

11/22/96

PM 22

5905-491

PS 1718

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95



United States
Environmental Protection Agency
Washington, DC 20460

Registration
 Amendment
 Other

OPP Identifier Number
213208

Application for Pesticide - Section I

1. Company/Product Number 5905-491	2. EPA Product Manager C. GILES-PARKER	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) 3 LB. COPPER FLOWABLE	PM# 22	
5. Name and Address of Applicant (Include ZIP Code) HELENA CHEMICAL COMPANY 6075 POPLAR AVENUE, SUITE 500 MEMPHIS, TN 38119 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

NOTIFICATION TO CHANGE CHEMIGATION ADVISORY STATEMENT.

NOTIFICATION

NOV 22 1996

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
				<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
* Certification must be submitted	If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	Other (Specify) _____	
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other		

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name JUDY OLDHAM	Title MGR., REGISTRATION SERVICES	Telephone No. (Include Area Code) (901) 352-3420
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title MGR., REGISTRATION SERVICES	
4. Typed Name JUDY OLDHAM	5. Date NOVEMBER 1, 1996	

3 LB. COPPER FLOWABLE FUNGICIDE

ACTIVE INGREDIENTS:

Copper hydroxide 37.5%

INERT INGREDIENTS: 62.5%

TOTAL 100.0%

(Metallic copper equivalent24.4%)

NOTIFICATION

This product contains three (3) pounds of metallic copper per gallon.

KEEP OUT OF REACH OF CHILDREN

DANGER - PELIGRO

CAUSES IRREVERSIBLE EYE DAMAGE. In case of contact with the eyes wash with large amounts of water and get medical attention immediately.

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES - Wash with large amounts of water and get medical attention immediately.

IF SWALLOWED - Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, large quantities of water. Avoid alcohol.

Note to Physician - Probable mucosal damage may contraindicate use of gastric lavage.

IF INHALED - Remove victim to fresh air. Get medical attention.

IF ON SKIN - Wash thoroughly with soap and water. Get medical attention if irrigation persists.

See Inside Booklet for Additional Precautionary Statements

EPA REG. NO. 5905-491

NET CONTENTS: 11-13-96

EPA EST. NO.

**MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TN 38119**

EPA

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed, absorbed through the skin, or inhaled. Do not get in eyes, on skin, or on clothing. May cause skin sensitization in certain individuals.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-Sleeved shirt and long pants

Waterproof gloves

Shoes plus socks

Protective Eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters. Drift and runoff from treated area may be hazardous to fish and aquatic organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective Eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not enter treated areas without protective clothing until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Keep in a cool place. Do not store at temperatures below 32° F. Open dumping is prohibited. Do not reuse empty container.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or recon-

ditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities by burning. If burned, stay out of smoke.

GENERAL INSTRUCTIONS

Use **3 LB. COPPER FLOWABLE** as noted below. **3 LB. COPPER FLOWABLE** is adaptable to spraying from all types of spray equipment. Depending on the equipment used and the specific crop, the volume applied per acre will differ. For dilute, high volume sprays; use from 25 to 100 gallons of water per acre for most vegetable crops, 400 to 800 GPA for fruit and nut crops and up to 1500 gallons per acre as may be required for large citrus groves. For aerial spraying, 3 to 15 GPA are commonly used. For concentrate ground sprays, apply from 5 to 20 gallons per acre for vegetable crops and 25 to 100 gallons per acre for fruit and nut crops. Add **3 LB. COPPER FLOWABLE** slowly to spray tank partially filled with water. Spreader-stickers, insecticides, nutrients, etc. should be added last. **3 LB. COPPER FLOWABLE** is compatible with commercially formulated spreader-stickers, oils and such insecticides as Carbaryl and other fungicides. Observe all cautions and limitations on label of all products used in mixtures.

The following specific instructions are based on general applications. The recommendations of the State Agricultural Extension Services should be closely followed as to timing, frequency, and number of sprays per season. When a range of doses are given for the use site, use the low dose when conditions are not favorable for disease development and use the high dose when conditions are favorable for disease development. Consult your State Agricultural Extension Service for guidance in determining what conditions favor diseases for the particular use site.

GENERAL CHEMIGATION INSTRUCTIONS

Do not apply this product through any irrigation system using aluminum parts or components as damage to the system may occur. Such application is prohibited, regardless of whether the irrigation system is flushed with water after use of this product.

