FOR TARPED SHANK BED, STRIP AND BROADCAST, UNTARPED SHANKBED, ETC.: FLORAL CROP, ETC.

General Information

Product Information

TRI-CLOR FUMIGANT is a pre-plant fumigant for the control of soil-borne pests, such as wireworms and nematodes, and diseases caused by certain species of Pythium, Phytophthora, Fusarium, and Verticillium.

Use Precautions

- This fumigant is a highly hazardous material and must be handled with care only by certified

applicators or persons under their direct supervision who are trained with its proper use.

- Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory Agencies as required.

- Obtain medical assistance at once in case of illness after exposure, and do not allow conditions which could accidently cause further exposure until recovery is complete.

- Never fumigate alone. It is imperative to always have an assistant and proper protection equipment, to aid in case of an accident.

- Drivers of application equipment must advise other workers of all precautions and procedures. In addition, drivers must instruct their helpers in the mechanical operation of the tractor and how to work with the tractor driver while fumigating.

- Handle this fumigant in the open, when possible, with the operator “upwind” from the container where there is good ventilation.

- Keep pets, livestock, and other domestic animals out of the treated area during application and during tarp perforation and/or removal if a tarp is used.

- Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertilizer and fumigant are applied to soils that are either cold, wet, acid, or high in organic matter. To avoid injury to plant roots, fertilize as indicated by soil tests made after fumigation. 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 65º F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

Entry Restricted Period and Notification

Entry Restricted Period

Entry into the application block (including early entry that would otherwise be permitted under the WPS) by any person – other than a correctly trained and PPE-equipped handler who is performing a handling task listed on the labeling – is PROHIBITED - from the start of the application until:

- 5 days (120 hours) after the application is complete for untarped applications, or

- 5 days (120 hours) after the application is complete if tarps are not perforated and removed for at least 14 days after the application is complete, or

- 48 hours after tarp perforation is complete if tarps will be perforated within 14 days after the application is complete and will not be removed for at least 14 days after the application is complete, or

- tarp removal is completed if tarps are both perforated and removed less than 14 days after the application is complete.

- See Tarp Perforation and/or Removal section on the labeling for requirements about when tarps are allowed to be perforated.

- If early tarp removal occurs for a broadcast application the entry restricted period is a minimum of 5 days after the application is complete.

- When listing application information for soil fumigant applications to comply with part 170.122 of the WPS, list the entry restricted

period time frame in place of the REI.

TRI-CLOR FUMIGANT

Bedded and Broadcast Shank Applications:

Additional GAPs

In addition to the GAPs required for all TRI-CLOR FUMIGANT soil fumigation applications, the following GAPs apply for injection applications: Tarps (when tarps are used in TRI-CLOR FUMIGANT applications)

- Tarps must be installed immediately after the fumigant is applied to the soil.

Soil Preparation

- Trash pulled by the shanks to the ends of the field must be covered with tarp, or soil, depending on the application method before making the turn for the next pass.

Soil Temperature

- The maximum soil temperature at the depth of injection must not exceed 90° F at the beginning of the application.

- If air temperatures have been above 100°F in any of the three days prior to the start of the application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Application Methods and Equipment

- Apply TRI-CLOR FUMIGANT with chisel equipment or a Noble plow.

- For shallow (injection depth minimum 8-10 inches) broadcast work, use a shank spacing of 9-12 inches.

- For deep applications (injection depth minimum 18 inches), a shank spacing up to 24 inches may be used; however, it is recommended that the shank spacing not

exceed 18 inches.

- When applying TRI-CLOR FUMIGANT with a Noble plow, use an outlet spacing of 9-12 inches along the sweeps.

Application Depth

- For Tarped-Broadcast and Tarped-Bedded Applications: The injection point must be a minimum of 8 inches from the nearest final soil/air interface.

- For Untarped-Bedded Applications: The injection point must be a minimum of 12 inches from the nearest final soil/air interface.

- For Untarped-Broadcast Applications: The injection point must be a minimum of 10 inches from the nearest final soil/air interface.

- For Untarped-Broadcast Deep Applications: The injection point must be a minimum of 18 inches from the nearest final soil/air interface.

Soil Sealing

- For Broadcast Untarped Applications: Use a disc or similar equipment to uniformly mix the soil to at least a depth of 3 to 4 inches to eliminate the chisel or plow traces. Following elimination of the chisel trace, the soil surface must be compacted with a cultipacker, ring roller, and roller in combination with tillage equipment.

- For Bedded Applications: Preformed beds must be sealed by disruption of the chisel trace using press sealers, bed shapers, cultipackers, or by re-shaping (e.g., relisting, lifting, replacing) the beds immediately following injection. Beds formed at the time of application must be sealed by disrupting the chisel trace using press sealers, or bed shapers.

- For Tarped Applications: The use of a tarp does not eliminate the need to minimize chisel traces prior to application of the tarp, such as by using a Noble plow or other injection shank that disrupts the chisel traces.

Soil Moisture

- The soil must be moist 9 inches below the surface. The amount of moisture needed in this zone will vary according to soil type. Surface soil generally dries rapidly and must not be considered in this determination.

- Soil moisture must be determined using one of the following methods:

- the USDA Feel and Appearance Method for testing (see below), or

- an instrument, such as a tensiometer.

- Available water capacity must be equal to or greater than 50% for shank applications. If there is less than 50% available water capacity 9 inches below the surface, the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below 9 inches, soil moisture can be adjusted by discing or plowing before the start of the application. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as close to the start of the application as possible.

