

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

7969 21 8

WR 14

Thomas R. Nelsen, Ph.D.
BASF Corporation
P.O. Box 13528
Research Triangle Park, NC 27709-3528

Dear Dr. Nelsen:

Subject: Label Amendment - Additional Container
Basamid-Granular
EPA Registration Number 7969-99
Your Submission Dated September 17, 1993

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. A stamped copy is enclosed for your records. Please submit three (3) copies of final printed labeling for our records.

This acceptance of your label does not relieve you of any obligation to comply with the Worker Protection Standard (WPS). Under the WPS labeling regulations at 40 CFR part 156, subpart K, § 156.200(c)(3), you are prohibited from distributing or selling any product within the scope of the WPS requirements after April 21, 1994, without amended labeling accepted by the Agency.

Sincerely Yours,

SDR
Steve Robbins
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (7505C)

Enclosure

CONCURRENCES

SYMBOL	7505C						
SURNAME	Robbins						
DATE	4/14/94						

BASF

ACCEPTED
with COMMENTS
in EPA Letter Dated

September 15, 1993

APR 14 1994

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

7969-99

Basamid-Granular

Soil Fumigant

For pre-planting control of most weeds, nematodes and soil diseases in turf establishment or renovation sites, nursery (forest, non-bearing and ornamental tree, shrub, bedding plant, ground cover) seed beds, propagating beds and tobacco seed beds.

Active Ingredient:

Tetrahydro-3,5,-dimethyl-2H-1,3,5-thiadiazine-2-thione	99.0%
Inert Ingredients	1.0%
TOTAL	100.0%

EPA Reg No 7969-99

EPA Est. No. 7969-WG01

KEEP OUT OF REACH OF CHILDREN.

WARNING

Statement of Practical Treatment

If swallowed: Call a physician or poison control center. Induce vomiting by giving two glasses of warm water and touching the back of throat. Repeat until vomit is clear. Do not induce vomiting or give anything by mouth to an unconscious person.

If in eyes: Immediately flush eyes with large amounts of water and get medical attention.

If on skin: Immediately flush effected areas with large amounts of soap and water. Obtain medical attention for irritation. Remove contaminated clothing and launder before re-use.

If inhaled: Assist respiration as needed. Obtain medical attention for irritation.

In Case of Emergency

In case of large-scale spillage of this product call:

CHEMTREC	1-800-424-9300
BASF Corporation	1-800-832-HELP

In case of medical emergency regarding this product call:

Your local doctor for immediate attention.
Your local poison control center (hospital).
BASF Corporation 1-800-832-HELP

Net Contents: 7½ lbs

BASF Corporation
PO Box 13528, Research Triangle Park, NC 27709

Precautionary Statements

HAZARDS TO HUMANS WARNING

Keep out of reach of children. May be harmful if swallowed. Prolonged exposure may cause irritation of skin, eyes, and mucous membranes. Do not breathe dust. Avoid contact with skin or eyes and clothing. Wash hands thoroughly after contact. Wear rubber gloves when handling product. Rubber shoes must be worn while spreading the product. Do not drink alcoholic beverages before, during or after working with the product. The gases released during the degradation of this product in the soil are irritating to the eyes, skin and mucous membranes. Wear protective clothing when entering treated greenhouses. Avoid inhaling vapors.

Environmental Hazards

This product is toxic to fish. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not contaminate the water when disposing of equipment washwaters. Apply this product only as specified in the label.

Important Notes to User

Read entire label carefully before use.

Avoid use when the soil temperature is extremely high (over 90°F two inches deep). Pest control will be impaired under such conditions. This product is toxic to all growing plants. Do not apply within three to four feet of growing plants or closer than the drip line of trees and large shrubs. If slopes are treated with this product, take precautions to prevent the chemical from washing downward to growing plants. Vapors from soil treated with this product nearby may injure growing plants. Data are not complete on use in propagating beds composed of materials other than soil or soil and peat mixtures. Clean equipment thoroughly with detergent and water after use with this or with other pesticides, before using for other purposes. Fumigation may sometimes slow down the rate of nitrification (the conversion of nitrates from ammonia by bacterial action). Certain ammonia-sensitive plants, therefore, may exhibit growth inhibition when planted in fumigated soils containing high amounts of ammonia nitrogen. To lessen this hazard, at least ½ and preferably all of the nitrogen fertilizer added immediately before or soon after fumigation should be in the form of nitrate nitrogen. This

hazard may also be reduced by delaying planting until several months after fumigation, such as fall fumigation before a spring planted crop. If a nitrate form of nitrogen such as sodium or calcium nitrate is not readily available, ammonium nitrate used sparingly will supply the nitrogen needed without risk. Phosphorus, potassium and other plant nutrients should be used according to soil needs.

