

719-32 1817
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AUG 28 1989

Mr. Robert W. Morgan
Dow Chemical Company
Agricultural Products Department
P.O. Box 1706
Midland, MI 48640-1706

Dear Mr. Morgan:

Subject: Telone® II Soil Fumigant
EPA Registration No. 464-511
Your Submissions Dated July 27, 1988 and June 1, 1989

Your submissions, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, are acceptable subject to the comments listed below. Five copies of the finished labeling must be submitted.

The proposed labeling received June 5, 1989 contains revised language which resolves all of our efficacy-related comments regarding unclear or contradictory labeling information. Since the currently accepted label recommends a 12-inch chisel spacing for the two chisel row treatments, using the same flow rates as the broadcast (overall) treatments, the amounts applied per acre of treated soil will be the same as the broadcast treatments which utilize a 12-inch chisel spacing.

1. It should be noted that the latest proposed labeling modifies the use directions for the two-chisel treatment by allowing chisel spacings less than 12 inches to be used. This in effect would result in higher soil concentrations than the broadcast treatment as the chisel spacing is decreased, but would not exceed the soil concentrations produced by the 2X flow rate for the single chisel row treatment. From a practical standpoint, we should recommend that a minimum chisel spacing be specified for the two-chisel row treatment method since the seed row is supposed to be centered between these two chisels to avoid seed germination problems.

55228:I:Maranion:R-3:KENCO:8/24/89:10/5/89:AS:SW:VO:JE:aw

CONCURRENCES

SYMBOL							
HH305C							
SURNAME							
Thompson							
DATE							
8/28/89							

2. We do not see any problem with adding bananas to the list of Fruit and Nut Crops since the list of specific crops has always represented a list of examples of crops rather than the only crops which could be treated.

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3. We accept the rationale for changing the single chisel flow rate from 1 1/3X to 2X the broadcast rate, from an efficacy standpoint.

A copy of the Agency's Dietary Exposure Branch review (June 19, 1963) is enclosed for your records.

Sincerely yours,

Susan Lewis
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

THE DOW CHEMICAL COMPANY
Midland, MI 48640

AUG 28 1989

Specimen Label

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons
under their direct supervision and only for those uses covered by the
Certified Applicator's certification.

464-511

**Telone* II
Soil Fumigant**

A Liquid for Preplant Treatment of Soil to Control Plant Parasitic
Nematodes and Certain Other Soil Pests

Active Ingredient(s):	(by weight)
1,3-Dichloropropene	94%
Inert Ingredients	6%

1 gallon of TELONE II weighs 10.1 lb. @ 70[DEG]F
E.P.A. Registration No. 464-511
E.P.A. Est. 464-TX-1(TB); 464-MI-1(MI); 464-CA-1(WP); 464-CA-1(WL);
54686-WA-1(DQ).
Superscript used corresponds to letter in Lot No.

**KEEP OUT OF REACH OF CHILDREN
WARNING**

AVISO:

[MEDIUM]PRECAUCION AL USUARIO:[NORM]

Si usted no lee ingl[ACUTE ACCENT] es, no use este producto hasta que la
etiqueta le haya sido explicada ampliamente.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

HAZARDOUS LIQUID AND VAPOR [BUL] MAY BE FATAL IF INHALED, ABSORBED
THROUGH SKIN, OR SWALLOWED [BUL] CAUSES SUBSTANTIAL BUT TEMPORARY EYE
INJURY [BUL] CAUSES SKIN IRRITATION AND, IF CONFINED, SKIN BURNS [BUL]
MAY CAUSE ALLERGIC SKIN REACTION [BUL] MAY CAUSE LUNG, LIVER AND KIDNEY
DAMAGE AND RESPIRATORY SYSTEM IRRITATION UPON PROLONGED CONTACT [BUL]
THE USE OF THIS PRODUCT MAY BE HAZARDOUS TO YOUR HEALTH. TELONE II
CONTAINS 1,3-DICHLOROPROPENE WHICH HAS BEEN DETERMINED TO CAUSE TUMORS
IN LABORATORY ANIMALS. RISKS CAN BE REDUCED BY CLOSELY FOLLOWING THE
USE DIRECT ON AND PRECAUTIONS, AND BY WEARING PROTECTIVE CLOTHING
SPECIFIED ELSEWHERE ON THIS LABEL.