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation system(s) **which contain no aluminum parts or components.** Do not apply this product through any other type of irrigation system. **PRE-**

CAUTION: Corrosion of aluminum and carbon steel irrigation sprinkler systems may be experienced with the use of copper based fungicides. The end user assumes all responsibility for use of this product through such systems. If the user elects to apply this product through such systems, it is essential that all application equipment containing this product be thoroughly flushed with clean water after each day's use. Continue to operate system with clean water until all product has cleared the last sprinkler head. Crop injury, or lack of effectiveness, 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.

A. Center Pivot, Traveler, Big Gun, Motorized Lateral Move, End Tow, and Side (Wheel) Roll Irrigation Equipment: Operate system and injection equipment at normal pressures recommended by the manufacturer of injection equipment used. Fill tank or injection equipment with water. Operate system for one complete circle for center pivot or one complete run for the other recommended equipment, measuring time required, amount of water injected, and acreage contained in circle or run. Mix recommended amount of product for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run, but continue to operate irrigation system until the product has been cleared from last sprinkler head. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.

B. Solid Set and Hand Move Irrigation Equipment: Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of product for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Provide constant mechanical agitation in the mix tank to insure that the product will remain in suspension during the injection cycle. This product can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until pesticide is cleared from last sprinkler head.

SAFETY DEVICES

(1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. (3) 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. (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. (5) 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. (6) 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. (7) Do not apply when wind speed favors drift beyond the area intended for treatment.

SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

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. 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.

For additional instructions on safety precautions refer to statements (2), (3), (4), (6) and (7) in the section on SAFETY DEVICES.

POSTING INSTRUCTIONS

Posting of areas to be chemigated is required when any part of a treated area is within 300 feet of sensitive areas, labor camps, businesses, day care centers, hospitals, inpatient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or when chemigated area is open to the public, such as golf courses or retail greenhouses.

Posting must conform to the following requirements: Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain in place indefinitely as long as they are composed of material to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2-1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

**RECOMMENDATIONS
FROST INJURY PROTECTION**

Bacterial Ice nucleation inhibitor - Application of 3 Lb. Copper Flowable made to all crops listed on this label at rates and stages of growth indicated on this label at least 24 hours and not more than 72 hours prior to anticipated frost conditions, will afford control of ice nucleating bacteria (*Pseudomonas syringae*, *Erwinia herbicola*, and *Pseudomonas fluorescens*) and may thereby provide some protection against light frost. The degree of frost protection will vary with weather conditions and other factors. Not recommended for

those geographical areas where weather conditions favor severe frost.

ALFALFA: Cercospora & Leptosphaerulina Leaf Spots - Apply at 1-1/3 to 2-2/3 pints per acre 10-14 days before each harvest or earlier if disease threatens. Apply with ground or aerial equipment. Spray injury may occur with sensitive varieties such as Lahontan.

APPLE: Anthracnose, European Canker, Pseudomonas Syringae - Apply before fall rains at 1 to 1-1/3 gallons. Use on yellow varieties may cause discoloration. To avoid, pick before spraying. **Fireblight** - Apply at 2/3 to 1-1/3 gallons as a full cover spray. Make application between silver-tip and green-tip. **ATTENTION:** Phytotoxicity may occur from late application. (Discontinue use when green-tip is 1/2 inch.) **Crown or Collar Rot (Phytophthora cactorum)** - Mix 2-2/3 to 5-1/2 pints. Apply 4 gallons of suspension as a drench on the lower trunk area of each tree. Apply either in early spring or in fall after harvest each year. Do not use if soil pH is below 5.5 or copper toxicity may result.

ALMONDS: Coryneum Blight, Blossom Brown Rot - Use 1-1/3 to 8 pints 3 LB. **COPPER FLOWABLE** during the early bloom stage (popcorn). A second application in late dormant before foliage buds swell may be necessary when frequent rainfall occurs. To avoid plant injury, do not use above rate after full bloom. **Bacterial Blast (Pseudomonas)** - Use 1-1/3 to 8 pints 3 LB. **COPPER FLOWABLE** at dormant to early pink bud. For blast control in sprinkler irrigated orchards or where disease is severe, apply 2-4 sprays or as many as required at 2/3 to 2 pints per acre at 2 week post-bloom intervals or just before sprinkling. Slight leaf injury may occur from post-bloom spray.

APRICOTS: Coryneum Blight (Shot Hole) & Blossom Brown Rot - Apply at popcorn to full bloom using 1-1/3 to 4 pints as a full cover spray. To avoid spray injury, do not apply after bloom.

