Label Size 510 x 340mm

DANGEROUS POISON

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

TELONE™

by TELEOS

Soil Fumigant

ACTIVE CONSTITUENTS:
945 g/kg (1150 g/L) 1,3-DICHLOROPROPENE

FOR THE CONTROL OF PLANT PARASITIC NEMATODES IN SOIL AS SPECIFIED IN THE DIRECTIONS FOR USE TABLE

Supply of this product may be restricted by SUSMP Appendix J to persons authorised under relevant State legislation.

FOR USE ONLY BY FUMIGATORS ACCREDITED UNDER THE TELONE™ TRAINING PROGRAM

NET CONTENTS:
80 kg

APVMA Approval No. 60921/149934

TriCal AUSTRALIA

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HEALTHY FIELDS. HEALTHY YIELDS.

DIRECTIONS FOR USE:

RESTRAINTS

DO NOT use on extremely heavy clay soils.
DO NOT dilute with water.
DO NOT apply TELONE™ by Teleos Soil Fumigant through any type of irrigation system.
DO NOT use when soil temperature is below 5°C or above 27°C.
DO NOT treat soil when very wet or very dry.
DO NOT use transplants, tools or move crop residues that could carry soilborne pests from infested land onto treated areas.

Treatment Rates for Nematode Control

CROP	PEST	SOIL TYPE	TREATMENT[1]		CRITICAL COMMENTS
			Broadacre kg/ha (L/ha)	Rate / tyne in g/100 m of row (mL/100 m of row)[2]	
Vegetable crops[3]	Plant parasitic nematodes	Light soils (e.g., coarse-textured sands, sandy loams and loams).	100-135 (85-112)[4,3]	300-410 (250-340)[5]	**Preplant treatment only:** At time of application soil should be in good seed-bed condition, free of clods and undecomposed plant material and with adequate soil moisture. **Application timing, soil conditions and soil moisture, soil preparation and placement of fumigant, application methods, equipment and sealing the soil after application: See APPLICATION section.** **Exposure period:** Leave soil undisturbed for at least 7 days after treatment. **Aeration period before planting:** Use a minimum of 14 days (see also **Soil Fumigation Interval** under **APPLICATION** section). Longer intervals are required if the soil becomes cold or wet, and for deep-rooted tree, shrub and vine planting sites
		Heavy soils (e.g., fine-textured clay loams and clays or soils with very high organic matter such as peats).	285 (235)	875 (720)	
Field crops	Plant parasitic nematodes	Light soils (e.g., coarse-textured sands, sandy loams and loams).	100-135 (85-112)[5]	300-410 (250-340)[5]	
		Heavy soils (e.g., fine-textured clay loams and clays or soils with very high organic matter such as peats).	205 (168)	625 (515)	
Fruit and Nut crops, Ginger[6,7,8]		Light soils (e.g., coarse-textured sands, sandy loams and loams)	300-410 (250-325)[5]	930-1130 (765-930)[5]	
Nursery crops		All types	470-625 (390-515)[5]	1460-1900 (1205-1570)[5]	

1. **DO NOT** exceed specified maximum application rates.
2. Flow rates are based on 30.5 cm outlet spacing. Flow rates for alternate spacings can be calculated using the following formula: mL/100 m of row/outlet = 0.1 X rate in L/ha X outlet spacing in cm. See "TELONE™ by Teleos Soil Fumigants – A Guide to Application" manual for more detail on row spacings and flow rates.
3. Potatoes: Before fumigation, soil sampling for the type and number of pests present is recommended and can help determine the need for additional treatment with a contact nematicide. Pre-harvest tuber sampling for nematodes is also recommended. If the nematode population is high enough to damage the crop, potatoes can be harvested early. **DO NOT** store potatoes with a detectable nematode infestation.
4. For cyst-forming nematodes use at least 205 kg/ha (168 L/ha).
5. For high pest pressure use higher rates.
6. Pineapple: For best results, seal the soil with polyethylene film, which acts as a gas permeability barrier.
7. Tree Planting Sites: Apply 850 g (700 mL) of TELONE™ by Teleos Soil Fumigant at a single point in the centre of each planting site. For sites where no restrictive soil layers are present, the fumigant can be applied to a depth of 1.5 m using an injection auger, however, optimum results are obtained using a split application (half at 1.5 m and the rest at 0.5 m depth) and cover the replant sites with plastic sheeting. For best results prepare and treat planting sites in autumn and plant in the spring. Sites prepared by backhoeing to break up restrictive soil layers that may retard fumigation movement should be dug in the appropriate dimensions of 3 x 3 x 3 m; the hole should then be backfilled to a depth of 1.5 m.
8. For shallow-rooted plants grown only one year, use 170-300 kg/ha (140-250 L/ha) or 515-930 g/100 m row (425-765 mL/100 m row)/outlet.