Do Not Breathe Vapor [BUL] Do Not Get In Eyes, On Skin, On Clothing
[BUL] Do Not Take Internally [BUL] Do Not Use The Mouth To Siphon TELONE
II From Containers Or To Blow Out Clogged Lines, Nozzles, Etc. [BUL] Use
Only With Adequate Ventilation [BUL] Wear Chemical Goggles And Other
Protective Equipment Required Under Section So Designated To Avoid
Contact When Handling TELONE II [BUL] Wash Thoroughly With Soap And
Water After Handling And Before Eating Or Smoking [BUL] If Protective
Gear Becomes Contaminated, Immediately Wash With Soap And Water. Never
Wear Protective Gear Having The Odor Of 1,3-Dichloropropene. Aerate And
Wash All Protective Gear Thoroughly After Use Until All Odor Is Gone.
[BUL] Render Unusable And Dispose Of Contaminated Leather Goods,
Including Shoes [BUL] READ AND FOLLOW FURTHER INSTRUCTIONS UNDER
PROTECTIVE EQUIPMENT REQUIREMENTS SECTION.

(CONTINUED)

STATEMENT OF PRACTICAL TREATMENT:

If Inhaled: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

If On Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. If water is not immediately available, remove excess chemical from skin with sorbent material such as towel or dry soil, then proceed at once to a location where water is available and thoroughly wash contaminated skin with plenty of water. Call a physician.

If In Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

If Swallowed: Do not induce vomiting. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Because rapid absorption may occur through lungs if product is aspirated and cause systemic effects, the decision to induce vomiting or not should be made by a physician. If lavage is performed, endotracheal and/or esophageal control is suggested. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

Physical or Chemical Hazards

FLAMMABLE[BUL]Do Not Use, Pour, Spill, or Store Near Heat or Open Flame[BUL]Do Not Cut or Weld Container.

Environmental Hazards

Do not contaminate water when cleaning equipment or disposing of wastes. See section under Storage, Shipment, and Disposal. In case of spills properly dispose of contaminated materials.

NOTICE

Read and understand the entire label before using. Use only according to label directions.

Before buying or using this product, read "WARRANTY LIMITATIONS AND DISCLAIMER" elsewhere on this label. If terms are not acceptable, return unopened package at once to seller for full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under WARRANTY LIMITATIONS AND DISCLAIMER.

IN CASE OF AN EMERGENCY endangering life or property involving this product, call collect 517-636-4400

AGRICULTURAL CHEMICAL

Do Not Ship or Store with Food, Feeds, Drugs, or Clothing

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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PROTECTIVE EQUIPMENT REQUIREMENTS

1. The following clothing and equipment are required to be used by persons actually engaged in carrying out any operations that are likely to involve direct contact with TELONE II including equipment calibration, cleanup and repair; sampling; cleanup of spills; fumigant transfer; and rinsate disposal. This equipment must also be used for any operations that are done within 6 feet of unshielded, pressurized hoses containing TELONE II:
 - a. NIOSH- or MSHA-approved half-face organic vapor respirator and chemical goggles or a full-face respirator.
 - b. Body covering that has long sleeves and long pants and is constructed of material resistant to TELONE II.
 - c. Hat with a bill, such as a bump cap, resistant to TELONE II.
 - d. Synthetic work gloves and heavy-duty, synthetic footgear resistant to TELONE II.
2. The following clothing and equipment must be readily available at all times for use by persons operating application and soil sealing equipment. It is recommended that such safety gear be carried on the equipment involved:
 - a. A NIOSH- or MSHA-approved half-face or full-face organic vapor respirator. This equipment must be worn when the odor of TELONE II can be detected.
 - b. Heavy-duty, synthetic footgear resistant to TELONE II. This footgear must be worn when walking on treated soil within 72 hours after application.
 - c. Equipment operators who carry out any of the operations listed in Section 1., above, or who must work within 6 feet of unshielded, pressurized hoses containing TELONE II must have available and wear the protective equipment recommended for these situations.

