UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 26 1993

SH39758 300

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Mr. T. R. Nelson
BASF Corporation
P.O. Box 13528
Research Triangle Park, North Carolina 27709-3528

Subject: Labeling Amendments - Additional Use Sites and Additional Container Type
BASF Basamid Granular
EPA Registration No. 7969-99
Your Submissions Dated February 10, 1993, February 16, 1993, February 19, 1993, and July 19, 1993

The amendments referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, are acceptable with the following comments:

1. Under Environmental Hazards, change the second sentence to "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark."

2. Note that this acceptance of your label does not relieve you of your obligation to comply with the Worker Protection Standard (WPS). If any of your products are covered by the WPS, you are required to submit, **and receive the Agency's approval** by April 21, 1994, of a revised label reflecting the required label statements of 40 CFR 156, published in the **FEDERAL REGISTER** on August 21, 1992 (57 FR 38102). Further guidance will be issued. According to 40 CFR 156, subpart K, specifically §156.200(c)(3): "No product to which this subpart applies shall be distributed or sold without amended labeling by any registrant after April 21, 1994."

3. Submit one (1) copy of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Clarence O. Lewis, III
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H7505C)

CONCURRENCES						
SYMBOL	H7505C:J.Fairfax	7969-99:	7/26/93			
SURNAME	J.Fairfax	Lewis				
DATE	9/26/93	7/26/93				

EPA Form 1320-1A (1/90) *Printed on Recycled Paper* OFFICIAL FILE COPY

ACCEPTED
with COMMENTS
in EPA Letter Dated:
JUL 28 1993
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 7969-99
July 7, 1993

2 of 12

Supplemental Label

Basamid®-Granular

soil fumigant

For Soil Treatment Prior to Propagating or Outplanting Non-bearing Berry, Vine, Fruit, and Nut Crops and Similar Non-bearing Plants.

Directions For Use

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

Read and follow the **General Directions, Precautionary Statements,** and all use precautions on the product label.

This labeling must be in the possession of the user at the time of application.

General Information

When properly applied **Basamid-Granular soil fumigant** will control many weed seeds, soil pathogens and nematodes in soils used for transplanting, propagating and outplanting non-bearing berry, vine, fruit and nut crops (see Table 1). Since the effectiveness of this product is dependent on proper soil conditions prior to treatment as well as application procedures, users should carefully read and follow the **Directions for Use** on the Federal label. Do not harvest produce within one year of application.

Use Directions

To control weed seeds, pathogens and nematodes in soils apply **Basamid-Granular** according to the pest/rate guide in Table 2.

For New Fields:
Application should be made evenly over moist, properly-prepared soils using scoops, shakers, drop-type fertilizers, spreaders or other suitable equipment. Immediately after application incorporate the material into the soil at the desired depth, and seal the soil surface by tarping. Since soil temperature will influence product activity, refer the Federal label for aeration and replanting intervals.

For Interplanting: For soil treatment prior to interplanting in existing orchards, berry fields and similar areas, thoroughly till a spot large enough to accommodate the root system of the plant. Root systems of nearby existing plants should be completely severed to avoid contact with the product. Soil may then be treated in place based on the area and depth tilled, or removed and treated in a pile. The soil surface should be tarped for best results. Follow the guidelines on the Federal label for replanting and aeration intervals based on soil temperature or jar test.

In Case of Emergency

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

CHEMTREC . . . 800-424-9300
BASF Corp . . 800-832-HELP

In case of medical emergency regarding this product, call:

1. Your local doctor for immediate treatment.
2. Your local poison control center (hospital).
3. BASF (800) 832-HELP.

Table 1.
NON-BEARING CROPS* SUITABLE FOR PLANTING IN BASAMID-TREATED SOIL

ORCHARD	BERRIES	OTHER	NON-CROP
Apples	Blackberries	Grapes	Flower Bulbs
Pears	Raspberries	Cranberries	
Plums	Blueberries	Hops	
Prunes	Gooseberries		
Cherries	Currants		
Peaches	Elderberries		
Apricots	Strawberries		
Nectarines			
Filberts			
Walnuts			

* Do not harvest produce within one year of application.

