

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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SEP 12 1988

Ms. Janet Ollinger
Rohm and Haas Company
Independence Hall West
Philadelphia, PA 19105

Dear Ms. Ollinger:

Subject: Dithane DF
EPA Registration No. 707-180
Your Submission Dated July 20, 1988

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 of the label is enclosed for your records.

In your next printing the label must be revised to include the new statement "Do not contaminate water when disposing of equipment washwaters." This statement should replace the old one.

Sincerely yours,



Lois A. Rossi
Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (TS-767C)

CONCURRENCES

SYMBOL							
SURNAME							
DATE							

ACCEPTED
with COMMENTS
to EPA

DITHANE[®] DF

SEP 1988

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

ACTIVE INGREDIENTS

MANCOZEB

A coordination product of zinc ion and manganese
ethylene bisdithiocarbamate..... 75%
In which the ingredients are:
Manganese++ 15.00%
Zinc++ 1.87%
Ethylene bisdithiocarbamate
ion (C₂H₂N₂S₂) 58.13%

INERT INGREDIENTS

Total 25%
100%

EPA Reg. No. 707-180

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**ROHM
& HAAS**

PHILADELPHIA, PA. 19105

NOTICE: Before using this product, read the entire Precautionary Statements, Conditions of Sale and Warranty, Directions for Use, Use Restrictions and Storage and Disposal Instructions. If the Conditions of Sale and Warranty are not acceptable, return the product unopened within thirty days of purchase to the place of purchase.

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

May cause irritation of nose, throat, eyes and skin. Do not breathe dust or spray mist. **PROTECTIVE CLOTHING AND EQUIPMENT** consisting of a long-sleeved shirt and long pants or a coverall that covers all parts of the body except the head, hands and feet; chemical-resistant gloves; shoes, socks and goggles or a face shield. During mixing and loading, a chemical-resistant apron must also be worn.

STATEMENTS OF PRACTICAL TREATMENT

IF SWALLOWED: Dilute by giving 2 glasses of water to drink and call a physician. Never give anything by mouth to an unconscious person.

IF INHALED: Move subject to fresh air.

IF IN EYES: Flush eyes with large amounts of water for at least 15 minutes. Consult a physician if irritation persists.

IF ON SKIN: Wash affected skin areas with soap and water.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes. For Seed Treatment Products — cover or incorporate spilled treated seed.

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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RE-ENTRY AND WORKER PROTECTION STATEMENTS

Do not enter treated areas without protective clothing until sprays have dried. After (sprays have dried/dusts have settled/vapors have dispersed, as applicable) do not enter or allow entry into treated areas until the 24-hour re-entry interval has expired unless wearing the personal protective equipment listed on the label. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

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. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written warnings must include the following information:

CAUTION

(Insert area or field description) treated with DITHANE DF / fungicide on (insert date of application). Do not enter treated areas without protective clothing until sprays have dried. After (sprays have dried/dusts have settled/vapors have dispersed, as applicable) do not enter or allow entry into treated areas until the 24-hour re-entry interval has expired unless wearing the personal protective equipment listed on the label. In case of accidental exposure, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to DITHANE M-45 DF/75 and describe his condition. For further information see the "Statements of Practical Treatment."

Oral warnings must include the same information that is in the written warnings.

WORKER SAFETY RULES — Keep all unprotected persons, children, livestock and pets away from treated area or where there is danger of drift. Do not rub eyes or mouth with hands (See "Statements of Practical Treatment").

PERSONAL PROTECTIVE EQUIPMENT — For Mixers, Loaders, Applicators and Early Re-entry Workers

HANDLE THIS PRODUCT ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT: a long-sleeved shirt and long pants or a coverall that covers all parts of the body except the head, hands, and feet; chemical-resistant gloves; shoes, socks, and goggles or a face shield. During mixing and loading, a chemical-resistant apron must also be worn.

During application from a tractor with a completely enclosed cab with positive pressure filtration, or aerially with an enclosed cockpit, a long-sleeved shirt and long pants may be worn in place of the above protective clothing. Chemical-resistant gloves must be available in the cab or cockpit and worn while exiting.

IMPORTANT! Before removing gloves, wash them with soap and water. Always wash hands, face, and arms with soap and water before eating, smoking or drinking. Always wash hands and arms with soap and water before using the toilet.

After work take off all clothes and shoes. Shower using soap and water. Wear only clean clothes. Do not use contaminated clothing. Wash protective clothing and protective equipment with soap and water after each use. Personal clothing worn during use must be laundered separately from household articles. Clothing and protective equipment heavily contaminated or drenched with mancozeb must be destroyed according to state and local regulations.

HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED.

During aerial application, human flaggers are prohibited unless in totally enclosed vehicles.