Directions for Use

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

Preparation

A. The area should be in seed bed condition with a fine tilth, free of clods. Do not apply to dry or improperly tilled soil. Repeated cultivation prior to treatment will improve control perennial weeds. Ditching around site will prevent weed seeds, nematodes and fungi from washing into the treated area and contaminating it.

B. For optimal effect, the soil to be fumigated must have sufficient moisture for good plant growth (at least 50% field capacity) for 5 to 14 days (depending on temperature) before the treatment. The weed seeds in such an optimally moist soil become ready to germinate

and in this condition are most reliably killed. Heavy soils may need to be irrigated twice to achieve the necessary soil moistness. Weed seeds or seeds bearing nematodes must be mechanically hoed or plowed into the soil 1 to 2 weeks before fumigation so that the emerging weeds and nematodes are subject to fumigation.

C. If root-knot nematodes must be controlled application should be delayed until the root-knot infested root residues have begun to rot. This is at least 2 to 3 weeks after the crop has been harvested and the remaining plant refuse tilled into the soil.

D. Farmyard manure, peat and other organic fertilizers, burnt lime or lime nitrogen should not be applied just before, along with or just after this product. (see also Important Notes to User).

E. The conversion of the active ingredient into the gaseous phase depends primarily on soil temperature and soil moisture. The soil temperature must be above 43°F (6°C) and remain at least this high during the entire fumigation period. The best conditions prevail at soil temperatures of 54° to 64°F (12-18°C) e.g., in late summer and autumn. Do not apply if temperature exceeds

103°F. If the soil temperature falls below 43°F (6°C), the gas may sink into deeper soil layers when there is danger of frost, which can cause crop injury later if the soil is not aerated deeply enough. If the soil temperature is too high, the gases escape too rapidly from the soil and cannot develop their full activity.

F. After incorporation, the soil has to be kept uniformly moist for 5-7 days. As soon as possible after incorporation, the soil should be sealed to retain the concentration of gases in the soil. This can be achieved by:

- compacting the soil surface after incorporation with a roller attached behind the incorporating implement.
- moistening ($\frac{3}{16}$ - $\frac{1}{2}$ in) the surface after incorporation so that a crust forms. Surface compaction and sealing with water can be combined if conditions warrant. When the soil is above 59°F (15°C) too rapid an escape of the gases is impeded by sealing with water and/or light rolling. By doing this the effectiveness of the product is increased. Repeat the water seal as necessary.
- lightly moistening the soil on the 3rd and 4th days after the treatment in

case the weather dries out the soil surface, in order to avoid surface cracks.

- in difficult situations, for example, heavy soils with high pest pressures or where potential for extensive sheet or till erosion exists, best results may be obtained by tarping the treated areas.

Method of Application

Apply this product evenly over the soil. Use sprinkler cap to distribute product onto soil (wear rubber boots and gloves) or pour contents of the container into a drop-type fertilizer or granular product spreader. The contents of this container will treat 900-1200 sq ft. (see Pest Rate Table for rates of application). Keep tightly capped when not in use. Do not store product in open spreader overnight. Immediately after spreading, incorporate the granules into the soil as uniformly as possible to the desired depth - best done with a rotary hoe or disks. Following this, roll the soil surface to impede escape of fumigant.

Cultivation Before Planting

Before seeding, planting or transplanting, all the gaseous residues must be gone from the soil. For this reason, the

soil surface is to be thoroughly loosened with disk, power rotary tiller or hand implement, but no earlier than 5 to 7 days after the application. If the soil temperature rises above 65°F (18°C), a waiting period of 2 to 3 days after loosening the soil is usually sufficient time for the gases to escape from the soil. Cooler conditions indicate a longer waiting period (See Replanting). The soil must not be loosened to the original depth if incorporation as unfumigated soil might be transported from lower layers to the top. A slight new infestation can spread very quickly in decontaminated soil and jeopardize the success of the treatment. At temperatures below 50°F (10°C), fumigation should not be terminated by tillage for 2-4 weeks.