- Measure soil moisture at a depth of 9 inches at either end of the field, no more than 48 hours prior to the start of the application. The USDA Feel and Appearance Method for estimating soil moisture as appropriate for the soil texture:

- For coarse textured soils (fine sand and loamy fine sand), the soil is moist enough (50 to 75% available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

- For moderately coarse textured soils (sandy loam and fine sandy loam), the soil is moist enough (50 to 75% available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

- For medium textured soils (sandy clay loam, loam, and silt loam), the soil is moist enough (50 to 75% available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

- For fine textured soils (clay, clay loam, and silty clay loam), the soil is moist enough (50 to 75% available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and

forefinger.

- For fields with more than one soil texture, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. Whenever possible, the field should be divided into areas of similar soil texture

and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service agent, soil conservationist, or pest control advisor (agriculture consultant) should be consulted for assistance.

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Prevention of End Row Spillage

- Do not apply or allow fumigant to spill onto the soil surface. For each injection line either have a check valve located as close as possible to the final injection point, or drain/purge the line of any remaining fumigant prior to lifting injection shanks from the ground.

- Do not lift injection shanks from the soil until the shut-off valve has been closed and the fumigant has been depressurized (passively drained) or purged (actively

forced out via air compressor) from the system.

Calibration, Set-up, Repair, and Maintenance for Application Rigs

- Brass, carbon steel, or stainless steel fittings must be used throughout. Polyethylene tubing, polypropylene tubing, Teflon tubing or Teflon -lined steel braided tubing must be used for all low pressure lines, drain lines, and compressed gas or air pressure lines. All other tubing must be Teflon -lined steel braided.

- Galvanized, PVC, nylon, or aluminum pipe fittings must not be used.

- All rigs must include a filter to remove any particulates from the fumigant and for pressurized systems a check valve to prevent backflow of the fumigant into the pressurizing cylinder or the compressed air system.

- Rigs must include a flow meter or a constant pressure system with orifice plates to ensure the proper amount of fumigant is applied.

- To prevent the backflow of fumigant into the compressed gas cylinder (e.g., nitrogen, other inert gas, compressed air), if used, applicators must:

- Ensure that positive pressure is maintained in the compressed gas cylinder at not less than 200 psi during the entire time it is connected to the application rig, if a compressed gas cylinder is used. (This is not required for a compressed air system that is part of the application rig because if the compressor system fails the application rig will not be operable.)

- Ensure that application rigs are equipped with properly functioning check valves between the compressed gas cylinder or compressed air system and the fumigant cylinder. The check valve is best placed on the outlet side of the pressure regulator, and is oriented to only allow compressed gas to flow out of the cylinder or compressed air out of the compressed air system.

- A pressure relief valve must be installed between the regulator and the check valve to ensure a regulator failure does not over pressurize the fumigant cylinder.

- Always pressurize the system with compressed gas or by use of a compressed air system before opening the fumigant cylinder valve.

- Before using a fumigation rig for the first time or when preparing it for use after

storage, the operator must check the following items carefully:

- Check the filter, and clean or replace the filter element as required.

- Check all tubes and chisels to make sure they are free of debris and obstructions.

- Check and clean the orifice plates and screen checks, if installed.

- Pressurize the system with compressed gas or compressed air, and check all fittings, valves, and connections for leaks using soap solution.

- Install the fumigant cylinder, and connect and secure all tubing. Slowly open the compressed gas or compressed air valve, and increase the pressure to the desired level. Slowly open the fumigant cylinder valve, always watching for leaks.

- In case of the rupture of a hose or fitting while applying the fumigant, immediately stop the tractor or motor. Get off the tractor and get to a place where the problem can be observed without exposure to the fumes. Approach from upwind, with respiratory protection if required and make the necessary repairs.

- When changing cylinders, be certain they are turned off and the fumigant system is not under pressure.

- When the application is complete, close the fumigant cylinder valve and blow residual fumigant out of the fumigant lines into the soil using compressed gas or compressed air. If the rig uses a centrifugal pump instead of compressed gas to inject fumigant into the soil, you may clear residual fumigant from the fumigant lines using an application wand connected to the system's low point via a drain hose. Place the wand in the soil until all residual fumigant has drained from the system. The wand and drain hose must be free of dirt to allow proper drainage. At the end of the application season, disconnect all fumigant cylinders from the application rig. At the end of the season, seal all tubing openings with tape to prevent the entry of insects and dirt.

Application equipment must be calibrated and all control systems must be working properly.

Proper calibration is essential for application equipment to deliver the correct amount of fumigant uniformly to the soil. Refer to the manufacturer’s instructions on how to calibrate your equipment, usually the equipment manufacturer, fumigant

dealer, or Cooperative Extension Service can provide assistance.

Planting Interval

After application, leave the soil undisturbed for 10 to 14 days. Wet soil retards diffusion of the fumigant, thus requiring a longer soil exposure period. At the end of the soil exposure period, aerate the soil by plowing or deep cultivation. If heavy rains accompanied by low temperatures occur during the soil exposure period, working the soil several times is essential for thorough aeration. Aeration is usually complete when the odor of the fumigant is no longer evident.

See label for Calculating the Broadcast Equivalent Application Rate

Limitations, Restrictions, and Exceptions

Do not exceed specified maximum application rates in Table 1.

All other crops: Not to be used with aquatic plants or for forestry uses.

Application rate (pounds product/treated acre) for tarped shank bed, strip and broadcast; untarped shank bed; and untarped deep shank broadcast applications: Pounds product/treated acre: To facilitate application of this product when applying in low dosages, dilution with the solvent Exxsol D-80 is allowed. The maximum rate of Exxsol D-80 shall not exceed 150 lbs./acre.

Method
Broadcast Application
Rates
field_rates 0

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Timings
Preplant