DITHANE is a broad-spectrum protectant fungicide recommended for outdoor or greenhouse grown crops. Optimum disease control is achieved when the fungicide is applied in a regularly scheduled preventive spray program. The addition of an agricultural surfactant will improve fungicide performance by providing a more uniform spray deposit, increased foliar redistribution, and improved fungicide retention during periods of wet weather.

GENERAL USE INFORMATION

DITHANE DF/ is a broad-spectrum protectant fungicide recommended for the control of fruit, field vegetable, and ornamental crop diseases. Optimum disease control is achieved when the fungicide is applied in a regularly scheduled preventive spray program. The addition of an agricultural surfactant will improve fungicide performance by providing a more uniform spray deposit, increased foliar redistribution, and improved fungicide retention during periods of wet weather.

USE RATE DETERMINATION

Carefully read, understand, and follow label use rates and restrictions.

Under low disease conditions, minimum label rates per application can be used while maximum label rates and shortened spray schedules are recommended for severe or threatening disease conditions.

For proper application, determine the number of acres to be treated, the recommended label use rate, and the gallonage to be applied per acre. Prepare only the amount of spray solution required to treat the measured acreage. Careful calibration of spray equipment is recommended prior to use.

When applied by hand sprayers, 1 pound **DITHANE DF/** fungicide per 100 gallons per acre is equivalent to 1 level tablespoon per gallon spray solution.

MIXING

Slowly place into spray tank as it is being filled or thoroughly premix in a nurse tank for concentrate or aircraft sprayers. Add other co-applied fungicides, insecticides, growth regulators, micronutrients, and spray adjuvants after **DITHANE DF/** fungicide has been placed into suspension.

When preparing spray solutions for use in a hand sprayer, premix as a slurry in a small container, and then add to sprayer containing $\frac{1}{2}$ the desired final water volume.

COMPATIBILITY

DITHANE DF/ fungicide is compatible with most commonly used agricultural fungicides, insecticides, and growth regulators. When preparing tank mixes, user should consult spray compatibility charts or State Cooperative Extension Service Specialists prior to actual use.

SPRAY ADJUVANTS

The addition of agricultural surfactants to **DITHANE DF/** fungicide sprays will improve initial spray deposits, fungicide redistribution, and weatherability. The following spray adjuvants have been especially formulated to optimize the performance of foliar-applied agricultural chemicals:

TRITON AG-96*	A low foam, nonionic, general purpose spray adjuvant. May be used in dilute or concentrate sprays applied by aircraft or ground equipment.
TRITON* B-1956*	A water-dispersible, resin-based nonionic surfactant which resists re-wetting and removal by rain. Effective with dilute sprays applied by ground equipment.
TRITON CS-7*	A spreader-binder designed specifically for use in concentrate and low volume sprays applied by aircraft or ground equipment.

Place **DITHANE M-45 DF/75** fungicide into suspension prior to adding an adjuvant to the spray mixture. Read and carefully observe the precautionary statements and all other information appearing on both product labels prior to spray preparation.

APPLICATION

Ground

Thorough coverage foliar sprays generally result in optimum disease control. To achieve good coverage use proper spray pressure, gallonage per acre, nozzles (generally hollow cone), discs (generally D-5 to D-7), nozzle spacing, and tractor speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

Hand Sprayers

Thoroughly spray plant foliage until runoff.

Aerial

A uniform initial spray deposit over the crop canopy generally results in optimum disease control. Each aircraft should be prechecked for droplet size, uniformity of spray pattern, swath width, and spray volume.

Nozzle selection — Hollow cone brass nozzles with a D-series orifice disc and core (whirlplate) are recommended. Nozzles should point straight down or slightly backward.

Swath width — For most field and vegetable crops, swaths just beyond the wingspan of 36 to 40 feet for light aircraft and up to 45 feet for heavier aircraft are suggested. Optimum swath for helicopters is usually 5 to 10 feet beyond normal boom length.

Spray volume — On vegetable and field crops, 2 to 3 gallons of spray per acre are generally optimum; orchards and vineyards can be handled with spray volumes of 5 gallons per acre. Some tall or dense foliage crops, requiring greater penetration to the lower leaf surface, will require higher spray volumes.

Altitude — For most crops, the spray boom should be positioned 5 to 10 feet above the crop canopy.

Flagging — Swaths should be marked at the end of the field with permanent flags or by a flagman. Swaths should be measured accurately with a chain or other device except when rows can be accurately counted.

CHEMIGATION USE DIRECTIONS

Sprinkler Irrigation:

DITHANE DF/ fungicide must be applied on a regular protectant fungicide schedule, not an irrigation schedule. If irrigation cycles are less frequent than recommended **DITHANE DF/** fungicide application intervals, ground or aerial applications must supplement chemigation applications to achieve adequate disease control.

Apply **DITHANE DF/** fungicide only through sprinkler irrigation systems including center-pivot, lateral move, end low, side (wheel) roll, traveler, solid set, or hand move irrigation systems. Do not apply product through any other type of irrigation system.