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

THIS PRODUCT IS TOO HAZARDOUS FOR USE IN THE HOME GARDEN.

IN TASMANIA, THIS PRODUCT IS NOT TO BE SOLD OR USED WITHOUT A LICENCE FROM THE REGISTRAR OF PESTICIDES.

GENERAL INSTRUCTIONS

TELONE™ by Teleos Soil Fumigant is a liquid fumigant for preplant treatment of cropland soil that can be used as part of a management programme involving rotation, resistance varieties and other cultural practices designed to alleviate plant parasitic nematodes.

General Information

- Before fumigation, soil sampling for the type and number of pests present is recommended. In fields where pre-treatment soil samples indicate the presence of high population levels of nematodes, a successful fumigation cannot be expected to eradicate entire populations. Therefore, post-treatment sampling is recommended to determine the need for additional pest management practices.
- For best results, it may be necessary to treat annual crops every year.
- Fumigation may temporarily raise the level of ammonium nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertiliser are applied to soils before fumigation, especially if the soils are either cold, wet, acid or high in organic matter. To avoid injury to certain crops including beetroot, carrots, corn, radishes, cole crops, legumes (beans), lettuce and onions, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury or nitrate starvation (or both) to crops grown on high organic soils, **DO NOT** use fertilisers containing ammonium salts and use only fertilisers containing nitrates, until after the crop is well established and the soil temperature is above 18°C. Certain crops, including cotton, sugar cane and pineapple are tolerant to ammonia, and the above rule does not apply to them. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.
- Certain nursery crops such as citrus seedlings and vegetable crops such as cauliflower have shown evidence of phosphorus deficiency following fumigation. To avoid this possible effect, additional phosphate fertiliser (foliar applied) is recommended where experience indicates a deficiency may occur.

APPLICATION

Application Timing

TELONE™ by Teleos Soil Fumigant can be applied 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 best results.

Because TELONE™ by Teleos Soil Fumigant does not provide residual control of soil pests, it would be used as a preplant application before planting each crop. The following soil temperature and moisture conditions should exist at time of treatment. Failure to meet these conditions may result in unsatisfactory product performance.

Soil Conditions

Optimal temperatures for application are between 10°C and 20°C.

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. The soil must be moist from 5 cm below 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. The surface soil generally dries very rapidly and should not be considered in this determination. If there is insufficient moisture at the 5 cm to 15 cm depth, the soil moisture must be adjusted. 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 sub-soiling or fumigation; however, when irrigation is available and 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.

Soil Preparation

The soil should be free of clods. Large clods can prevent effective soil sealing and reduce effectiveness of TELONE™ by Teleos Soil fumigant. 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.

Placement of Fumigant

TELONE™ by Teleos Soil Fumigant may be applied as either a broadacre (overall) or row treatment. It must be placed at least 20 cm below the final soil surface. When soil conditions allow, placement a minimum of 35 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. For row application, the fumigant must be placed at least 30 cm from the nearest soil/air interface (e.g., furrow).

Application Methods and Equipment

Use equipment specifically designed for application of fumigants to soil. See "TELONE™ by Teleos Soil Fumigants – A Guide to Application" manual for more information.

Minimizing end row spillage: Product spillage at the end of rows should be minimized. An effective flow shutoff device must be used to prevent discharge of fluid at the end of rows. After shutting off flow, run tynes underground for 30 cm to limit spillage which may occur when the tyne is raised from the ground.