Table 2.
PEST 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]		9⅜ - 13	255 - 350	4 - 5
To control germinating weed seed[2]		13	350	5
To control ectoparasitic root nematodes[3]	in light soils	8⅛ to 9¾	222 - 265	3 - 4
	in heavy soils	9¾ - 13	265 - 350	4½ - 5
For the reduction of infestations of germinating weed seeds and ectoparasitic root nematodes		6½	175	2½
To control root-knot nematodes[3]	in light soil	11¼ - 13	306 - 350	4½ - 5
	in heavy soil	13 to 16⅛	350 - 450	5 - 6
For the reduction of the infestation of stem nematodes and cyst nematodes[4]		11¼-19½	306 - 530	4½-7½

1. Soils which are infected with the fungi *Verticillium albo-atrum* and *Fusarium oxysporium* must be treated to a depth of 12 inches (12¾ 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 aids in their disintegration will improve the degree of reduction.

Conditions of Sale and Warranty

The Directions for Use of this product reflect the opinion of experts based on field use a d 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.

BASF Corporation
PO Box 13528
Research Triangle Park, NC 27709

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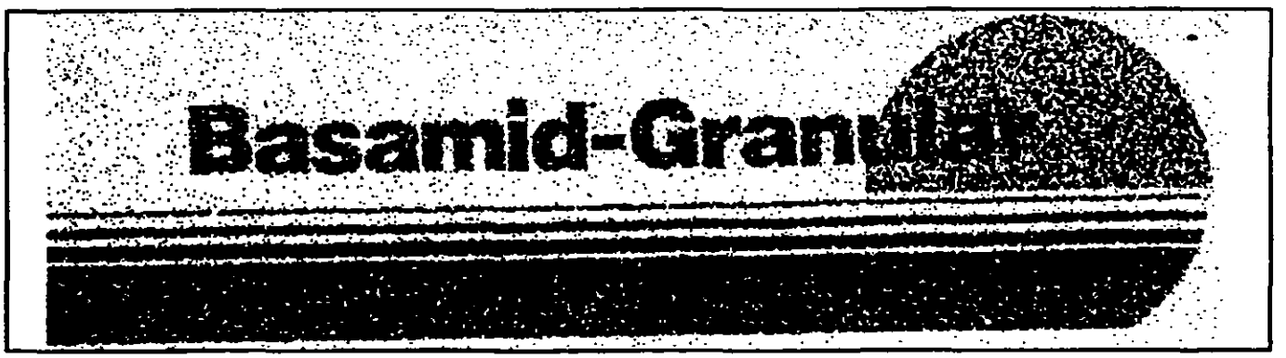

Soil Fumigant

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 and propagating beds, and tobacco seed beds.

Active Ingredient:	
Tetrahydro-3,5,-dimethyl-2H-1,3,5-thiadiazine-2-thione	99%
Inert Ingredients	1%
TOTAL	100%

EPA Reg No 7969-99

KEEP OUT OF REACH OF CHILDREN.

WARNING

Statement of Practical Treatment

If swallowed: Call a physician or poision 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.

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 immeidate 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

ACCEPTED
with COMMENTS
in EPA Letter Dated:

JUL 26 1993

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.
7969-99

PRECAUTIONARY STATMENTS

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 this directly to water or wetlands. 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 in greenhouses and cold frames 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 1/2 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 seedbed 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 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 should be tarped immediately to retain the fumigant in the soil. If the soil was not moist when incorporated, irrigate to the depth of incorporation and then immediately tarp. If irrigation is not available, sufficient rain must occur before the product becomes active. Tarp immediately after sufficient rain has occurred.

Method of Application

Apply this product evenly over the soil. This can be done either by shaker or scoop (use rubber gloves and boots): or on larger outdoor areas with a drop type fertilizer spreader, a Gandy or similar applicator (See Spreader Calibration Charts), or implement combinations (e.g., tool carriers with precision fertilizer spreaders and p.t.o.-driven rotary tillers). 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, the area should be tarped to improve the efficacy of this product.

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 linger 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

Prior to application in green houses, nursery boxes, etc., all plants and living plant materials have to be removed. Leaks through which gases could penetrated into adjacent rooms or greenhouses filled with plants have to be sealed. Various ornamentals (e.g., *Ficus* sp., *Hydrangea macrophylla, Asparagus plumosus)* are very sensitive to even traces of gaseous products emitted during treatment. Prior to turning off the radiators 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, ectoparastic root, (i.e., *Meloiodgyne* 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.

