



**SPECIMEN LABEL**  
REDUCED TO 87%

# FUMAZONE<sup>®</sup> 86

## NEMATOCIDE

SOIL FUMIGANT FOR CONTROLLING SOIL BORNE PLANT PARASITIC NEMATODES and FOR USE IN THE MANUFACTURE OF OIL SOLUTIONS, EMULSIFIABLE LIQUIDS, AND GRANULATED NEMATOCIDAL FORMULATIONS

**ACTIVE INGREDIENT:**

1,2-dibromo-3-chloropropane and related halogenated C<sub>3</sub> aliphatics ..... 85.5%  
INERT INGREDIENT ..... 14.5%

Contains 12.1 Pounds Active Ingredient per Gallon.

E.P.A. Registration No. 464-313-ZA

E.P.A. Est. 464-MI-1<sup>MM</sup>; 464-CA-1<sup>WP</sup>.

Superscript used corresponds to letter in Lot No.

**AGRICULTURAL CHEMICAL**

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

**PRECAUCION AL USUARIO:** Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

**TRANSLATION: (TO THE USER: If you cannot read English, do not use this product until the label has been fully explained to you.)**

**WARNING**

**KEEP OUT OF REACH OF CHILDREN • HARMFUL LIQUID AND VAPOR • COMBUSTIBLE MIXTURE • CAUSES SKIN IRRITATION AND BLISTERS ON CONTACT • CAUSES IRRITATION OF EYES, NOSE AND THROAT • MAY BE ABSORBED THROUGH SKIN**  
**MAY BE HARMFUL OR FATAL IF SWALLOWED**

**Do Not Breathe Vapor • Keep Container Closed • Do Not Get in Eyes, on Skin, or on Clothing • Do Not Take Internally • Use Only in a Well-Ventilated Area Wash Thoroughly with Soap and Water After Handling and Before Eating and Smoking • Do Not Contaminate Feed and Foodstuffs • Keep Children and Pets Off Treated Area until This Material Has Been Washed into Soil • Keep Away From Heat and Open Flame**

**In case of contact,** immediately remove contaminated shoes and clothing and wash skin with soap and water. Flush eyes with plenty of water for at least 15 minutes and get medical attention. Do not wear shoes or clothing until ABSOLUTELY free of all chemical odor. **If illness results from inhalation,** remove to fresh air and call a doctor. **If swallowed,** call a doctor. Induce vomiting by giving an emetic such as 2 table-spoonfuls of table salt in a glass of warm water.

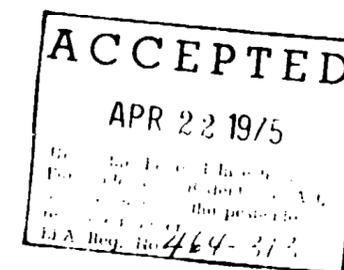
**5 GAL / 18.9 L**

86-1075 PRINTED IN U.S.A. IN MARCH, 1975.

REPLACES SPECIMEN LABEL 86-1075 PRINTED IN NOVEMBER, 1974.

DISCARD PREVIOUS SPECIMEN LABELS.

REVISIONS INCLUDE: CHANGE IN PLACEMENT OF "KEEP OUT OF REACH OF CHILDREN" STATEMENT.





# FUMAZONE<sup>®</sup> 86 NEMATOCIDE

**SPECIMEN LABEL  
(BACK)  
REDUCED TO 87%**

FUMAZONE 86 is intended for application to mineral soil to control plant parasitic nematodes such as owl citrus cyst, dog ear lance lesion or meadow pin ring root knot, spiral sting, stubby root, stunt and symphyllans in land to be planted to crops listed in the accompanying "Dosage and Use Recommendation" table. **NOTE: DO NOT ATTEMPT TO DILUTE WITH WATER FOR CHISEL APPLICATION. THIS IS NOT AN EMULSIFIABLE FORMULATION.**

### DIRECTIONS FOR USE

Apply FUMAZONE 86 when soil temperature at a depth of not less than 5 inches is between 40 and 80 F. Soil should be in seedbed condition with adequate moisture for good seed germination. Work plant remains into the soil and allow time to decompose before treating. Do not treat extremely wet or dry soils. **Read the entire label before making application.**

### OVERALL APPLICATION

**METHOD:** Either chisel equipment, with chisels 12 inches apart or plowsole equipment may be used to apply the fumigant. With this equipment release the fumigant at a depth of 5 to 8 inches. Overall application may also be accomplished by introducing the fumigant into irrigation water through centrifugal pumps.