NOTE: There are no protective clothing materials that are completely impervious to penetration by liquid TELONE II. Thin layers of polyethylene (minimum 1 mil), rubber and vinyl protective gear give short-term protection and must be immediately discarded upon contamination. Heavy (5+ mils) polyethylene, rubber and neoprene provide longer term protection. Leather gives no protection.

NIOSH- or MSHA-approved respiratory protection must be worn when TELONE II is exposed to the atmosphere or when conducting operations that vent to the atmosphere. A NIOSH- or MSHA-approved half-face organic vapor respirator or full-face respirator must be used. When in use canisters or cartridges must be replaced daily or sooner if specified by manufacturer or at first sign of odor breakthrough, whichever occurs first. NIOSH-approved organic vapor cartridges, such as the North N7500, will be adequate for short-term exposure situations. Where very high concentrations of vapors might be expected (such as large spills in poorly ventilated areas) a positive pressure self-contained or air-supplied respirator must be used.

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FIELD REENTRY

Do not enter the treated area within 72 hours after treatment unless heavy-duty synthetic footgear is worn. See section on Protective Equipment Requirements for further information. If the odor of TELONE II can be detected, an organic vapor respirator must be worn. Certain states may have more restrictive reentry intervals. Consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. These oral warnings shall inform workers of areas or fields that may not be entered without heavy-duty synthetic footgear until after 3 days post treatment. In case of accidental exposure, follow directions as shown by the Statement of Practical Treatment section on this label. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written warnings must include the following information: **WARNING.** Area treated with TELONE II soil fumigant on (insert date of application). Do not enter without heavy-duty synthetic footgear until after 3 days post treatment.

STORAGE, SHIPMENT AND DISPOSAL

Pesticide wastes are toxic. Improper disposal of excess pesticide is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for Guidance.

STORAGE: Store in tightly-closed original container in a cool place away from dwellings. Do not allow contamination of seeds, plants, fertilizers, or other pesticide chemicals. Do not contaminate food, feedstuffs, drugs, or domestic water supplies. In outside storage, store drums on sides to avoid accumulation of rain water in top or bottom recessed areas.

SHIPMENT: Do not ship or store with food, feeds, drugs, or clothing.

DISPOSAL: Triple rinse original container with fuel oil, kerosene or a similar type of petroleum solvent and dispose of rinsate by incorporation into field just treated or by other approved means. After aeration offer container to qualified reconditioner or dispose of as directed by state or local regulations.

Because TELONE II is corrosive under certain conditions, flush all application equipment with fuel oil, kerosene or a similar type of petroleum solvent immediately after use. Fill pumps and meters with new motor oil or a 50% motor oil/fuel oil mixture before storing. Do not use water. Dispose of rinsate by incorporation into field just treated or by other approved means. Never introduce rinsate or unused TELONE II into surface or underground water supplies.

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GENERAL INFORMATION

Read the entire label before using TELONE II.

Use TELONE II soil fumigant as a preplant soil treatment to control the following types of plant-parasitic nematodes: burrowing, citrus, cyst (golden, sugar beet, soybean, carrot and wheat), dagger, lance, pin, reniform, ring, root knot, root lesion (meadow), spiral, sting and stubby root. TELONE II can also be used to control garden centipedes (symphylans) and wireworms, suppress sugar beet [ITAL]Rhizomania[NORM] disease [ITAL]Fusarium[NORM] wilt of cotton and [ITAL]Verticillium[NORM] wilt of mint and potatoes and aid in the control of bacterial canker of peaches.