ATEMOYA: Anthracnose - Apply 4 pints per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

AVOCADOS: Scab - Apply when bloom buds begin to swell at 1-1/3 to 2-2/3 pints 3 LB. **COPPER FLOWABLE** or 2/3 to 1-2/3 gallons per acre depending on equipment. Continue application at monthly intervals for 5 to 6 applications. Follow recommendations of State Agricultural Experiment Stations.

BANANAS: Sigatoka - Apply by air to 1-1/3 to 2-2/3 pints per acre in 3 gallons of water containing 0.5 gallon agricultural oil. Apply on a 14 day schedule throughout the wet season. Apply at 21 day intervals during dry periods. **Black Pitting** - Apply at 2-2/3 to 5-1/3 pints directly to the fruit stem and include the basal portion of the leaf crown. Apply during the first and second weeks after emergency.

BEANS: Bacterial Blight (Halo & Common) - For protective sprays, apply first application when plants are six inches high. Apply on 7-14 day schedule depending on local condition. Use 2/3 to 4 pints per acre depending on disease severity.

BLACKBERRIES (Santiams, Logans, Boysens, Marions, Auroras, Cascades, Chehalems & Thornless Evergreens): **Leaf & Cane Spot** - Apply delayed dormant spray after training in spring at 2-2/3 to 5-1/3 pints plus 1 quart superior-type oil per 100 gallons. Apply again in late spring at 2-2/3 pints plus 1 quart superior-type oil per 100 gallons. Make fall spray application after harvest using 5-1/3 pints plus 1 quart superior-type oil per 100 gallons.

BLUEBERRIES: Bacterial Canker - Apply at 1/3 to 2/3 gallons per acre. Make first application before the fall rains, preferably the first week in October and a second application four weeks later.

BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER & COLLARDS: Downy Mildew - Apply 1/3 to 1-1/3 pints in a minimum of 25 GPA at 7 day intervals. **(CABBAGE ONLY), Black Rot (Xanthomonas), & Black Leaf Spot (Alternaria). (Northeastern and North Central States)** - Apply 1-1/3 to 2-2/3 pints per acre in a minimum of 25 GPA at 7 to 10 day intervals. (Caution: A slight reddening of older leaves may occur on broccoli, and a slight flecking wrapper leaves may occur on cabbage at the 2-2/3 pints rate.)

CACAO: Black Pod - Begin applications at the start of the rainy season and continue while infection conditions persist. Sprays should be made as often as 14 to 21 days in high rainfall areas at varying rates from 1-1/3 to 6 pints per acre depending on disease severity. For drier areas, where 2 to 4 applications are recommended during critical infection periods and at long intervals, use 4-1/3 to 11-1/3 pints per acre, according to disease incidence and planting density.

CARAMBOLA: Anthracnose - Apply 1 gallon per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

CARROTS: Carrot Blight (Cercospora) - When disease threatens, apply 1-1/3 to 2-2/3 pints per acre at 7 to 14 day intervals depending on disease severity.

CELERY & CELERIAC: Early, Late & Bacterial Blights - Apply as soon as plants are first established in the field at 1-1/3 to 2-2/3 pints per acre, then every 5-7 days depending on severity and weather.

CHERRY: Dead Bud (Pseudomonas syringae) & Coryneum Blight - Apply 2/3 to 1 gallon in the fall (before heavy fall rains) and again in January. In orchards where the disease is severe, a spray should also be applied shortly after harvest. **Brown Rot Blossom Blight** - Apply 2-2/3 to 4 pints per 100 gallons water as a full cover spray, applied at popcorn and full bloom.

CHIVES: Downy Mildew - Apply 2-2/3 pints per acre. Begin applications when plants are established in the field. Repeat applications every 7 - 10 days as dictated by disease

conditions.

CITRUS: Melanose, Scab & Pink Pitting - Apply 1/3 to 1 gallon per acre, depending on disease severity, as pre-bloom and post bloom sprays. **Greasy Spot** - Apply 3/4 to 4 pints per acre using higher rates when conditions favor disease. May be used in concentrate sprays at equivalent rates. For aerial application use 8 pints **3 LB. COPPER FLOWABLE** per 10 gallons per acre. **Brown Rot** - Apply 2-2/3 to 5-1/3 pints per acre beginning in the fall and continuing as needed. Apply to skirts of trees to a height of at least 4 feet. Apply also to bare ground one foot beyond skirt. Use higher rates when conditions favor disease. **NOTE: In California, in areas subject to copper injury, add 1/3 to 1 pound of high quality lime per gallon of 3 LB. COPPER FLOWABLE.** **Citrus Canker - (SUPPRESSION ONLY)** - Apply 1 gallon per acre, spraying flushes 7-14 days after shoots begin to grown. Young fruit may need additional application. Number and timing of applications will depend on disease pressure. Under heavy disease pressure, each flush of new growth should be sprayed. **Phytophthora** - Mix 2/3 pints with one gallon of water and paint trunks of trees from the soil surface to the lowest scaffold limbs. Apply in May before summer rains and/or in the fall before wrapping trees for freeze protection. This treatment serves as protection for up to one year, but does not cure existing infections.