**SOIL SEALING:** Immediately after chisel application, seal and compact the soil by using a roller, cultipacker, or similar device or flood with water. After plowsole application, disk the land, then compact by rolling.

**EXPOSURE PERIOD:** After overall preplant application, leave soil undisturbed for 7 to 14 days.

**Aeration and Preparation of Soil Before Planting:** After overall preplant application, the soil should be aerated by deep cultivation at the end of the exposure period. If heavy rains occur, accompanied by low temperatures during the exposure period, additional aeration is required. Working the soil several times before planting will aid in aeration which is usually adequate when the fumigant odor is gone. Shallow rooted crops can usually be planted about one week after the end of the exposure period. For deep rooted trees and shrubs, the aeration period after preplant treatments should be 4 to 6 weeks.

### ROW APPLICATION

**For Use as Preplant and at Planting Time:** Use two or more chisels per row depending upon the width of the area to be treated. Set chisels 12 inches apart and inject the fumigant 5 to 8 inches below the final soil surface, planting level. For preplant applications the treated rows may be marked by bedding or listing and by tractor or press wheels.

**For Use as Postplant Application:** Use two or more chisels per row and in such a manner as to treat both sides of the row, with the chisel injection lines no closer to the plant line than 4 inches.

**Planting Instructions with Row Application:** Direct seeding may be done at the time the fumigant is applied or at any time after a preplant application. Keep seed at least 4 inches away from chisel injection furrow to avoid poor stands due to loose soil in the area.

When setting transplants use following instruction: (1) Preplant treatment with 14 day wait, plant anywhere, or (2) Preplant treatment with less than 14 day wait, set plants at least 4 inches from chisel injection furrow, or (3) Fumigated at planting time, set plants at least 4 inches from chisel injection furrows.

**For best control of nematodes,** seal all row treated soil immediately after application and after any subsequent disturbing

of the soil within 7 days after treatment. This can be done by tractor wheels and by listing or bedding followed by ring rollers, press wheels or flooding with water.

### IRRIGATION APPLICATION

FUMAZONE 86 is recommended for use at the rate of 30 ppm of the active ingredient in sufficient water to give penetration to the desired depth. 0.561 gallons of FUMAZONE 86 per acre inch of irrigation water will provide 30 ppm by weight of active ingredient. For the irrigation treatment, multiply 0.561 gallons by the number of acre inches of water to be applied by the number of acres to be fumigated. For example, if an irrigation of 5 acre inches of water is planned, and 10 acres are to be treated, the following calculation will give the number of gallons of FUMAZONE 86 required: Example: 0.561 x 5 x 10 = 28.05 gallons. In this case the dosage is equivalent to 2.805 gallons of FUMAZONE 86 per acre.

**Irrigation Application Equipment:** For best results FUMAZONE 86 should be applied by introducing the fumigant into the intake side of a centrifugal pump having a minimum output of not less than 4% of the total gallons of water of the irrigation system. The fumigant should be metered directly into the pump from its original container through a simple gravity flow applicator. There are several excellent applicators of this type commercially available.

**Water Requirements to Bring Soil Moisture from the Wilting Point to Field Capacity:** It has been determined that this fumigant in irrigation water will penetrate the soil to approximately one half of the depth of the water penetration. Therefore, sufficient water should be applied to bring the field capacity to a depth about twice that desired to be fumigated. On deep sandy soils this will require about 4 to 6 acre inches of water. The following table is offered as a guide to estimate the water requirements to bring soil moisture from the wilting point to field capacity.