Lack of fungicidal effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

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Before applying DITHANE DF/ fungicide through sprinkler irrigation equipment, the chemigation system must meet the following specifications:

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- Systems not connected to a public water supply must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located in the irrigation pipeline to prevent water source contamination from back flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

Center-pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment: (Use only with electric or oil hydraulic drive systems which provide a uniform water distribution.)

- Determine size of area to be treated.

- Determine the time required to apply no more than $\frac{1}{4}$ inch water (6,750 gallons water per acre) over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer. Run system at 80 to 95% of manufacturer's rated capacity.
- Using only water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of DITHANE DF/ fungicide required to treat area.
- Add the required amount of DITHANE DF/ fungicide and sufficient water to meet the injection time requirements of the solution tank.
- Maintain constant solution tank agitation during the injection period.
- Stop injection equipment after treatment is completed. Continue to operate the system until DITHANE DF/ fungicide solution has cleared the sprinkler head.

Solid-set, Side (wheel) Roll, and Hand Move Irrigation Equipment:

- Determine acreage covered by sprinkler.
- Fill injector solution tank with water and adjust flow rate to use contents over a 10 to 30 minute interval.
- Determine the amount of DITHANE DF/ fungicide required to treat area.
- Add the required amount of DITHANE DF/ fungicide into the same quantity of water used to calibrate the injection equipment.
- Maintain constant solution tank agitation during the injection period.
- Operate system at normal pressures recommended by the manufacturer of the injection equipment and used for the time interval established during calibration.
- Inject DITHANE DF/ fungicide at the end of the irrigation cycle or as a separate application to maximize foliar fungicide retention.
- Stop injection equipment after treatment is completed. Continue to operate the system until DITHANE DF/ fungicide solution has cleared the last sprinkler head.

DISEASE MONITORING

DITHANE DF/ fungicide is a broad-spectrum, protectant fungicide. If not applied on a routine protectant spray schedule, crops should be scouted on a weekly basis. Fungicide application should be made, at the recommended label use rate and spray schedule, at the first sign of disease, report of disease in the area, or during environmental conditions favorable for disease development.

RESTRICTIONS

Users should carefully read, understand, and follow all use restrictions prior to using DITHANE DF/ fungicide

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VEGETABLES

Crop	Diseases Controlled	Rate of DITHANE DF/ Per Application Lb./A	Remarks (Also Refer To Directions For Use)	Restrictions
Asparagus	Rust <i>CERCOSPORA</i> LEAF SPOT	2	Start applications when rust first appears and repeat at 10 day intervals. Four applications are usually sufficient.	Apply only on asparagus ferns after spears have been harvested.
Cantaloupes	Refer to melons			
Carrots	Alternaria leaf spot Cercospora leaf spot	1 1/2 to 2	Apply in 75 to 125 gallons spray per acre. Start applications when disease first threatens and repeat every 7 to 10 days as needed. The addition of a TRITON surfactant to spray solutions will improve performance.	Do not apply within 7 days of harvest. Do not use treated tops for food or feed.

VEGETABLES (cont'd)

Crop	Diseases Controlled	Rate of DITHANE DF/ Per Application Lb./A	Remarks (Also Refer To Directions For Use)	Restrictions
Celery	Early blight Late blight	2	Start applications in the plant bed when plants first come through the ground. Make further applications at 3 to 5 day intervals until plants are set in the field. Continue field applications on a 7 day schedule. Remove excess residue remaining at harvest by stripping, trimming, and washing. The addition of a TRITON surfactant to spray solutions will improve performance.	Do not apply within 14 days of harvest.
Corn (sweet popcorn)	Common rust Helminthosporium leaf blights	1½	Use sufficient water for thorough coverage. Start applications when disease first appears and repeat at 4 to 7 day intervals. The addition of TRITON SURFACTANTS to spray solutions will improve performance.	Do not apply within 7 days of harvest. Do not feed treated forage to livestock.
Cucumbers	Refer to melons			
Fennel	Refer to celery			Do not apply within 7 days of harvest.
Melons	Alternaria leaf spot Anthracnose Cercospora leaf spot Downy mildew Gummy stem blight Scab	2 to 3	Start applications when plants are in the two-leaf stage and repeat at 5 to 7 day intervals. Use sufficient water and direct spray to provide thorough coverage of both upper and lower leaf surfaces.	Do not apply within 5 days of harvest.
Muskmelons	Refer to melons			
Onions (dry bulb)	Botrytis leaf blight Downy mildew Neck rot Purple blotch	3	Follow a protective spray schedule starting when diseases are first reported in the area and repeat at 7 day intervals throughout the season. The addition of a TRITON surfactant to spray solutions will improve performance. Do not allow spray or drift to contact bulbs after lifting from soil.	Do not apply within 7 days of harvest.
(furrow drench)	Smut		Apply 3 lbs. per acre as a furrow drench at time of planting onion seeds. Use 75 to 125 gallons of water per acre.	Do not use more than 2.4 lbs. actual per acre (29,000 linear feet of furrow) with an 18 inch row spacing.
Potatoes	Early blight Late blight	1 to 2	Begin application when plants are 4 to 6 inches high by applying 1 lb. per acre. As the vines increase in size, apply 1½ to 2 lbs. per acre on a 7 to 10 day spray schedule throughout the season. Reduce the spray interval under heavy disease conditions or weather conditions favorable for rapid disease development. The addition of a TRITON surfactant to spray solutions will improve performance.	
Seed piece (treatment)	Fusarium decay Seedborne common scab		Dic whole or cut potato tubers in 1½ lbs. DITHANE DF/ long side per 50 gals. of water. Place treated tubers in a clean container following treatment and plant as soon as possible. Spread treated seedpieces in a cool place if held before planting.	Do not use treated seed potatoes for food or feed purposes.
Squash, summer	Refer to melons			
Tomatoes	Anthracnose Early blight Gray leaf spot Late blight Leaf mold Septoria leaf spot	1½ to 3¼	Start applications when seedlings emerge or transplants are set and repeat at 7 day intervals throughout the season. The addition of a TRITON surfactant to spray solutions will improve performance.	Do not apply within 5 days of harvest.
Watermelons	Refer to melons			