COFFEE: Coffee Berry Disease (Collectotrichum Coffeanum) - Apply first spray at 4 to 5-1/3 pints per acre after flowering and before the start of long rains and then at 21-28 day intervals until picking. Use higher rates when rainfall is heavy and disease pressure is high. **Bacterial blight (Pseudomonas syringae)** - Apply 4 to 5-1/3 pints per acre. Begin spray program before the start of long rains and then at 21-28 day intervals until picking. The critical time of spraying to control disease is just before, during and after flowering(s), especially when these times coincide with wet weather. Use higher rates when rainfall is heavy and disease pressure is high. **Iron Spot (Cercospora coffeicola) & Pink Disease (Corticium salmonicolor)** - Apply 1-1/3 to 2-2/3 pints per acre as a concentrate or dilute spray. Begin treatment at start of wet season and continue at monthly intervals for three applications. **Leaf Rust** - Apply at 1-1/3 to 7-1/3 pints per acre for average density plantations. Apply 2-1/3 to 10-2/3 pints per acre for high density plantations. Apply before the onset of rain and then at 21 day intervals while rains continue. Use higher rates when rainfall is heavy and disease pressure is high.

CRANBERRY: Fruit Rot, - Apply 5-1/3 to 10-2/3 pints per acre beginning in late bloom. One or two additional applications made at 10 to 14 day intervals may be required, depending on disease pressure. Follow the advice of the local Agricultural Extension Service.

CUCURBITS (CUCUMBERS, CANTALOUPEs, HONEYDEWS, MUSKMELONS, PUMPKINS, SQUASH & WATERMELONS) : **Alternaria Leaf Spot, Angular Leaf Spot, Anthracnose, Downy Mildew, Powdery Mildew, Gummy Stem Blight, Watermelon Bacterial Fruit Blotch (suppression)** - Apply 1 to 4 pints per acre. Begin application when conditions are favorable for disease development. Repeat at 5-10 day intervals. Use higher rates when conditions favor disease. **NOTE: Crop injury may**

occur from application at higher rates and shorter intervals. Discontinue use if injury occurs.

CURRANTS & GOOSEBERRY: Anthracnose & Leaf Spot - Make three applications of **3 LB. COPPER FLOWABLE** at 6-2/3 to 10-2/3 pints per acre, starting after harvest, before bloom and after petal fall.

DILL: Phoma Leaf Spot, Rhizoctonia Foliage Blight - Apply 2-2/3 to 4 pints per acre. Begin application when plants are first established in the field and repeat at 7-10 day intervals depending upon disease severity and environmental conditions. Use higher rates when conditions favor disease.

DOUGLAS FIR: Rhabdocline needlecast - Apply 2-2/3 pints per acre. Begin applications at bud break and repeat at 3-4 week intervals. Apply in a tank mix with another registered pesticide if moderate to severe disease pressure is present.

EGGPLANT: Alternaria Blight, Anthracnose, Phomopsis: Use 1-1/3 pints per acre before disease appears. Repeat at 7 to 10 day intervals.

ENDIVE, ESCAROLE: Downy Mildew - Apply 2/3 to 1-1/3 pints per acre. Begin treatment when disease first appears and repeat every 7-10 days as needed to suppress disease.

FILBERTS: Bacterial Blight - Apply 1-1/3 to 2 gallons per acre as a post-harvest spray. In seasons of heavy rain, make another application after the leaves have dropped. Add 1 pint of a superior type oil per 100 gallons of water. **Eastern Filbert Blight** - Apply 1-1/3 to 2 gallons per acre in enough water to obtain thorough coverage. Make initial application at budswell to budbreak. Additional applications should be made at intervals of 10 to 14 days depending on disease severity or when conditions favor disease pressure. Add 1 pint of superior type oil per 100 gallons of water.