Prevention of Plant Injury in Greenhouses

Prior to application in greenhouses, nursery boxes, etc., all plants and living plant materials have to be removed. Leaks through which gases could penetrate into adjacent rooms or greenhouses with plant material must be sealed. Various ornamentals (e.g., *Ficus* sp., *Hydrangea macrophylla*, *Asparagus plumosus*) are very sensitive to trace amounts of gaseous product emitted during treatment. Prior to turning off the heat in the greenhouse at the beginning of winter, the germination test has to be done to make sure all gases have escaped (see Replanting). Failure to do so may delay spring planting and/or cause plant loss. Application in the field during periods of possible frost has to be avoided. Do not apply when wind may cause granules to drift from target area.

General Information

Weeds controlled: When properly applied, this product will eliminate many weeds such as crabgrass, henbit, pigweed, foxtail, purslane, mustard, witchweed and many other plants and weed seeds.

Nematodes controlled: This product will control root-knot, stubby root, reinform, ectoparasitic root, (i.e., *Meloidogyne* sp., *Pratylenchus* sp., *Hoploaimus* sp., *Tylenchorrhynchus* sp., *Rotylenchulus* sp., *Paratylenchus* sp., *Xiphinema* sp., *Tylenchus* sp.) and other nematodes.

Diseases controlled: This product will control root rots, damping off and wilt diseases caused by *Aphanomyces* sp., *Fusarium* sp., *Phytophthora cactorum*, *Pythium* sp., *Rhizoctonia* sp., *Thielaviopsis basicola*, *Verticillium albo-atrum*, and soil-borne *Stromatinia gladioli* and corm rot of gladiolus caused by *Fusarium*, sp.

Pest Rate Table

This application rates given in the table are for the incorporation depth of 8 inches. When the infestation extends to greater depths, an additional 5 to 6½ ounces/100 sq. ft. of this product are needed per 4 inches soil depth.

WEEDS, NEMATODES AND DISEASES		APPLICATION RATES		
		oz./100 sq. ft. for 8" incorporation	lbs./acre for 8" incorporation	oz./cubic yard substrate
To control soil borne pathogens ¹		9% - 13	255 - 350	4 - 5
To control germinating weed seed ²		13	350	5
To control ectoparasitic root nematodes ³	in light soils	8½ to 9%	222 - 265	3 - 4
	in heavy soils	9% - 13	265 - 350	4½ - 5
For the reduction of infestations of germinating weed seeds and ectoparasitic root nematodes		6%	175	2%
To control root-knot nematodes ³	in light soil	11% - 13	306 - 350	4½ - 5
	in heavy soil	13 to 16%	350 - 450	5 - 6
For the reduction of the infestation of stem nematodes and cyst nematodes ⁴		11% - 19%	306 - 530	4½ - 7%
<ol style="list-style-type: none"> 1. Soils which are infected with the fungi <i>Verticillium albo-atrum</i> and <i>Fusarium oxysporium</i> must be treated to a depth of 12 inches (12% ozs./100 sq. ft.) 2. If the primary goal is the elimination of annual weeds, 8 oz./100 sq. ft. should be incorporated into the top 4-6 inches. The treatment is often more successful if the incorporation is followed by a moistening of the soil. 3. For lighter soils that are heavily infested with nematodes, use the application rates recommended for heavy soils. 4. Mechanical incorporation of plant parts into the soil to aid in their disintegration will improve the degree of reduction. 				