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FRUITS

Crop	Diseases Controlled	Rate Of DITHANE DF/ Per Application		Remarks (Also Refer To Directions For Use)	Restrictions
		Lb./A	Lb./100 Gals.		
Apples	Bitter rot Black rot Brown rot Fly speck Rusts Scab Sooty blotch	10 3/4 8 to 10	1 to 2	For apple scab control, apply every 7 to 14 days throughout the season starting with a green tip or delayed dormant spray and continue through cover sprays. For control of rust diseases, begin application during bloom period and for other diseases listed, begin application at first cover spray. When using low volume air blast sprays, adjust the mixing rate accordingly. To avoid uneven, blotchy residues from high volume dilute sprays add 2 to 3 ounces TRITON B-1956 per 100 gallons of spray in the last 1 or 2 applications before harvest. Concentrate applications usually leave a uniform, even deposit.	Do not apply within 21 days of harvest in Arkansas, Delaware, Illinois, Indiana, Kansas, Kentucky, Maryland, Missouri, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia, or within 30 days of harvest in other states not mentioned above. Do not graze livestock in treated areas.
Bananas	Sigatoka	2 to 4 2 to 4	—	Apply when leaves first appear and repeat every 2 to 3 weeks or as required. Use sufficient water to provide adequate coverage. The addition of a TRITON surfactant to spray solutions will improve performance.	
Crabapples	Refer to apples	10 3/4 8 to 10	1 to 2		Do not apply within 15 days of harvest. Do not graze livestock in treated areas.
Cranberries	Fruit rot	3 1/2 to 6 1/2 3 to 6	—	Start applications at mid-bloom and repeat at 7 to 10 day intervals as required.	Do not apply within 30 days of harvest.
Grapes (California only)	Bunch rot Deadarm Downy mildew	1 1/2 to 2 1/2	—	Apply in sufficient water to provide thorough coverage starting when new shoots are 1/2 to 1 1/2 inches long. Repeat when shoots are 3 to 5 inches long, when shoots are 8 to 10 inches long, and then at 10 to 14 day intervals until fruit is set.	Do not apply after fruit is set (California only)
	(Other areas) Black rot Deadarm Downy mildew	1 1/2 to 4	—	FOR LATE SEASON CONTROL OF BUNCH ROT, DEADARM, DOWNY MILDEW, THE USE OF OTHER APPROVED AND RECOMMENDED FUNGICIDES IS SUGGESTED.	Do not apply within 66 days of harvest.
Papaya	Anthraxnose Phytophthora fruit rot	2 to 4 2 to 2 1/2	—	Start applications at flowering and continue at 7 to 14 day intervals. Direct spray to crown and blossom area. CONTINUE AT 7 DAY INTERVALS DURING PERIODS OF HEAVY DISEASE. Use 6 to 8 ounces TRITON B-1956 spreader-sticker per acre.	
Pears	Refer to apples				Do not apply within 15 days of harvest Do not graze livestock in treated areas
	Pear psylla nymphs	10 3/4 8 to 10	1 1/2	Effective control of young nymphs can be obtained by using 2 to 3 consecutive sprays. Applications should start at petal fall and continue at 7 to 10 day intervals. As new growth occurs, it must be protected by spraying. Timing of sprays should coincide with the initial appearance of pear psylla nymphs. Specific timing of sprays should be obtained from State Agricultural Experiment Station workers or State Extension Service specialists.	
(postharvest sprays)			1 1/2 to 2	Use a full coverage spray of 800 to 1000 gallons spray per acre. Timing of spray should be under direction of State Agricultural or Extension Service workers.	DO NOT GRAZE LIVESTOCK IN TREATED AREAS.
Quince	Refer to apples				Do not apply within 15 days of harvest. Do not graze livestock in treated areas.

