspoel, moet u seker maak dat daar voldoende dreinerings in die gebied is.
- Daar kan nie van hierdie produk verwag word om peste te beheer wat op gronddieptes voorkom wat die doeltreffende berokingsdiepte oorskry nie; daar kan ook nie verwag word dat hierdie produk peste moet beheer wat buite die doeltreffende berokingsone voorkom nie.

**DOSISTABEL**  
**TRIPICRIN-GRONDBEROKINGSMIDDEL**

GEWAS	PROBLEEM / PES	DOSIS	OPMERKINGS
<b>ALLE EENJARIGE GEWASSE</b> <b>insluitende</b> aartappels, groente en tabak	Grondgedraagte swamsiektes insluitende spesies van <i>Verticillium</i> <i>Fusarium</i> <i>Pythium</i> <i>Phytophthora</i> <i>Rhizoctonia</i> <i>Sclerotium</i> <i>Macrophomina</i>	200-690 kg/ha	Voorplant-grondberoking  Gebruik laer dosisse op ligter grondsoorte (< 10% klei soos sand of sandleem).  Gebruik hoër dosisse op swaarder grondsoorte (10-25% klei soos slik of kleileem).
<b>ALLE MEERJARIGE GEWASSE</b> <b>insluitende</b> vrugtebome, neutebome en aarbeie	Bakteriese verleppling, insluitende <i>Streptomyces scabies</i> (aartappelskurfsiekte) draadwurms aalwurms insekte onkruid		

**BERGING, HANTERING EN VERSKEPING VAN HOUERS:**

Berg toegesluit in 'n goed geventileerde plek. Hou houers dig toe. Stoor houers regop, vasgemaak teen 'n muur of op 'n rak om te voorkom dat dit omval. MOENIE houers blootstel aan hardhandige hantering of meganiese skok deur dit te laat val, stamp, sleep, of skuif nie. MOENIE toue, hake, tange of soortgelyke voorwerpe gebruik om die houers af te laai nie. Vervoer houers deur van tweewiel-trollies, vorkhysers of enige ander toestelle waaraan die houers stewig vasgemaak kan word gebruik te maak. Maak houers slegs in 'n goed geventileerde area oop. By silinders moet die beskermingsklep slegs verwyder word wanneer die berokingsmiddel daaruit verwyder gaan word; plaas die beskermingsklep en die veiligheidsklep terug op die silinder ná gebruik, of wanneer nie in gebruik nie. MOENIE die houers vervoer sonder die beskermingsklep of die veiligheidsklep nie.

**PROSEDURES VIR STORTING EN LEKKASIE**

Ontruim die onmiddellike area waar die lekkasie voorkom. Wanneer die besoedelde area herbetree moet word om die lekkasie reg te maak, maak seker dat die korrekte beskermende klere en toerusting, soos hier bo aangedui, gebruik word. Skuif die silinders wat beskadig is of lek na buite of na 'n geïsoleerde area. Beoefen streng veiligheidsmaatreëls. Werk windop, indien moontlik. Laat die gemorsde berokingsmiddel verdamp of laat dit geabsorbeer word deur droë sand, grond, of 'n soortgelyke absorberingsmiddel. Raak ontslae van die besmette materiaal op die perseel of by 'n geskikte opbergingsfasiliteit. Slegs korrek-opgeleide en toegeruste hanteerders mag toegelaat word om so 'n skoonmaakproses uit te voer. MOENIE toegang toelaat tot die gekontamineerde area deur enige ander persoon totdat die konsentrasie van chloropikrien gemeet is as 0.15 dpm of minder nie.

**VIR CHEMIESE NOODGEVALLE (Storting, Lekkasie, Brand, Blootstelling, of Ongeluk)**

Kontak CHEMTREC: 0-800-983-611 (24 uur)