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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]		9¾ - 13	255 - 350	4 - 5
To control germinating weed seed[2]		13	350	5
To control ectoparasitic root nematodes[3]	in light soils	8⅛ to 9¾	222 - 265	3 - 4
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For the reduction of infestations of germinating weed seeds and ectoparasitic root nematodes		6½	175	2½
To control root-knot nematodes[3]	in light soil	11¼ - 13	306 - 350	4½ - 5
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For the reduction of the infestation of stem nematodes and cyst nematodes[4]		11¼-19½	306 - 530	4½-7½

1. Soils which are infected with the fungi *Verticillium albo-atrum* and *Fusarium oxysporium* must be treated to a depth of 12 inches (12¾ 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 aids in their disintegration will improve the degree of reduction.

CROP	USE RECOMMENDATIONS CONTROL (ALSO SEE APPLICATION RATES)	COMMENTS
Tobacco seed beds	Diseases, nematodes, weed seeds and grasses	Apply 13 ozs. of this product per 100 sq. ft. (1 rod by 6 ft.) of tobacco seed bed in the fall. (See Method of application). Drench immediately with 15 gals. if water. Plastic cover is required. Like most soil fumigants, this product must be applied ahead of planting and allowed time to dissipate so that it will no injure the crop. See REPLANTING below, for time of seeding. Ensure that all gases have dissipated from the soil before seeding. For annual weed control only see rate table.
Ornamental seed beds, plant beds and fields; forest tree seed beds and plant 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 1¾ 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 Cover the soil heap with a plastic sheet. 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 8-10 ozs. of this product per 100 sq. ft. of 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. Tarp immediately. 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. Tarp immediately. The dead grass will then act a s 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 day after these operation.
Waiting Period: Tarp with plastic or suitable material for the period of time indicated in the Replanting chart. All uses must be covered except small roadside ornamental beds or small landscape ornamental beds.		

Replanting

Replanting of treated areas is only possible after a ceratin period if 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 (15-18°C)	15-20 days
47°F-54°F (15-18°C)	22-27 days
43°F-47°F (15-18°C)	above 30 days

Replanting: Table of Soil Temperature/Waiting Period

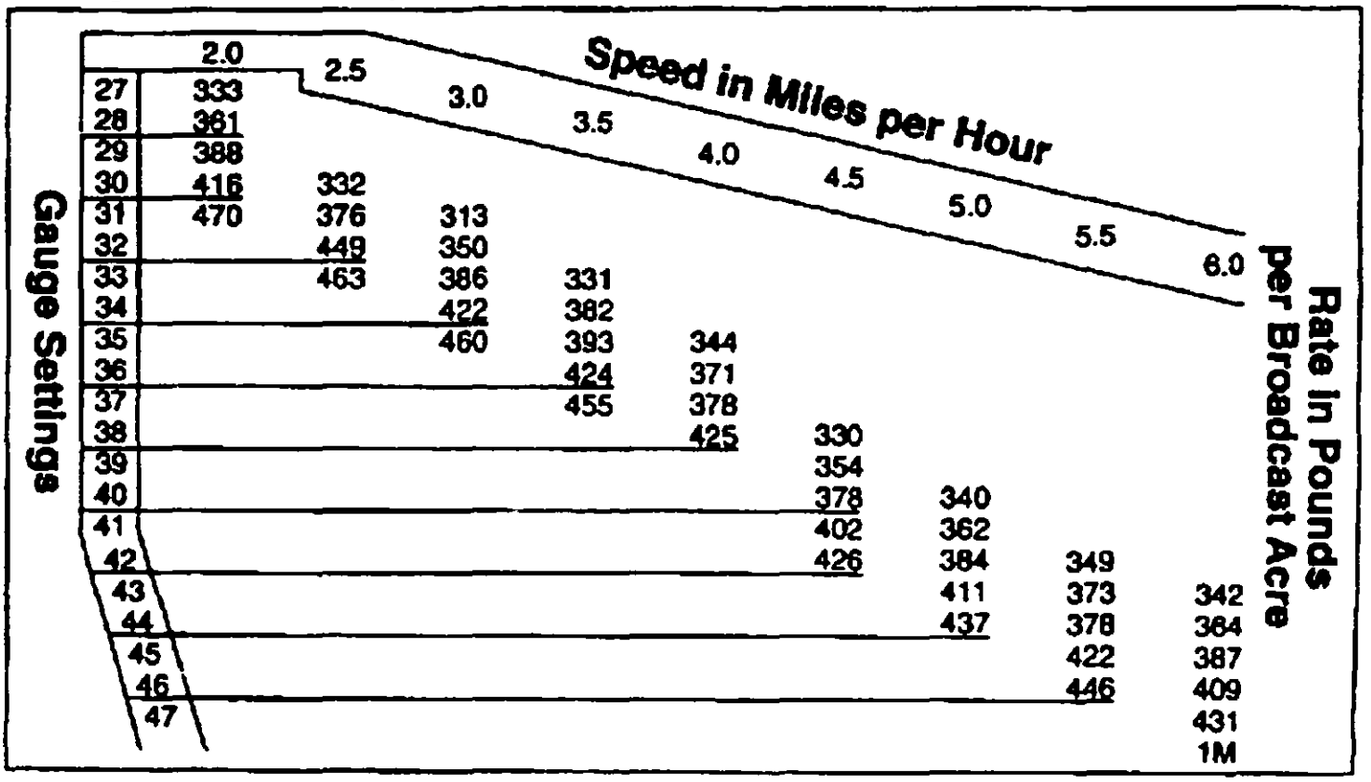
This product must not be used at soil temperature below 43°F (6°C). Aerate soil with disk, power rotary tiller or hand implement above the depth of original incorporation before planting. At higher soil temperature (i.e., above 65°F) aeration can commence no earlier than 5-7 days. At lower soil temperature after 12 days. Do not plant any crop until all fumigant odors have dissipated from the soil and no longer be detected. As an added precaution (at a minimum of 5 days after treatment, or five days 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 tiliage