TELONE II will control pests that are present in the treatment zone at time of fumigation. It will not control pests that are introduced after fumigation from sources such as contaminated soil, equipment, irrigation water and planting material.

Fumigate soil to be planted to crops such as those listed below by applying TELONE II under the conditions and at the rates recommended under Application Directions.

Note: Do not apply TELONE II through any type of irrigation system.

Vegetable Crops:

asparagus	egg plant	pimentoes
beans	endive	potatoes
beets	garlic	pumpkins
blackeyed peas	horseradish	radishes
broccoli	kale	rutabaga
brussels sprouts	kohlrabi	salsify
cabbage	leeks	shallots
cantaloupe	lettuce	spinach
carrots	melons	squash (summer)
cauliflower	mustard greens	squash (winter)
celery	okra	sweet potatoes
collards	onions	swiss chard
corn	parsnips	tomatoes
cowpeas	peas	turnips
cucumbers	peppers	watermelons

Field Crops:

alfalfa	kenaf	rye
barley	lespedeza	safflower
birdsfoot trefoil	millet	sorghum
buckwheat	milo	soybeans
clover	mint	sugar beets
corn	oats	sugarcane
cotton	pasture grass	tobacco
flax	peanuts	vetch
grasses	popcorn	wheat
hops		

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Fruit and Nut Crops:

almonds	gooseberries	pecans
apples	grapefruit	persimmons
apricots	grapes	pineapple
bananas	hazelnuts (filberts)	plums
blackberries	hickory nuts	pomegranates
blueberries	huckleberries	prunes
boysenberries	kumquats	quince
cashew nuts	lemons	raspberries
cherries	limes	strawberries
chestnuts	loganberries	tangerines
cranberries	nectarines	tangelos
currants	olives	youngberries
dates	oranges	walnuts
dewberries	peaches	
figs	pears	

Nursery Crops including floral plants, ornamentals, shrubs and bushes; forest, shade, fruit and nut trees; and vine and bramble fruits of all types.

When used according to state nursery regulations, TELONE II soil fumigant may be used in the production of certified nursery stock.

APPLICATION DIRECTIONS

WHEN TO TREAT: TELONE II 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 best results. Because TELONE II does not provide residual control of soil pests, it should be used 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 temperature at the depth of application must be between 40[DEG]F and 80[DEG]F. In areas where the soil temperature in the spring may not reach 40[DEG]F in time to allow application of TELONE II prior to planting, late summer or early fall treatment is recommended.

Soil moisture throughout the desired treatment zone generally should be at or near the permanent wilting point to allow optimum dispersion of the fumigant, which moves as a gas through the soil air spaces. The permanent wilting point varies with soil texture and organic matter content. 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 you do not know how to determine the soil moisture content of the area to be treated, consult your local Extension Service or Soil Conservation Service Specialist or Pest Control Advisor (Ag Consultant) for assistance.

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In general, no irrigation should immediately precede subsoiling or fumigation; however, when surface soil moisture conditions are not likely to provide an adequate seal against fumigant loss, a very light sprinkler irrigation to wet the top 1 to 2 inches of soil may be useful.

SOIL PREPARATION: The soil should be free of clods. Plant residues should be incorporated into the soil and allowed to decompose prior to treatment. Very little 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 THE FUMIGANT: TELONE II may be applied as either a broadcast (overall) or row treatment. It must be placed at least 10 inches below the final soil surface. Deeper placement is recommended when fumigating soil to be planted to deep-rooted plants, such as perennials fruit and nut crops, or to control deeply distributed pests.

APPLICATION RATES

NEMATODES:

Broadcast Application: Use chisel (shank), Nobel (sweep) plow or plow-sole application equipment with one or more fumigant outlets. For best results under most conditions, use chisel equipment with ripper-type, forward-swept shanks. Nobel plow equipment is particularly useful for fall fumigation when the soil may still contain some undecomposed plant material. Subsoiling may be necessary before application as described under Soil Preparation. The fumigant outlet spacing varies with the type of application equipment used.