GINSENG, Alternaria Leaf & Stem Blight - May be applied at 1-3/4 pints per acre as a tank mix with two pound Iprodione 50WP in 100 gallons of water per acre. Begin tank mix applications as soon as plants have emerged in spring. Applications should be repeated every seven days until plants become dormant in fall. Apply fungicides at least eight hours before rain, giving the fungicides time to dry on the plants. Use of a spreader-sticker is advised. **NOTE: Alternaria Leaf & Stem Blight** is most severe in humid conditions such as those found in the dense canopies of two-three-and four-year old ginseng. Complete and thorough spray is required for control.

GRAPES: Black Rot, Powdery Mildew, and Downy Mildew - Apply at 1-1/3 to 2-2/3 pints per acre. Apply at budbreak with additional applications throughout the rainy season, depending on the disease severity. (Attention: Slight to severe foliage injury may occur on copper-sensitive varieties such as Concord, Delaware, Niagara, and Rosette.)

GUAVA: Anthracnose, Red Algae - Apply 4 pints per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

HOPS: Downy Mildew - Apply 1-1/3 to 2-2/3 pints as a fungicide crown treatment (after pruning, but before training) as needed. After training, additional fungicide treatments are needed at about 10 day intervals. Discontinue use 2 weeks before harvest.

KIWI: Blossom Blight (Bud Rot) & Leaf Spot (Phomopsis) - Make two to three applications at 1-1/3 to 2 pints per acre during dormant season. Do not apply at time of or after leaf emergence. **Pseudomonas syringae, Erwinia herbicola & Pseudomonas fluorescens** - Apply 1-1/3 gals. in 200 gallons of water per acre. Make applications on a monthly basis. A maximum of 3 applications may be made.

LETTUCE: Downy Mildew - Apply 2/3 to 2-2/3 pints **3 LB. COPPER FLOWABLE** per acre. Begin treatment when disease first appears and repeat every 7-10 days as needed to suppress disease.

LITCHI: Anthracnose - Apply 4 pints per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

LIVE OAK: Ball Moss - Apply at 1/2 to 1 gallon per 100 gallons of water, in spring after heavy rain, using 1.5 gallons of spray per foot of tree height. Make sure to set tufts thoroughly. A second application may be required after 12 months. (NOTE: **3 LB. COPPER FLOWABLE** may be injurious to some ornamentals grown under live oaks.)

MACADAMIA NUTS: Anthracnose - Apply 1 gal. per acre. Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. **Blossom blight & Raceme blight** - Apply 1/2 to 1 gal. per acre depending on disease pressure in 50-300 gallons of water during peak raceme development and bloom period.

MAMEY SAPOTE: Anthracnose, Algal Leaf Spot - Apply 1 to 1-1/3 gallons per acre. Apply when conditions favor disease development. Repeat on 14-30 day schedule as disease severity and environmental conditions dictate. Use higher rates when conditions favor disease.

MANGO: Anthracnose - Apply monthly after fruit set until harvest at 5-1/3 to 13-1/3 pints **3 LB. COPPER FLOWABLE** per acre. Consult Extension Service for local recommendations.

OLIVES: Peacock Spot, Olive Knot - Apply 2/3 to 2 gallons per acre before winter rains fall. A second application in early spring should be made if disease is severe.

ONION: Purple Blotch & Downy Mildew - Apply 1-1/3 to 2-2/3 pints **3 LB. COPPER FLOWABLE** per acre when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals.

PAPAYA: Anthracnose - Apply 2 to 6-2/3 pints per acre beginning before disease is

expected to appear. Repeat at 10 to 14 day intervals or at 5 to 7 day intervals during periods of heavy rainfall. Use the higher rates when conditions favor disease. The addition of a suitable spreader-sticker, such as Kinetic®, may be desirable especially during periods of heavy rains.

PARSLEY: Bacterial Blight (*Pseudomonas* sp.) -- Apply 4 pints per acre. Begin applications when plants are first established in the field and repeat at 5-7 day intervals depending upon disease severity and environmental conditions.