Broadacre Application: Choose application equipment which allows the deepest application and best soil seal under existing conditions.

The fumigant outlet spacing varies with the type of application equipment used:

With tyne equipment a fumigant tyne spacing of 30 cm is recommended. The outlet spacing for this equipment may be up to 1½ times the application depth but generally should be equal to the application depth and should not exceed the soil-shattering capability of the tynes.

Row Application (for row spacing greater than 60 cm): Use tyne equipment to treat a band of soil where the crop is to be planted, i.e., the plant row. When multiple tynes per plant row are used, space the tynes (fumigant outlets) 20 to 30 cm. Regardless of the number or spacing of tynes used, the fumigant must be placed at least 30 cm from the nearest soil/air interface (e.g., furrow). To prevent seed germination problems caused by improper seed-to-soil contact or improper seeding depth, **DO NOT** place the seed directly over the furrow left by the applicator tyne(s).

Sealing the Soil after Application

Immediately after tyne application of TELONE™ by Teleos Soil Fumigant, the soil must be "sealed" to prevent fumigant loss and ensure that an effective concentration of fumigant is maintained within the soil for a period of several days.

For broadacre treatment (flat fumigation), sealing can be accomplished with equipment that will uniformly mix the soil to a depth of 8 to 10 cm to effectively eliminate chisel or plough traces which can allow direct escape of the fumigant. A tandem disc or similar equipment may be used for this purpose. To maximise sealing, steps should also be taken to compact the soil surface to further retard the rate of fumigant loss by following with a ring roller or roller in combination with tillage equipment. Compaction of the soil surface alone does not effectively disrupt tyne or plough traces.

For row treatment, forming the beds at the time of application should be accomplished in a manner that places the fumigant at least 30 cm from the nearest soil/air interface (e.g., furrow). The closest soil/air interface could be the furrow for multiple tyne applications or the top of the beds for single tyne applications. Row treatments into pre-formed beds must be sealed by disrupting the tyne trace using press sealers, ring rollers, or by reforming the beds and following with such equipment.

Sealing can also be improved by applying non-perforated plastic film, such as polyethylene, over the entire area or in strips. Use of a film to seal the soil surface does not eliminate the need to eliminate chisel traces prior to application of the plastic film. Proper soil conditions at the time of application (see **Soil Preparation**) are important to ensure proper placement of fumigant (see **Placement of Fumigant**) and obtaining adequate sealing. Prior tillage should be adequate to eliminate clods and thoroughly mix crop residues into the soil.

Soil Fumigation Interval

Leave the soil undisturbed for at least 7 days after treatment and unplanted for at least 14 days after application of the fumigant. Longer intervals are required if the soil becomes cold or wet, and for deep-rooted tree, shrub and vine planting sites.

Allow the fumigant to dissipate completely before planting the crop. Seeds, previously soaked in water, may be used as a bioassay to determine if TELONE™ by Teleos Soil Fumigant is present in the soil at concentrations sufficient to cause plant injury. **DO NOT** plant if the odour of TELONE™ by Teleos Soil Fumigant is present within the zone of fumigation.

Recontamination Prevention

TELONE™ by Teleos Soil Fumigant will control pests that are present in the soil treatment zone at the time of fumigation. It will not control pests that are introduced into soil after fumigation. To avoid re-infestation of treated soil **DO NOT** use irrigation water, transplants, seed pieces, or equipment that could carry soilborne pests from infested land. Avoid contamination from moving infested soil onto treated beds through cultivation, movement of soil from below the treated zone, dumping contaminated soil in treated fields and soil contamination from equipment or crop remains. Clean equipment carefully before entering treated fields.

CLEANING EQUIPMENT

- Clean equipment of all soil or plant debris before using but **DO NOT** allow water to enter fumigant lines or containers.
- Since this product is corrosive under certain conditions, flush all application equipment with diesel oil or kerosene immediately after use. Dispose of flushing solution by incorporation into the treated field or by other means in accordance with appropriate State legislation.
- Fill pumps and meters with new motor oil or a 50% motor oil/diesel oil mixture before storing.