With chisel equipment a fumigant outlet spacing of 12 to 24 inches is recommended. The outlet spacing for this equipment may be up to 1 1/2 times the application depth but generally should be equal to the application depth and should not exceed the soil-shattering capability of the chisels. The maximum outlet spacing should not exceed 24 inches.

With plow-sole equipment a 12 inch outlet spacing is recommended.

With Nobel (sweep) plow equipment use an outlet spacing of 9 inches along the sweeps.

Broadcast application can be made in the same direction or at an angle to the direction of the planting row. Refer to Table 1 for broadcast treatment rates for various crops.

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Table 1. Broadcast Treatment Rates For Nematode Control

Crops	Soil Texture	Recommended Rate	
		Gallons Per Acre	Fl. oz./1000 ft. of Row/Outlet (1)
Vegetable (2)	Mineral (3)	9 - 18 (4)	26 - 53
	Muck or Peat (5)	24 - 36	71 - 106
Field	Mineral	9 - 18 (4)	26 - 53
	Muck or Peat	24 - 36	71 - 106
Fruit, Nut and Nursery (6,7,8,9,10)	Sand	27 - 33	79 - 97
	Sandy Loam	36 - 48	106 - 141
	Silt Loam	63 - 75	185 - 220
	Clay Loam	84 - 102	247 - 300

(1) Flow rates are based on 12-inch outlet spacing. Flow rates for alternate spacings can be calculated using the following formula:

$$\text{fl. oz./1000 ft. of row/outlet} = 2.94 \times \text{rate in gallons/acre} \times \text{outlet spacing in feet.}$$
 For row treatment refer to Tables 2 and 3.

(2) Potatoes: Use 9 to 18 gallons of TELONE II per acre to control the Northern root knot nematode [ITAL]Meloidogyne hapla[NORM] in mineral soil and 24 to 36 gallons per acre in muck soil. For high populations of this species use the higher recommended rate. For more difficult-to-control nematodes such as the Columbia root knot nematode [ITAL]Meloidogyne chitwoodi[NORM], apply 20 gallons per acre (59 fl. oz./1000 ft. of row/outlet based on 12-inch centers) in mineral soil. For best results apply the fumigant at least 18 inches below the final soil surface.

Before fumigation, soil sampling for the type and number of pests present is recommended. This can help to determine the need for additional treatment with a contact nematicide. Preharvest sampling for nematodes also is recommended. If the nematode population is high enough that the crop may be damaged, the potatoes can be harvested early.

- (3) Mineral soil includes sand, sandy loam, silt, and clay loam. Use the higher rates for finer textured (heavier) soils.
- (4) For cyst-forming nematodes use 18 gallons per acre (53 fl. oz/1000 ft./outlet).
- (5) Greater than 20% organic matter content.
- (6) Pineapple: Application may be made at the time of planting. For best results, seal the soil with polyethylene film, which acts as a gas permeability barrier. Dow High Barrier 419 polyethylene mulch film, with a minimum thickness of 1 mil, is recommended.

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- (7) Strawberries: For broadcast fumigation of mineral soils only, apply 24 to 36 gallons per acre.
- (8) Tree Planting Sites: Use 24 fl. oz. (1.5 pints) of TELONE II by application of the fumigant at a single point in the center of each ~~planting site at a depth of 5 ft. below the final soil surface.~~ Sites prepared by backhoeing to break up restrictive soil layers that may retard fumigant movement should be dug in the approximate dimensions of 10 x 10 x 10 ft. The hole should then be backfilled to a depth of 5 ft., the fumigant applied using a closed-system application tube and the remainder of the soil previously removed immediately added to the hole. For sites where no restrictive soil layers are present, the fumigant can be applied to a depth of 5 ft. using an injection auger. For best results, prepare and treat planting sites in the fall and plant in the spring.
- (9) For shallow-rooted plants grown only one year, use 15 to 27 gallons per acre (44 to 79 fl. oz./1,000 ft. of row/cutlet).
- (10) Citrus: For burrowing nematode control, inject TELONE II on 18-inch centers at least 12 inches deep. For buffers within existing groves or for tree planting sites within existing groves, do not apply within 5 feet of living trees. Keep the field free of plants susceptible to this nematode at least two years before planting to citrus.