PASSION FRUIT: Anthracnose - Apply 1 gallon per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

PEACHES & NECTARINES: Leaf Curl & Coryneum Blight (Shot Hole) - Apply 2/3 to 2-2/3 gallons per acre after leaf fall as dormant application. Use the higher rate when rainfall is very heavy and disease pressure is high. May be used with an agricultural spray oil. **Brown Rot Blossom Blight, (California)** - Apply 2/3 to 1 gallon per acre as a full cover spray at pink bud. (Application at this time also affords some control of leaf curl and coryneum blight.) **Bacterial Spot** - Apply 5-1/3 pints per acre as a dormant spray. As a post bloom spray, apply 2/3 pint per acre at first and second cover sprays. NOTE: Do not spray later than three weeks prior to harvest. Do not use at rates above those recommended. (Attention: Slight defoliation and spotting of leaves may occur from use in cover sprays.)

PEANUTS: Cercospora Leaf Spot - Begin spraying 35-40 days after planting or when disease symptoms appear. Make ground or aerial application at 1 to 4 pints per acre. For aerial application use 3-10 gallons of water. Continue applications at 10-14 day intervals. Use sufficient water to get adequate coverage. **3 LB. COPPER FLOWABLE** can be sprayed with 1 to 4 quarts of 6 Lb/Gal Sulphur Flowables per acre. Reduce spray interval to 7 days during humid weather. Use higher rates when conditions favor disease.

PEARS: Fireblight, - Apply at 2/3 to 1-1/3 pints per acre at 5 day intervals throughout bloom period. Excessive dosages may cause fruit russet. **Pseudomonas Blight** - Apply before fall rain begins. Use 1 to 1-1/3 gallons per acre and again at dormant before spring growth begins. NOTE: Excessive dosages may cause fruit russet.

PEAS: Powdery Mildew - Begin spray treatment when disease symptoms first appear. Use at 1-4 pints per acre according to disease severity. Repeat applications at weekly intervals.

PECANS: Shuck and Kernel rot (*Phytophthora cactorum*) and Zonate leaf spot (*Cristulariella pyramidalis*) - For suppression, apply 2-2/3 to 5-1/3 pints per acre in sufficient water for good coverage at 2-4 week intervals starting at kernel growth and continuing until shucks open. Use the higher rate and shorter intervals if frequent rainfall occurs. **Mosses, Algae, and Lichen** - Mix 1 gal. per 100 gallons spray plus spreader-sticker, such as Kinetic®, on a dilute spray basis and apply in dormant season before buds swell, thoroughly wetting limbs and mosses.

PEPPERS: Bacterial Spot - When disease threatens, apply 1-1/3 to 4 pints per acre in sufficient water to provide adequate coverage. Use at 7-14 day intervals depending on disease severity.

PISTACHIOS: Botrytis Blight, Botryosphaeria Panicle and Shoot Blight, Septoria Leaf Blight, Late Blight (Alternaria) - Apply 2/3 to 1-1/3 gals. per acre. Make initial application at bud swell and repeat on a 14-28 day schedule. Use higher rates when conditions favor disease.

PLUMS & PRUNES: Coryneum blight (Shot hole) - Apply 2/3 to 2-2/3 gals. per acre as a dormant spray. Use the higher rate when rainfall is heavy and/or disease pressure is high. **Brown rot blossom blight** - Apply 2/3 to 2 gals. per acre full cover application at pink, red or early white bud stage. Use the higher rate when disease pressure is heavy or conditions favor disease development.

POTATOES, Early & Late Blight - Apply at 7 to 10 day intervals beginning when plants are 6 inches high until two weeks before harvest. Use 2/3 to 2 pints per acre when disease pressure is light. When disease pressure is severe, use 2 to 4 pints per acre. **Colorado Potato Beetle** - (Suppression Only) Use rates and timing identical to those recommended for control of early and late blight.

QUINCE: Fire Blight - Apply 1-1/3 pints per acre. Apply at 5 day intervals through bloom period. Apply in adequate water for thorough coverage.

RASPBERRY: Leaf & Cane Spot - Apply 2-2/3 to 5-1/3 pints per acre as a delayed dormant spray after training in the spring. Make fall application after harvest. Add 1 qt. of crop oil per acre.

SPINACH: Anthracnose, Cercospora Leafspot, Downy Mildew, White Rust - Apply 1-1/3 to 2-2/3 pints per acre. Begin treatment when disease first appears and repeat every 7-10 days as needed to suppress disease.

STRAWBERRIES : Downy Mildew, Leaf Spot & Leaf Blight - Apply at 1-1/3 to 4 pints . Begin application when plants are established and continue on a weekly schedule throughout season. Discontinue applications if signs of phytotoxicity appear.

SUGAR APPLE (Annona): Anthracnose - Apply 2 gallons per acre. Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.