Type of Soil	Acre Inches of Water Required For:	
	Top 6 to 8 inches of soil	Each additional foot of soil depth
Sand	1/2 to 1	1/2 to 1
Loam	1 to 2	1 to 2
Clay	2 to 3	2 to 3

### APPLICATION SUGGESTIONS:

1. Apply the fumigant in all the water used in a given irrigation.
2. Do not use more treated water per acre in one irrigation than will provide the maximum dosage of FUMAZONE 86 recommended for each crop listed in the accompanying "Dosage and Use Recommendations" table.
3. Always determine the water delivery rates of the pump and canal or ditch before irrigation. This determination is necessary to assure accurate dosage which is based on total volume of irrigation water.
4. Irrigate with a maximum amount of water in a minimum period of time. Best results are obtained when irrigation time is two hours or less.
5. For best results, cover as much of the soil surface as possible with the treated irrigation water.
6. The necessity for treatment of perennial crops is dependent upon re-establishment of damaging nematode populations. Overall treatment will usually give 2 to 4 years control of nematodes. To avoid the possibility of exceeding the residue tolerances of food crops, do not treat by irrigation more often than once a year.

**SYMPHYLLANS:** To control symphyllans use only overall applications at the dosages indicated in the table. Apply during late summer or early fall when the soil is warm.

### DOSAGE AND USE RECOMMENDATIONS

Crops	Application		Dosage (a)		
	Time	Type	Gallons Per Acre	Fl. Oz. 1000 ft. Row Per Chisel	
Vegetables: Beans, broad beans, sprouts, cabbage, cauliflower, carrots, celery, egg plant, endive, escarole, lettuce, okra, parsnips, radishes, snap peas, etc.	Preplant	Overall (b)	1.5 to 2	4.4 to 5.2	
	At Planting	Row (d)			
	Postplant (e)	Row (d)			
Cucurbits: Melons, cucumbers, and summer squash	Preplant	Overall (b)	1.5 to 2	4.4 to 5.2	
	At Planting	Row (d)			
	Postplant (e)	Row (d)			
Lima beans (a)	Preplant	Overall (b)	1.0 to 1.7	2.9 to 5.0	
	At Planting	Row (d)			
	Postplant (e)	Row (d)			
Tomatoes	Direct Seeded	Preplant	1 to 1.5	2.9 to 4.4	
		At Planting			Row (d)
		Postplant (e)			Row (d)
	Transplants	Preplant	1 to 1.5	2.9 to 4.4	
		At Planting			Row (d)
		Postplant (e)			Row (d)
Soybeans (a)	Preplant	Row (p)	6.5 to 10 (42 rows)	5.1 to 10.3	
	At Planting	Row (p)			
Cotton	Preplant	Row (d)	1.0 to 2.0	2.9 to 5.9	
	At Planting	Row (d)			
	Postplant (e)	Irrigation			
Bananas	Preplant	Overall (b)	1.5 to 4.5	4.4 to 13.2	
	At Planting	Row (d)			
	Postplant (f)	Row (d)			
Pineapple	Preplant	Row (d)	3 to 11	6.6 to 32.3	
	At Planting	Irrigation (h)			
	Postplant (g)	Row (d)			
Berries: Blackberries, raspberries, strawberries, etc. (j)	Preplant	Overall (b)	2	5.2	
	At Planting	Row (d)			
	Postplant (i)	Row (d)			
Citrus Fruit (k): grapefruit, lemons, limes, oranges, tangerines	Preplant	Overall (b)	1 to 1.5	2.9 to 4.4	
	At Planting	Row (d)			
	Postplant (l)	Irrigation			
Deciduous Fruit and Nuts: Apples, cherries (l), fig (l), grapes, peaches, pears, plums, prunes (l), almonds (m), English walnuts (m)	Preplant	Overall (b)	1.0 to 2.0	2.9 to 5.9	
	At Planting	Row (d)			
	Postplant (n)	Irrigation			
Ornamentals: Flowers, shrubs, trees, etc. (o) and specimen	Preplant	Overall (b)	1.0	2.9	
	At Planting	Row (d)			
	Postplant (p)	Irrigation			
M. (o) (l) (m) (n) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)	Preplant	Overall (b)	1.5	4.4	
	At Planting	Row (d)			
	Postplant (r)	Row (d)			
Turf	Preplant	Overall (b)	1.2	3.8	
	At Planting	Row (d)			
Peanuts (t)	Preplant	Overall (b)	1.4 to 2.1	4.1 to 6.2	
	At Planting	Row (d)			