Row Application: Use chisel equipment to treat a band of soil where the crop is to be planted, i.e. the plant row. One or two chisels per plant row is recommended. In general, when one chisel is used, apply TELONE II at the flow rates given in Table 2. When two chisels per plant row are used, space the chisels (fumigant outlets) up to 12 inches apart and divide the flow rates given in Table 2 equally between the two outlets. Regardless of the number of chisels used, the amount of fumigant applied per 1000 feet of plant row should remain the same. With certain deeper rooted crops such as potatoes and sugar beets, higher flow rates may be necessary to ensure adequate treatment of the zone of soil where primary root growth occurs; however, in no case should the amount of fumigant applied per acre exceed the gallons per acre rates for broadcast treatment given in Table 1. To determine the amount (gallons) of TELONE II required per acre for various plant row spacings and flow rates, refer to Table 3. Note that as the distance between the plant rows increases the amount of fumigant required decreases and vice versa.

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 chisel(s). When one chisel is used per plant row, place the seed about 4 inches to one side of the chisel furrow. When two chisels are used per plant row, plant the seed in the center of the area between the chisel furrows.

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Table 2. Row Treatment Rates For Nematode Control Using a Single Chisel Per Row (1)

Crops	Soil Texture (2)	Recommended Rate
		Fl. oz./1000 ft. (3) of Row
Vegetable	Mineral	52 - 106
	Muck and Peat	142 - 212
Field (4)	Mineral	52 - 106
	Muck and Peat	142 - 212
Fruit, Nut and Nursery (5)	Mineral	52 - 106
	Muck and Peat	142 - 212

- (1) For row spacing of 24 inches or less apply TELONE II as a broadcast treatment.
- (2) For a description of soil textures see Table 1.
- (3) To determine actual gallons per acre needed for various row spacings see Table 3.
- (4) Sugar beets: To control sugar beet cyst nematode use 93 fl. oz./1000 ft. of row.
- (5) Pineapples: To control reniform nematodes use 230 fl. oz./1000 ft. of row.

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Table 3. Gallons of TELONE II Required Per Acre for Various Row Spacings and Fumigant Flow Rates (1)

Fl. Oz./1000 Ft. of Row	Plant Row Spacing (I. ches)												
	26	28	30	32	34	36	38	40	42	44	46	48	50
52	8.2	7.6	7.1	6.6	6.2	5.9	5.6	5.3	5.1	4.8	4.6	4.4	4.2
60	9.4	8.8	8.2	7.7	7.2	6.8	6.4	6.1	5.8	5.6	5.3	5.1	4.9
68	10.7	9.9	9.3	8.7	8.2	7.7	7.3	6.9	6.6	6.3	6.0	5.8	5.5
76	11.9	11.1	10.3	9.7	9.1	8.6	8.2	7.8	7.4	7.0	6.7	6.5	6.2
84	13.2	12.3	11.4	10.7	10.1	9.5	9.0	8.6	8.2	7.8	7.5	7.1	6.9
92	14.4	13.4	12.5	11.7	11.0	10.4	9.9	9.4	8.9	8.5	8.2	7.8	7.5
100	15.7	14.6	13.6	12.8	12.0	11.3	10.7	10.2	9.7	9.3	8.9	8.5	8.2
108	17.0	15.8	14.7	13.8	13.0	12.2	11.6	11.0	10.5	10.2	9.6	9.2	8.8
116	18.2	16.9	15.8	14.8	13.9	13.2	12.5	11.8	11.3	10.8	10.3	9.9	9.5
124	19.5	18.1	16.9	15.8	14.9	14.1	13.3	12.7	12.1	11.5	11.0	10.5	10.1
132	20.7	19.3	18.0	16.8	15.8	15.0	14.2	13.5	12.8	12.2	11.7	11.2	10.8
140	22.0	20.4	19.1	17.9	16.8	15.9	15.0	14.3	13.6	13.0	12.4	11.9	11.4
148	23.2	21.6	20.1	18.9	17.8	16.8	15.9	15.1	14.4	13.7	13.1	12.6	12.1
156	24.5	22.8	21.2	19.9	18.7	17.7	16.8	15.9	15.2	14.5	13.8	13.3	12.7
164	25.8	23.9	22.3	20.9	19.7	18.6	17.6	16.7	15.9	15.2	14.6	13.9	13.4
172	27.0	25.1	23.4	21.9	20.7	19.5	18.5	17.6	16.7	16.0	15.3	14.6	14.0
180	28.3	26.3	24.5	23.0	21.6	20.4	19.3	18.4	17.5	16.7	16.0	15.3	14.7
188	29.5	27.4	25.6	24.0	22.6	21.3	20.2	19.2	18.3	17.4	16.7	16.0	15.3
196	30.8	28.6	26.7	25.0	23.5	22.2	21.1	20.0	19.1	18.2	17.4	16.7	16.0
204	32.0	29.8	27.8	26.0	24.5	23.1	21.9	20.8	19.8	18.9	18.1	17.4	16.7
212	33.3	30.9	28.9	27.0	25.5	24.0	22.8	21.6	20.6	19.7	18.8	18.0	17.3