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FIELD CROPS

Crop	Diseases Controlled	Rate Of DITHANE DF/ Per Application	Remarks (Also Refer To Directions For Use)	Restrictions
		Lb./A		
Barley	Refer to wheat			
Corn (field, hybrid seedcorn)	Common rust Helminthosporium leaf blight	1 1/2	Start application when disease symptoms first appear and depending on severity of infection, continue on a 4 to 14 day schedule. The addition of TRITON SURFACTANTS to spray solutions will improve performance.	Do not apply within 40 days of harvest.
Cotton (Southwest U.S. only)	Rust	1 1/3 to 2 1 1/4 to 2	Start applications when rust first appears and repeat at 10 to 14 day intervals until disease threat is past.	Do not apply after bolls are open. Do not graze livestock in treated areas or feed gin trash to livestock.
Oats	Refer to wheat			
Peanuts	Cercospora leaf spot Rust	1 to 2	Start applications when disease first appears or is reported in area. Repeat sprays at 10 to 14 day intervals. Reduce sprays to a 7 day interval during humid weather.	Do not apply within 14 days of harvest. Do not feed treated vines to livestock.
Rye	Refer to wheat			
Sugar Beets	Cercospora leaf spot	1 1/2 to 3 1/2 1 1/2 to 2	Start application when disease first threatens and repeat every 7 to 10 days as needed. The addition of a TRITON surfactant to spray solutions will improve performance.	Do not apply within 14 days of harvest. Do not feed treated tops to livestock.
Wheat	Helminthosporium blights and leaf spot leaf rust Septoria leaf spot Septoria glume blotch Tan spot	2	Start application at onset of disease or when plants are in the tillering to jointing stage and repeat at 7 to 10 day intervals. The addition of TRITON CS 7 to spray solutions will improve performance.	Do not make more than three applications during the season. Do not apply within 26 days of harvest. Do not graze livestock in treated areas within 26 days after application.

SEED TREATMENT

Crop	Diseases Controlled	Seed Treatment RATE FOR DITHANE DF/ Per Application		Remarks (Also Refer To Directions For Use)	Restrictions ¹
		Oz./Bu.	Oz./100 Lb.		
GENERAL USE INSTRUCTIONS				Seeds to be treated should be cleaned and well cured prior to treatment. DITHANE DF/ fungicide may be applied to dry seed with conventional slurry seed treating equipment. For best results, the seed must be completely and uniformly covered with fungicide. For seed treatment, a dye must be added to DITHANE DF/ fungicide which will impart an unnatural color to the seed.	Treated seed should be labeled, "Must not be used for food, feed, or oil purposes."
Barley	Covered smut Damping-off False loose smut Seed rots Seedling blights	1.4 to 2.1	2.9 to 4.5		
Corn (field)	Damping-off Seed rots Seedling blights	1.6 to 3.2	2.9 to 5.8		
Cotton (acid delinted)	Damping-off Seedling blights	—	3.2		
(reginned)	Damping-off Seedling blights	—	6.4		
Rice	Damping-off	2.1 to 4.3	3.8 to 7.6		

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SEED TREATMENT (cont'd)

Crop	Diseases Controlled	Seed Treatment RATE for DITHANE DF/ Per Application		Remarks (Also Refer To Directions For Use)	Restrictions
		Oz./Bu.	Oz./100 lb.		
Oats	Damping-off Seed rots Seedling blights Smuts	1.4 to 2.1	4.3 to 6.7		
Peanuts (shelled)	Damping-off Seed rots Seedling blights	2.1 to 4.3	8.5 to 17.0		
Rice	Damping-off Seed rots Seedling blights	—	2.1 to 4.3	Apply before, during or after soaking in water.	
Rye	Bunt Damping-off Seed rots Seedling blights	1.4 to 2.1	2.5 to 3.8		
Safflower	Seedborne rust (<i>Puccinia carthami</i>)		2.1		
Sorghum	Covered kernel smut Damping-off Seed rots Seedling blights	1.6 to 2.7	2.9 to 4.8		
Tomatoes	Damping-off Seed rots Seedling blights		8.5		
Wheat	Bunt Damping-off Seed rots Seedling blights	1.4 to 2.1	2.3 to 3.5		