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 ling as the germination test does not show delayed germination.

Do not apply to growing crops. Soil treatment only.

Spreader Calibration Charts
Gandy Turf Tender (42 inch manual drop spreader)



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 if 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 punctue 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.

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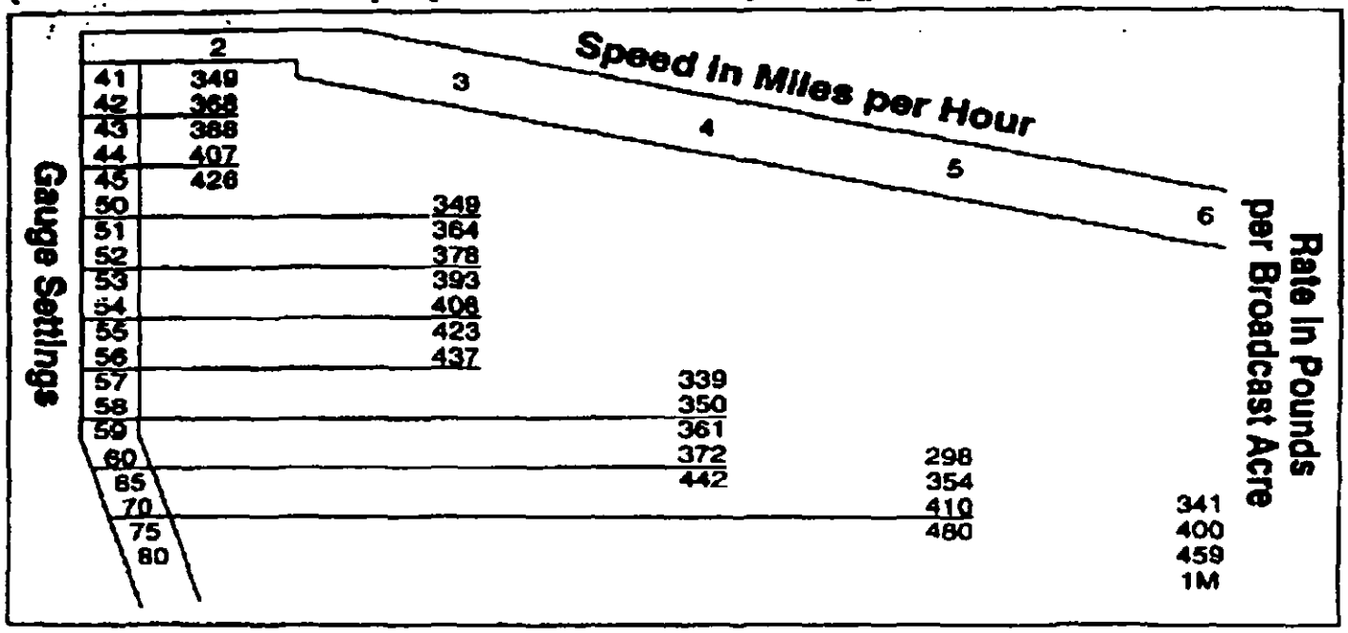