(1) Refer to Table 2 for the rate needed for a specific crop and/or soil texture. To obtain the gallons per acre used for a row spacing not shown in this table, use the following equation:

$$\frac{\text{fl. oz./1000 ft. of row}}{\text{row spacing (inches)}} \times 4.08 \text{ (a)} = \text{gallons per acre}$$

$$\text{(a) } 4.08 = \frac{12 \text{ inches} \times 43.56 \text{ (n 1000 ft./acre)}}{128 \text{ (fl. oz. per gallon)}}$$

(CONTINUED)

DISEASES:

Bacterial Canker of Peaches: TELONE II can be used as an aid in the control of this disease by application as a preplant, overall treatment of light (sandy) soils at the rate of 36 gallons per acre (106 fl. oz./1000 ft. row per outlet) preferably in the fall when the soil is warm (55-80[DEG]F at injection depth) and moist. Inject the fumigant at a depth of 10 to 12 inches with chisels mounted on 12-inch centers.

[ITAL]Fusarium[NORM] Wilt of Cotton: The effects of this disease can be suppressed by controlling the root knot nematodes associated with this disease/nematode complex. Use TELONE II as a row treatment at the rate of 46 to 106 fl. oz./1000 ft. of row. The lower rate is suitable for mineral soils whereas the higher rate should be used for heavier soils.

Sugar Beet [ITAL]Rhizomania[NORM] Disease: Use TELONE II to suppress the effects of this disease by preplant application at the rate of at least 73.5 but not more than 132 fl. oz./1000 ft. of plant row. These flow rates are equivalent to 10 to 18 gallons per acre for sugar beets planted in 30-inch beds with one plant row per bed. For beets planted in 40-inch beds with two plant rows per bed the recommended flow rates are equivalent to 15 to 27 gallons per acre. Use the higher rates for heavier (finer textured) soils and/or for higher levels of disease infestation. TELONE II is believed to reduce the activity of [ITAL]Polymyxa betae[NORM], which has been identified as the vector of the [ITAL]Rhizomania[NORM] disease virus. The fumigant should be placed at least 12 inches below the final soil surface. Immediately after application, mechanically compact (seal) the soil surface to prevent fumigant loss. Sealing can be accomplished by forming the beds during application or, when fumigating pre-formed beds, re-list the beds or use a ring roller, cultipacker, bed shaper, press sealer or similar device.