**NOTE:** All references to gallons are to U.S. gallons.

- (a) Do not apply more than once a year.
- (b) Overall application is made by introducing the fumigant into the intake side of a centrifugal pump having a minimum output of not less than 4% of the total gallons of water of the irrigation system.
- (c) Do not feed food products from treated areas to livestock.
- (d) For row application, where the fumigant is directly introduced into the soil, the rate per chisel is for rows 4 to 6 feet apart. Between rows, the amount of fumigant applied per acre will decrease and vary with row spacing. For crop production, consult your state or federal extension with Row Application.
- (e) Make the postplant application at least 4 weeks before the plants become firmly established.
- (f) Do not apply more than once each 9 to 12 months per acre, however, consult your state or federal extension.
- (g) Do not apply with irrigation.
- (h) Apply in about 100 to 150 gallons of water.
- (i) Do not apply more than once a year. For best results, establish the crop 4 to 6 weeks after the end of the exposure period. For deep rooted trees and shrubs, the aeration period after preplant treatments should be 4 to 6 weeks.
- (j) Do not apply with irrigation.
- (k) Apply in about 100 to 150 gallons of water.
- (l) Do not apply with irrigation.
- (m) Do not apply with irrigation.
- (n) Before irrigation, determine the amount of water to be applied per acre. This amount should be based on the total volume of irrigation water. For example, if the water delivery rate is 100 gallons per acre per hour, and the total volume of irrigation water is 1000 gallons per acre, the irrigation time should be 10 hours.
- (o) Spraying should be done at least 4 weeks before the plants become firmly established. For best results, establish the crop 4 to 6 weeks after the end of the exposure period. For deep rooted trees and shrubs, the aeration period after preplant treatments should be 4 to 6 weeks.
- (p) For row application, where the fumigant is directly introduced into the soil, the rate per chisel is for rows 4 to 6 feet apart. Between rows, the amount of fumigant applied per acre will decrease and vary with row spacing. For crop production, consult your state or federal extension with Row Application.
- (q) At 100 to 150 gallons of water per acre, the amount of fumigant applied per acre will decrease and vary with row spacing. For crop production, consult your state or federal extension with Row Application.
- (r) Do not apply with irrigation.

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**USE PRECAUTIONS**

**Caution - Note Carefully:** Fumigation may temporarily raise the level of ammonia nitrogen and of 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 roots of ammonia sensitive plants, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury or nitrate starvation, or both, avoid using fertilizers containing ammonium salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65 F. Certain crops including cotton and pineapple are tolerant to ammonia; the above rule does not apply to them. Timing highly acid soils before fumigation stimulates nitrification and may reduce the possibility of ammonia toxicity.

**Attention:** To avoid recontamination of treated soil, do not use transplants, tools or crop

Any forage crops grown on soil treated with a bromide containing fumigant should not be used as a feed for dairy animals, or animals being finished for slaughter, until 2 years after row treatments and 3 years following overall treatments.

Store in tightly closed containers in cool place away from dwellings and out of reach of children. Not for use or storage in or around the home. This product is toxic to wildlife. Keep out of lakes, streams and ponds. Birds and other wild life in treated areas may be killed. Rinse equipment and containers and dispose of wastes by burying in non crop lands away from water supplies. Containers should be disposed of by punching holes in them and burying with wastes.

**NOTE:** Seller warrants that the product conforms to its chemical description and is reasonably fit for the uses intended.