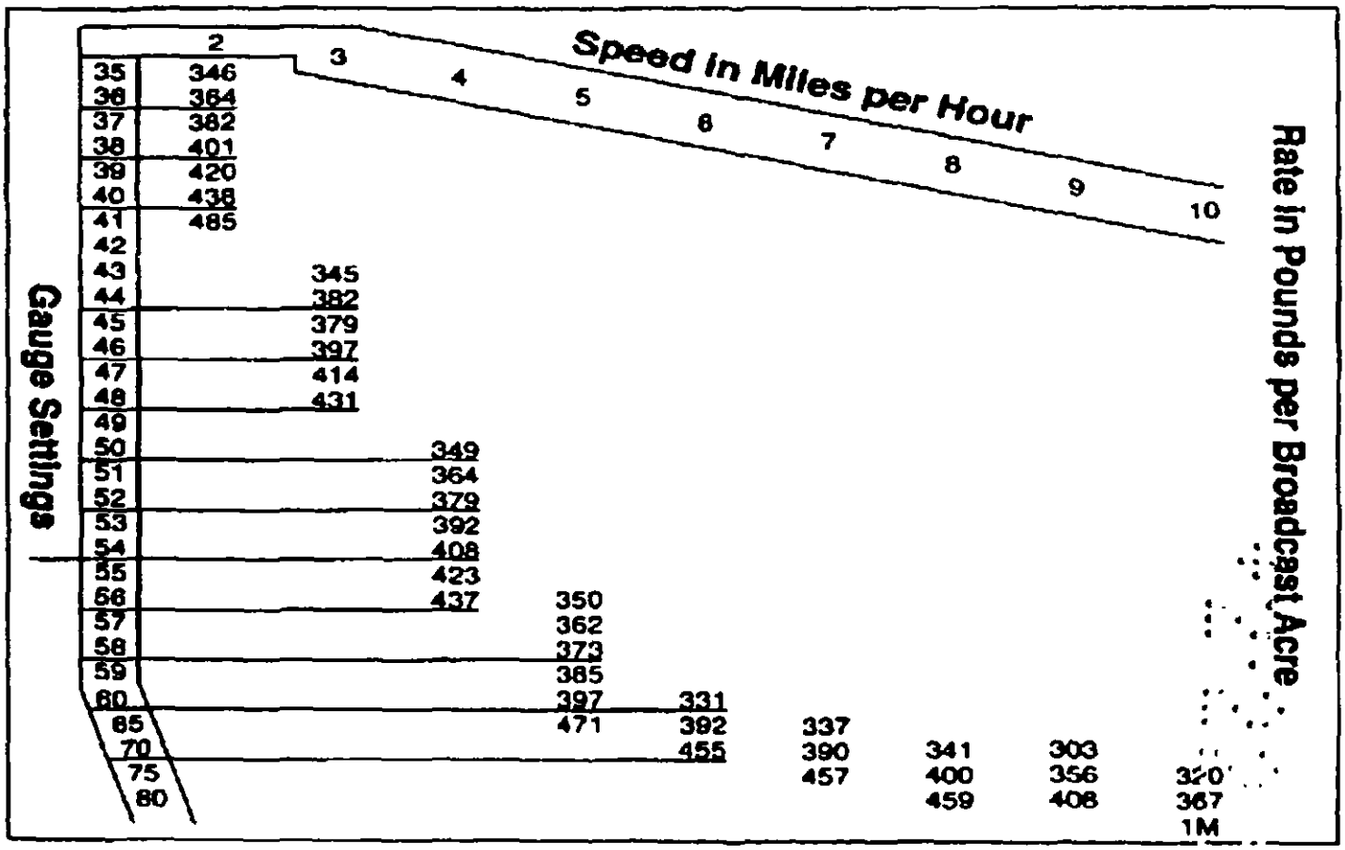
Gandy 10S Series
(Tractor drawn drop spreader-6 inch spacing between holes)



Gandy 10T Series
(Tractor drawn drop spreaders - 4 inch spacing between holes)



CONDITIONS OF SALE AND WARRANTY

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BASF Corporation
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Research Triangle Park, NC

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