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Crop	Diseases Controlled	Rate of DITHANE DF/ Per Application		Remarks (Also Refer To Directions For Use)
Asparagus crowns	Crown rot	1 lb. per 100 gals.		Place loosely packed crowns into a burlap bag and soak, with gentle agitation, in the fungicide solution for 5 minutes. Remove bag, drain well, and plant crowns as soon as possible. A tank large enough to hold a single burlap bag will treat 2 bags of crowns. Clean dipping suspension should then be prepared in a clean tank. Dirty crowns should be pre-washed to remove excess soil.
Caprifig	Assorted molds Endosepsis (<i>Fusarium</i>)	1 lb. per 25 gals		Prepare mamme figs by making a shallow cut through the eye and then hand dividing to avoid wasp injury. Submerge mamme figs in the fungicide suspension for a minimum of 15 minutes. The fungicide suspension should be stirred frequently to prevent settling out. Fresh dipping solutions should be used after treating 4 or 5 batches of figs. After treatment, figs should be drained prior to placement in trees.
Conifers	Fungal LOPHODERMUM NEEDLE CAST	4 lbs. per 100 gals. 4		For use in nursery and newly transplanted plantings. Apply at 21 day intervals during periods of sprinkler irrigations and at monthly intervals during the rest of the year when beds are not covered with snow. The addition of TRITON B-1956 to spray solutions is recommended.
Pineapples	Phytophthora heart rot	3.4 lbs. per 10 gals.		Dip planting material in fungicide solution prior to planting. Stir solution frequently to prevent settling out. A new solution should be prepared when at least two-thirds of the volume has been used or sooner if soil from plant material has noticeably discolored the solution. Depending on the cleanliness and size of planting stock, up to 100 gallons of fungicide solution should be used to treat the propagative materials used to plant one acre.

TURF

Crop	Diseases Controlled	Rate of DITHANE DF/ Per Application Oz./1000 Sq.Ft.	Remarks (Also Refer To Directions For Use)	Restrictions
GENERAL USE INSTRUCTIONS			Start application when grass greens-up in spring or when disease first appears and repeat at 7 to 14 day intervals or until disease threat is past. When conditions are especially favorable for disease development, apply maximum fungicide use rate on a 7 day spray schedule. Apply in sufficient water to provide adequate coverage.	Do not graze treated areas. Do not feed clippings to livestock.
Assorted Grasses	Helminthosporium melting-out Rust (leaf, stem, stripe)	4		
	Copper spot Fusarium blight Powdery mildew Red thread Slime mold	4 to 8 1/2 4 to 8		
	Algae	6 to 8 1/2		
	Dollar spot	6 1/2 to 8 1/2		
	Rhizoctonia brown patch	4	Apply on a 7 day spray schedule.	
	Pythium blight	8 1/2 8	Begin applications at first sign of disease and repeat applications at 5 day intervals, or more frequently, if conditions are especially favorable for disease development.	
	Fusarium snow mold	6 1/2 to 8 1/2 6 to 8	Apply at 2 to 6 week intervals during winter.	

GENERAL USE INSTRUCTIONS Neither the manufacturer nor the seller has determined the effects of using DITHANE F-45 flowable fungicide on ornamentals not specified on this label.

Prior to any large-scale application on such plants, the user should determine the effects of DITHANE F-45 flowable fungicide by testing a small section of the type of plants to be treated. User assumes all risks arising out of application to unlabeled plants. The Conditions of Sale and Warranty apply to all uses.

ORNAMENTALS

Crop	Diseases Controlled	Remarks (Also Refer To Directions For Use)	Restrictions
GENERAL USE INSTRUCTIONS For outdoor or greenhouse use, apply the equivalent of 1 1/2 lbs. DITHANE DF/ fungicide per 100 gals. The addition of TRITON B-1956 to spray solutions will improve performance. Begin spraying when plants are well leafed out or at first sign of disease, in a full coverage spray at 7 to 10 day intervals throughout season or follow State Extension Service recommendations for disease control on the following ornamental plants:			
African violet	Botrytis blight		
Anthurium	Anthraxnose, spadix rot		
Arboretum	Cercospora blight		
Ash, mountain	Entomosporium leaf spot Guignardia leaf blotch		
Ash, white	Anthraxnose Cylindrosporium leaf spot		
Aster, perennial	Puccinia rusts		
Aucuba, japonica	Alternaria leaf spot Anthraxnose		
Azalea	Cylindrocladium rot Petal blight Phytophthora twig and bud blight	Apply in a full coverage spray, 2 to 3 times a week, while flowers are opening. Direct spray into flowers and thoroughly spray ground under bushes.	
Begonia	Botrytis blight		
Buffalo berry	Cylindrosporium leaf spot		Do not use fruit for food or feed purposes.
Camelias	Petal blight	Refer to azalea.	
Carnation	Rust Septoria leaf spot		

ORNAMENTALS (cont'd).