PRECAUTIONS

Signs or placards as follows must be prominently shown at all approaches to the fumigation site.

"DANGER — KEEP OUT — POISONOUS GAS — FUMIGATION IN PROGRESS — KEEP AWAY".

These signs should also include the contractor's name and address plus "Poisons Information Centre Phone 13 11 26"

Workers within the vicinity of the treatment area should wear cotton overalls buttoned to the neck and wrist and a washable hat, chemical-resistant apron, elbow length neoprene gloves, chemical-resistant footwear and a full-facepiece respirator with organic vapour/gas cartridge.

Re-Entry Period

Avoid re-entry into treated areas for 5 days after treatment. When prior entry is necessary, or when odour persists beyond 5 days after treatment and entry is required, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length neoprene gloves, chemical-resistant footwear and a full-facepiece respirator with organic vapour/gas cartridge.

Groundwater Advisory Statement

The 1,3-dichloropropene in TELONE™ by Teleos Soil Fumigant is known to move through soil and under certain conditions has the potential to reach groundwater. Application in areas where soils are permeable and groundwater is near the surface could result in groundwater contamination for a period of time after treatment. **DO NOT** apply within 30 metres of any well used for drinkable water.

Other Precautions

- **DO NOT** use in enclosed greenhouses or other enclosed areas. TELONE™ by Teleos Soil Fumigant can be used in large greenhouses with both ends removed to allow ventilation.
- **DO NOT** drop, bump or drag cylinders.
- **DO NOT** unload cylinders by rope-sling, hooks or tongs.
- Keep cylinders upright in tamper-proof airy stores, away from dwellings and food and feed stuffs.
- Put out all pilot lights and glowing heating units.
- **DO NOT** use containers, pumps or other transfer equipment made of aluminium, magnesium or their alloys as under certain conditions this product may be severely corrosive to such metals.
- **DO NOT** contaminate food.
- **DO NOT** allow this chemical to contaminate water used for irrigation, drinking or other domestic purposes.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply within 1.5 m of desirable plants or living trees.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or waterways with the chemical or used containers. **DO NOT** fumigate more than once per crop. **DO NOT** apply TELONE™ by Teleos Soil Fumigant within 5 metres of aquatic environments such as rivers, streams, marshes and other water bodies.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. **DO NOT** store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feed stuffs, seed and fertilisers. Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

SAFETY DIRECTIONS

Poisonous if absorbed by skin contact or swallowed. Harmful if inhaled. Will damage eyes and will irritate the nose, throat and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin. **DO NOT** inhale vapour. The fumes first cause smarting, then watering of the eyes. This should be taken as a warning sign. If product in eyes, wash it out immediately with water. If product on skin, immediately wash area with soap and water. If clothing becomes contaminated with product, remove clothing immediately. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. When using the product wear cotton overalls buttoned to the neck and wrist and a washable hat, chemical-resistant apron, elbow length neoprene gloves, chemical-resistant footwear and full-facepiece respirator with organic vapour/gas cartridge. After each day's use, wash gloves, goggles and respirator (If rubber, wash with detergent and warm water) and contaminated clothing. **DO NOT** re-use footwear until thoroughly aired.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766. Remove from contaminated area. Apply artificial respiration if not breathing.

SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet available from the supplier

Flammable liquid and vapour. Toxic if swallowed, in contact with skin, or if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer

UN2903

PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S.
(1,3-DICHLOROPROPENE)

IN A TRANSPORT EMERGENCY
DIAL 000
POLICE OR FIRE BRIGADE

For specialist advice in the event of
A CHEMICAL EMERGENCY
(Spill, Leak, Fire, Exposure or Accident),
Call CHEMTREC: 1800 862 115

NOTICE

Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label, when used in accordance with directions under normal conditions of use. No warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of the product contrary to label instructions or under off-label permits not endorsed by TriCal Australia Pty Ltd, or under abnormal conditions.

Batch No.: _____ **D.O.M.:** _____