[ITAL]Verticillium[NORM] Wilt of Mint and Potatoes: To aid in the control of this disease, apply TELONE II as a broadcast treatment. For mint, use 59 gallons per acre (173 fl. oz./1000 ft. row/outlet) in the spring or, preferably, in the fall. For potatoes, use 17 to 25 gallons per acre (50 to 73 fl. oz./1000 ft. row/outlet) in the spring, or 25 to 34 gallons per acre (73 to 100 fl. oz./1000 ft. row/outlet) in the fall.

INSECTS:

Symphylans (Garden Centipedes): Use TELONE II for treatment of soil to be planted to crops where these pests have been shown to be a problem. Apply the fumigant only as a broadcast treatment at the rate of 18 to 36 gallons per acre (53 to 106 fl. oz./1000 ft. row/outlet) when the soil temperature is warm (55 to 80[DEG]F) at the application depth.

Wireworms: Use TELONE II for treatment of soil to be planted to crops where these pests have been shown to be a problem. Apply the fumigant as a broadcast treatment at the rates recommended for nematode control (Table 1) by injection at least 14 inches below the final soil surface.

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SEALING THE SOIL: Immediately after application, mechanically compact the soil to prevent fumigant loss. Use a ring roller, cultipacker, disc and roller, or similar device. If chisel or plow sole traces are likely to remain, disc the soil immediately before sealing. Note that little or no crop residue should be exposed through the soil surface following the sealing operation. After row application, sealing may be accomplished by forming the beds so that the fumigant is at least 12 inches below the final soil surface. When fumigating pre-formed beds, seal the soil with ring rollers, press sealers, or by reforming the beds.

Sealing can also be accomplished by applying plastic film, such as polyethylene, over the entire treated area or in strips.

An adequate seal can sometimes be made by evenly moistening the upper 1 to 2 inches of soil over the entire treated area immediately after application of the fumigant. For example, a light sprinkler irrigation to obtain a moisture level near field capacity in the top 2 inches of soil will aid in sealing a dry soil surface.

TREATMENT PERIOD: Leave the soil undisturbed and unplanted for at least 7 days after application of the fumigant. A longer treatment period is required if the soil becomes cold or wet, and for deep-rooted tree, shrub and vine planting sites.

After the treatment period, to prevent phytotoxicity, allow the fumigant to dissipate completely before planting the crop. Under optimum soil conditions for dissipation, 1 week for each 10 gallons is recommended. For fruit, nut, and nursery crops at least three months should elapse between treatment and planting. To hasten dissipation, especially if heavy rains or low temperatures occur during the treatment period, till the soil to the depth of fumigant application. Use a knife-like chisel without turning the soil to reduce the possibility of recontaminating the treated soil. Dissipation is usually complete when the odor of TELONE II is no longer evident at the application depth. Lettuce seed can also be used as an indicator plant; contact Dow Chemical U.S.A. for test details. Do not plant if the odor of TELONE II is present at the depth of application.

USE PRECAUTIONS

Fertility Interactions: 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 certain crops including beets, carrots, corn, radishes, cole crops, legumes (beans), lettuce, onions, and sugarbeets, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury or nitrate starvation or both to crops on high organic soils, do not use fertilizers containing ammonium salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65[DEG]F.

(CONTINUED)

When using high rates of TELONE II as required by certain State nursery regulations, liming of highly acid soils before fumigation may stimulate nitrification and reduce the possibility of ammonia toxicity. Certain nursery crops such as citrus seedlings, [ITAL]Cornus[NORM] sp., [ITAL]Crataegus[NORM] sp., spruce, and vegetable crops such as cauliflower have shown evidence of phosphorus deficiency following fumigation. To avoid this possible effect, it is suggested that additional phosphate fertilizer be used where experience indicates a deficiency may occur. Foliar applied phosphorus is recommended.

Recontamination Prevention: To avoid reinfestation of treated soil do not use irrigation water, transplants, tools, seed pieces, or crop remains that could carry soilborne pests from infested land. Clean equipment carefully before using.

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(204.4 L/54 gal net

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