Crop	Diseases Controlled	Remarks (Also Refer To Directions For Use)	Restrictions
Cedar, red (Juniper)	Cercospora blight Phomopsis blight		
Chrysanthemum	Ascochyta blight Botrytis petal spot Rust	Apply twice weekly during blooming period.	
Conifers	Lophodermium needle cast Pine gall rust Scurrha brown spot	Begin application in spring or early summer before infection occurs. Repeat after heavy rains and at two- week intervals as long as needed.	
Cordylone	Cercospora leaf spot		
Crabapple (Ornamental)	Cedar-apple rust Scab Sphaeropsis leaf spot		
Cypress, Arizona (Cupressus sp.)	Cercospora blight Monochaetia canker		
Dahlia	Botrytis blight		
Dieffenbachia	Leptosphaeria brown spot		
Dogwood, flowering	Anthrachnose Elsinoe leaf spot Septoria leaf spot	Apply when buds begin to open, when bracts have fallen, 4 weeks later and again in late summer after flower buds for next season have formed.	
Dracaena	Fusarium leaf spot		
Elm	Black leaf spot		
Euonymus	Anthrachnose		
Fatsia	Anthrachnose		
Fern	Rhizoctonia blight		
Ficus	Cercospora leaf spot		
Firethorn (Pyracantha)	Fusicladium scab		
Fir, Douglas	Swiss needle cast		
Fuchsia	Botrytis blight Rust		
Geranium	Rust		
Gladiolus	Botrytis blossom blight Curvularia leaf spot	Make regular weekly applications starting before diseases appear and increase to 2 or 3 applications per week during periods of heavy disease and during rainy weather. On flower spikes, reduce spray concentration to $\frac{3}{4}$ lb. per 100 gals.	
Hawthorn	Cedar-apple rust Fabraea leaf spot Frogeye leaf spot Hawthorn rust Scab		
Holly	Purple spot		
Hollyhock	Anthrachnose Cercospora leaf spot Puccinia rusts		
Honeysuckle	Herpobasidium blight		
Horsechestnut, Buckeye	Alternaria leaf spot Guignardia leaf blotch		
Hydrangea	Botrytis blight Cercospora leaf spot		
Iris	Didymellina leaf spot Myrothecium ink spot		
Juniper	Phomopsis blight		
Laurel, mountain	Cercospora leaf spot Petal blight	Refer to azalea.	
Ligustrum	Cercospora leaf spot		
Lily	Botrytis blight		
Magnolia	Didymellina leaf spot		

Crop	Diseases Controlled	Remarks (Also Refer To Directions For Use)	Restrictions
Maple	Alternaria leaf spot Phyllosticta leaf spot		Do not use on Sugar maples intended for the production of maple syrup.
Marigold	Botrytis blossom blight		
Narcissus	Botrytis blight (fire) Smoulder		
Oak	Actinopelte leaf spot Taphrina leaf blister		
Orchid (Dendrobium)	Botrytis blossom blight		
Pachysandra	Volutella blight	Use a drenching spray of 2 lbs. per 50 gallons of water per 5,000 sq. ft. of bed. Start application at first sign of disease and apply at least 5 applications at 10 to 14 day intervals	
Pansy	Anthracoze		
Peony	Botrytis blossom blight Phytophthora blight	Apply in early spring and early fall, drenching soil around plants as well as the foliage. Promptly destroy all infected plant parts.	
Peperomia	Cercospora leaf spot		
Philodendron	Dactylaria leaf spot Phytophthora leaf spot		
Photinia	Entomosporium leaf spot		
Pleomele	Fusarium leaf spot		
Primsetia	Sphaeloma scab		
Rhododendron	Cercospora leaf spot Discosia leaf spot Petal blight	Refer to azalea.	
Rose	Black spot Cercospora leaf spot Rust		
Schefflera	Alternaria blight		
Skunkbush, sumac	Cylindrosporium leaf spot		
Snapdragon	Rust		
Statice	Cercospora frog-eye		
Syngonium	Cephalosporium leaf spot		
Tulip	Botrytis blight (fire)		
Venus, flytrap	Anthracoze		
Viburnum	Downy mildew Ramularia leaf spot		
Walnut	Anthracoze		Do not use treated walnuts for food or feed purposes
Zinnia	Alternaria leaf blight		

FUNGICIDE TANK MIXES:

The following tank mix recommendations are made for the improved control of specific diseases. Before mixing DITHANE DF/ fungicide with any other fungicide, read and carefully observe the cautionary and all other information appearing on both product labels. Use must abide by the most restrictive limitations appearing on the product labels.