CROP	USE RECOMMENDATIONS CONTROL (ALSO SEE APPLICATION RATES)	COMMENTS (ALSO SEE APPLICATION RATES)
Tobacco seed beds	Diseases, nematodes, weed seeds and grasses	Apply recommended rate (see Pest Rate Table) to the tobacco seed bed (see Method of application). Drench immediately with 15 gals of water per 100 sq ft. No plastic cover is required although it can be used in following usual cultural practices. Like most soil fumigants, this product must be applied ahead of planting and allowed time to dissipate so that it will not injure the crop. See Replanting below, for time of seeding. Ensure that all gases have dissipated from the soil before seeding.
Ornamental Production Fields Ornamental/Landscape Beds Conifer Seed Beds	Diseases, nematodes weed seeds and grasses	See Pest/Rate Table and Method of Application. Uniformly apply recommended amount of this product. Drench immediately with 15 - 20 gals. water/100 sq ft. Plastic cover is required. See Replanting for timing of application. Fall soil treatments are recommended if early spring planting is necessary.
Potting Soil	Diseases, nematodes weed seeds and grasses	Spread moist soil in a solid surface, if possible on polyethylene sheet. Each soil layer should be 8-10 inches deep. The required amount (1 to 1 1/2 ozs per sq. yd.) of this product is spread on each soil layer and thoroughly incorporated with a rotary tiller. Soil preparation setups have proved suitable for larger soil quantities. The treated soil can be heaped up to 1 yd high. Covering the soil heap with a plastic sheet is recommended. Any suitable alternative for mixing this product with the potting soil is acceptable. See Replanting. Use Highest Rate for Cyst Nematodes.
Lawn and turf seed beds	Diseases, nematodes weed seeds and grasses	Apply recommended rate (see Pest Rate Table) to a prepared soil surface. apply 15 gals water per 100 sq. ft. immediately after application. Apply water only as fast as it can be absorbed without runoff. This water will act as a seal to hold gases in the soil. After 5-7 days rake the soil lightly, not deeper than 2 inches. Do this at least 5 days before seeding to release trapped gasses.
Lawn and turf renovation	Diseases, weed seeds and grasses	Apply as for seed beds (above) to kill grasses and weeds in lawn and turf areas without disturbing the soil. The dead grass will then act as a mulch for the newly planted grass seedings. After 5-7 days the treated area should be raked and a nitrate form of plant food applied. Reseeding can be done 7-10 days after these operations.

Replanting

Replanting of treated areas is only possible after a certain period of time. This span between treatment and replanting depends on the temperature, moisture, and structure of the soil. The following table is a guideline for some of the waiting periods and applies to light soils with medium moisture.

Soil Temperature at 4" Depth	Recommended Waiting Period Between Treatment and Replanting
Above 94°F (34°C)	10 days
Above 65°F (18°C)	10-12 days
59°F-65°F (15-18°C)	12-18 days
54°F-59°F (12-15°C)	15-20 days
47°F-54°F (8-12°C)	22-27 days
43°F-47°F (6-8°C)	above 30 days

Replanting: Table of Soil Temperature/Waiting Period

This product must not be used at soil temperature below 43°F (6°C).

Aerate soil with disk, power rotary tiller or hand implement above the depth of original

incorporation before planting. At higher soil temperature (i.e., above 65°F) aeration can commence no earlier than 5-7 days; at lower soil temperature - after 12 days. Do not plant any crop until all fumigant odors have dissipated from the soil and can no longer be detected. As an added precaution (at a

minimum of 5 days after treatment, or fivedays before the waiting period ends) plant a few radish seeds which should germinate in about 5 days. Also plant a few seeds in an untreated area for comparison. If plants from treated area are normal, it is safe to plant.

Fall soil treatment is recommended if early spring planting is necessary. The waiting period can be shortened by repeated hoeing digging or other tillage of the soil. The waiting period is longer when this product is used on soils high in organic matter. Tree cuttings can be plated on nursery soils in the spring following a fall application of this product, as long as the germination test does not show delayed germination.

Do not apply to growing crops. Soil treatment only.

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Storage: Store this product in a dry, cool place below 95°F; it will decompose at higher temperatures. Material reacts nonviolently with moisture, releasing fumigant vapors. Keep container tightly sealed when not in use. Do not reuse empty container.

Keep this product and its vapors away from desirable plants, seeds, fertilizers, insecticides and other agricultural chemicals as plant injury or loss may result from contamination.

Pesticide disposal: Wastes resulting from the use of this product may be disposed of on-site or an approved waste disposal facility.

Container disposal: Triple-rinse container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state authorities, by burning. If burned, stay out of smoke. Do not re-use empty container.

Conditions of Sale and Warranty

The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its

labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. All such risks shall be assumed by the Buyer. BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to above. **BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.** BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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