SUGAR BEETS & TABLE BEETS : Cercospora Leaf Spot - Start spray when disease threatens and continue for 4 to 5 applications. Spray 10-14 days depending on weather conditions at 1-1/3 to 6-2/3 pints per acre depending on disease severity.

SYCAMORE: Anthracnose - Make two applications using 1-1/3 to 4 pints per 100 gallons as a full cover spray. Make first application at bud crack and second application 7-14 days later at 10% leaf expansion.

TOMATOES: Early Blight - When disease threatens, apply 1-1/3 to 4 pints per acre at 7-10 day intervals. **Bacterial Speck** - Apply at 1-1/3 to 2-2/3 pints per acre at 10-30 day intervals beginning when the disease threatens. Use more frequent applications when disease pressure is high. **Bacterial Spot, Anthracnose, Gray Leaf Mold, Grey Leaf Spot, Septoria Leaf Spot & Late Blight** - When disease threatens, apply 1-1/3 to 5-1/3 pints per acre at 7-10 day intervals, more frequently when disease is severe.

TURFGRASS: Algae - Apply 2/3 pint per 1,000 square feet in 5 gallons of water. May be used as a maintenance spray as needed. May be used alone or in combination with fungicides such as dithiocarbamates. Phytotoxicity may depend on varietal differences. Apply the recommended rate to a small areas and observe 7-10 days for phytotoxicity. If phytotoxicity occurs, discontinue use.

WALNUT: Walnut Blight - Apply first spray at early pre-bloom when catkins are partially expanded. Make three additional applications during bloom and early nutlet stages at 7-10 day intervals. Additional applications may be necessary when frequent rainfall occurs. Apply 5-1/3 to 17 pints per acre. Do not apply more than 17 pints per acre per application.

WATERCRESS: Cercospora Leaf Spot - Apply 2-2/3 pints per acre. Begin application when plants are first established in the field, repeating at 7-14 day intervals depending on disease severity and environmental conditions. Do not exceed 4 applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.

WHEAT & BARLEY & OATS: Septoria Leaf Blotch & Helminthosporum Spot Blotch - Apply 1 to 1-1/3 pints per acre. Make first application at early heading and follow with second application 10 days later.

SEED DRESSING - RICE: Water Mold & Seed Rot (Achlya spp., Pythium spp.) - Use at a rate of 2 to 4 fluid ounces for each 100 pounds of rice seed. For ease of handling and when using a seed treating machine, dilute with an equal amount of water. Maintain continuous agitation of the mixture throughout the operation. Consult State Agricultural Experiment Station regarding specific recommendations for your area.

SEED DRESSING - WHEAT & BARLEY: Bacterial Leaf Blight (Pseudomonas syringae), Bacterial Leaf Streak (Xanthomonas translucens), Common Bunt (Tilletial caries) - Apply at the rate of 2 fluid ounces of formulated product per 100 pounds of seed. It should be diluted with equal parts of water before applying.

ORNAMENTALS

Notice to User: Plant sensitivities to **3 LB. COPPER FLOWABLE** have been found to be acceptable in specific genera and species listed on this label; however, phytotoxicity may occur. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for sensitivity to **3 LB. COPPER**

FLOWABLE. Neither the manufacturer nor seller has determined whether or not **3 LB. COPPER FLOWABLE** can be safely used on ornamental or nursery plants not listed on this label. The user should determine if **3 LB. COPPER FLOWABLE** can be use safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e., bedding plants, foliage, etc., and observe for 7-10 days for symptoms of phytotoxicity prior to commercial use.

Use **3 LB. COPPER FLOWABLE** on container, bench, or bed-grown ornamentals in greenhouses or outdoor nurseries, for professional use on ornamentals grown for indoor and outdoor landscaping, and for control of bacterial and fungal diseases of foliage, flowers and stems.

Apply as a thorough coverage spray using 1-1/3 pints per 100 gallons of water. Begin application at first sign of disease and repeat at 7-14 day intervals as needed; use shorter interval during periods of frequent rains or when severe disease conditions persist.

3 LB. COPPER FLOWABLE may be used as a maintenance spray alone or in combination with other fungicides such as the dithiocarbamates.