Crop	Co-Applied Fungicide	For Improved Control Of:	Use Rate Per Application	DITHANE DF/ Use Rate Per Application	Remarks (Also Refer To Directions For Use)
Apples	BENLATE 50 WP*	Powdery mildew	2 to 3 ozs./100 gals.	1/2 to 1 lb. /100 gals	
	TOPSIN-M70 WP*			1 to 1 1/2	
	BAYLETON 50 WP		1/2 to 2 ozs./100 gals.	1 to 2 lbs./100 gals.	
	KARATHANE WD	Mite suppression Powdery mildew	1/2 to 3/4 lb./100 gals		
	KARATHANE LC		4 to 6 fl. ozs./100 gals		
Barley	BAYLETON 50 WP	Powdery mildew Rust (leaf, stem, stripe)	2 to 4 ozs./A	2 lbs./A	

FUNGICIDE TANK MIXES (cont'd)

Crop	Co-Applied Fungicide	For Improved Control Of:	Use Rate Per Application	DITHANE DF Use Rate Per Application	Remarks (Also Refer To Directions For Use)
Celery	BENLATE 50 WP*	Early blight Late blight	4 ozs./A	1½ to 2 lbs./A	
	TOPSIN-M70 WP*				
	Fixed Coppers	Bacterial leaf spot	Manufacturer's label use rate	2 lbs./A	
Cucumbers	Refer to melons				
Grapes	BAYLETON 50 WP	Powdery mildew	2 to 6 ozs./A	1½ to 4½ lbs./A	Do not use in California
	KARATHANE WD		1 to 2½ lbs./A	1½ to 4	
	KARATHANE LC		4 to 8 fl. ozs./100 gals.		
	BENLATE 50 WP*		¾ to 1 lb./A		
Melons	BENLATE 50 WP*	Anthracnose Gummy stem blight Powdery mildew Target spot	4 to 8 ozs./A	2 to 3½ lbs./A 2 to 3	Do not use in California. Do not use on squash or pumpkins
	KARATHANE WD	Powdery mildew	8 to 12 ozs./A		
	KARATHANE LC		3 to 4 fl. ozs./100 gals.		
	DIFOLATAN 80 SPRILLS	Gummy stem blight	1½ to 2 lbs./A		
Peanuts	BENLATE 50 WP*	Ascochyta web blotch Early leaf spot Late leaf spot	4 ozs./A	1 to 2 lbs./A	
	TOPSIN-M70 WP*				
Pears	BAYLETON 50 WP	Powdery mildew	½ to 2 ozs./100 gals.	1 to 2 lbs./100 gals.	Do not use in California.
	KARATHANE WD	Mite suppression Powdery mildew	½ to ¾ lbs./100 gals.		
	KARATHANE LC		4 to 6 fl. ozs./100 gals.		
Potatoes	Triphenyl Tin Hydroxide (TPTH)	Early blight	½ to full label use rate	1½ to 2 lbs./A	
Pumpkins	Refer to melons				DIFOLATAN may not be used on pumpkins
Roses, Flowers, Ornamentals, and shade trees	BENLATE 50 WP*	Leaf spots Powdery mildew	½ to 1 lb./100 gals.	1½ lb./100 gals.	4
	TOPSIN-M70 WP				
	KARATHANE WD	Mite suppression Powdery mildew	6 to 8 ozs./100 gals.		
Squash, summer	Refer to melons				DIFOLATAN may not be used on squash
Sugar beets	BENLATE 50 WP*	Cercospora leaf spot	4 ozs./A	1½ to 2 lbs./A	
	TOPSIN-M70 WP*				
	MERTECT 340-F*		6 fl. ozs./A		
	Triphenyl Tin Hydroxide (TPTH)		½ to full label rate		
Tomatoes	Fixed Coppers	Bacterial leaf spot	Manufacturer's label use rate	1½ to 3¼ lbs./A	
	DYRENE 50 WP	Gray leaf spot	½ to 1 lb./A		
	BENLATE 50 WP*	Botrytis gray mold Sclerotinia white mold			
Wheat	BAYLETON 50 WP	Powdery mildew Rust (leaf, stem, stripe)	2 to 4 ozs./A	2 lbs./A	

well-ventilated area. Do not allow to become wet or overheated in storage; decomposition, impaired activity, or fire may result. Keep container closed when not in use.

Pallets of containers should not be stacked more than three high. Provide access aisle for each two rows. Decomposition produces a foul odor; if observed, check for hot containers and immediately remove to open areas for disposal.

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

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of it in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Sweep or shovel into containers for disposal or reworking. Keep dusting to a minimum. Flush contaminated area with a large amount of water to a chemical or sanitary sewer containing a settling pit. Refer to Precautionary Statements.

CONDITIONS OF SALE AND WARRANTY

Rohm and Haas warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions under normal conditions of use. ROHM AND HAAS MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES EITHER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. Handling, storage and use of the product by Buyer or User are beyond the control of Rohm and Haas and Seller. Risks such as crop injury, ineffectiveness or other unintended consequences resulting from, but not limited to, weather or soil conditions, presence of other materials, disease, pests, drift to other crops or property or failure to follow label directions will be assumed by the Buyer or User. IN NO CASE WILL ROHM AND HAAS OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.

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