ORNAMENTAL/DISEASES:

Althea (Rose of Sharon)/Bacterial Leaf Spot
 Aralia/Xanthomonas & Cercospora leaf Spots, Alternaria
 Amborvitae/Alternaria Twig Blight, Cercospora Leaf Blight
 Azalea*/Cercospora Leaf Spot, Botrytis Blight, Phytophthora Dieback & Powdery Mildew
 Begonia/Xanthomonas Leaf Spot, Anthracnose
 Bougainvillea/Anthracnose, Bacterial Leaf Spot
 Bulbs (Easter Lily**, Tulip, Gladiolus)/Anthracnose, Botrytis Blight
 Camellia/Anthracnose, Bacterial Leaf Spot
 Camphor Tree/Pseudomonas Leaf Spot
 Canna/Pseudomonas Leaf Spot
 Carnation*/Alternaria Blight, Pseudomonas Leaf Spot, & Botrytis Blight
 Chinese Tallow Tree/Bacterial Leaf Spot (Xanthomonas sp., Pseudomonas sp.)
 Chrysanthemum*/Septoria Leaf Spot & Botrytis Blight
 Cotoneaster/Botrytis Blight
 Dahlia/Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
 Date Palm/Pestalotia Leaf Spot
 Dianthus/Bacterial Spot, Bacterial Soft Rot
 Dogwood/Anthracnose
 Dusty Miller/Bacterial Leaf Spot (Pseudomonas cichorii)
 Echinacea/Bacterial Leaf Spot (Pseudomonas cichorii)
 Elm "Drake"/Xanthomonas Leaf Spot

Euonymus/Botrytis Blight & Anthracnose
European Fan Palm/Pestalotia Leaf Spot
Gardenia/Alternaria Leaf Spot, Botrytis Bud Rot, Cercospora Leaf Spot
Geranium/Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
Gladiolus/Alternaria Leaf Spot, Botrytis Gray Mold, Bacterial Leaf Blight
Golden Rain Tree/Bacterial Leaf Spot
Hibiscus/Bacterial Leaf Spot
Holly Fern/Pseudomonas Leaf Spot
Impatiens/Bacterial Leaf Spot
India hawthorn*** (Greenhouse)/Entomosporium Leaf Spot
Ivy*/Xanthomonas Leaf Spot
Ixora/Xanthomonas Leaf Spot
Juniper (Eastern Red Cedar)/Anthracnose
Lantana/Bacterial Leaf Spot
Lilac/Cercospora Leaf Spot
Loblolly Bay/Anthracnose
Loquat/Entomosporium maculate, Colletotrichum sp.
Magnolia (Southern)/Algal Leaf Spot, Anthracnose, Bacterial Leaf Spot
Mandevillas/Anthracnose
Marigold/Alternaria Leaf Spot, Botrytis Leaf and Flower Rot, Cercospora Leaf Spot
Mulberry, Weeping/Bacterial Leaf Spot
Oak, Laurel/Algal Leaf Spot (Cephaleuros virescens)
Oleander/Bacterial Leaf Spot, Fungal Leaf Spot
Pachysandra/Volutella Leaf Blight
Pansy/Downy Mildew
Pear (Flowering)/Fireblight, Leaf Spot
Pentas (Egyptian Star)/Bacterial Leaf Spot (Xanthomonas sp.)
Peony/Botrytis Blight
Periwinkle/Phomopsis Stem Blight
Philodendron/Bacterial Leaf Spot
Phlox/Alternaria Leaf Spot
Photinia (Red Tip)/Anthracnose, Entomosporium Leaf Spot
Pistachio/Anthracnose
Plantain Lily/Bacterial Leaf Spot
Powder Puff Plant/Bacterial Leaf Spot
Pyracantha/Fireblight & Scab
Queen Palm/Exosporium Leaf Spot, Phytophthora Bud Rot
Rhododendron/Alternaria Flower Spot
Rose*/Powdery Mildew, Black Spot
Verbena/Xanthomonas Leaf Spot
Viburnum/Anthracnose
Washingtonia Palm/Pestalotia Leaf Spot
Weeping Willow/Anthracnose
Yucca (Adams Needle)/Cercospora & Septoria Leaf Spot

*Discoloration of foliage and/or blooms have been noted on some varieties. To prevent residues on commercial plants, do not spray just before selling season.

** For Easter Lily, use 4 - 6-2/3 pints per 100 gallons.

*** For India hawthorn, use 2-2/3 - 5-1/3 pints per 100 gallons.

Kinetic is a registered Trademark of Helena Chemical Company

**CONDITIONS OF SALE - LIMITED WARRANTY
AND LIMITATIONS OF LIABILITY AND REMEDIES**

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damage and in no event shall damages or any other recovery of any kind against the Company exceed the price of the product which causes the alleged loss, damage, injury, or other claim. The Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income.

The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.