PM 22 67702-2 6/29/97 1/22

US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (TS-767)
WASHINGTON, DC 20460

NOTICE OF PESTICIDE: [X] REGISTRATION [ ] REREGISTRATION

(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)

EPA REGISTRATION NO.	DATE OF ISSUANCE
67702-2	JUN 29 1997

TERM OF ISSUANCE: conditional

NAME OF PESTICIDE PRODUCT: NEU1140F COPPER SOAP Folwable Liquid Copper Fungicide

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

W. Nekudorff GmbH KG
Postfach 1209
An der Muhle 3
D-31860 Emmerthal, Germany

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) and sec. 4 when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment:

Add the phrase, "EPA Registration No. 67702-2."

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

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Enclosure

[ ] ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL	DATE
[signature]	JUN 29 1997

EPA Form 8570-6 (Rev. 5-76) PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

2/22

NEU1140F COPPER SOAP

Flowable Liquid Copper Fungicide

Active Ingredient:	
Copper Octanoate (Copper Soap)	10.0%
Inert Ingredients	90.0%
Total	100.0%
metallic copper equivalent	1.8%

EPA Registration # EPA Establishment #
Net Contents:

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

If swallowed, call a physician immediately.
If in eyes, wash eyes with water and see a physician.
If on skin, wash with soap and water. See a physician if irritation persists.
If inhaled, move to fresh air.

PRECAUTIONARY STATEMENTS - Household

Hazards to Humans and Domestic Animals

Caution: Harmful if swallowed, absorbed through skin or inhaled. Wash thoroughly with soap and water after handling. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse.

Environmental Hazards

This product may be toxic to fish and aquatic organisms. Do not apply directly to water. Do not contaminate water by disposal of equipment washwaters.

PRECAUTIONARY STATEMENTS - Commercial Agriculture

Hazards to Humans and Domestic Animals

Caution: Harmful if swallowed, absorbed through skin or inhaled. Wash thoroughly with soap and water after handling. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse.

Personal Protective Equipment (PPE) Requirements: Applicators and other handlers must wear: long-sleeved shirts, long pants, waterproof gloves, and shoes plus socks.

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.

ACCEPTED
with COMMENTS
In EPA Letter Dated

JUN 29 1997

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 67702-2

3/22

User Safety Recommendations - Commercial Agriculture

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 product may be 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.

STORAGE AND DISPOSAL - Commercial Agriculture

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

Storage

Store in a secure place, away from open fire or flame. Keep container closed and reseal after use. Product may be damaged by freezing. Do not store product below 4°C. If spilled, use absorbent materials and dispose of in an approved manner.

Disposal

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

Container Disposal: Triple rinse container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

STORAGE AND DISPOSAL - Household

Storage

Store in a secure place, away from open fire or flame. Keep container closed and reseal after use. Product may be damaged by freezing. Do not store product below 4°C. If spilled, use absorbent materials and dispose of in an approved manner.

4/22

Disposal

Do not reuse container. Securely wrap original container in several layers of newspaper and discard in trash.

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 manner that will contact workers or other persons, either directly or through drift. Only protected workers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

- Read and follow all applicable directions and precautions on this label before using.

Agricultural Use Requirements

Use this product 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), restricted-entry interval, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Entry-Restrictions: Do not enter or allow worker entry into treated areas during the restricted-entry interval of 4 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, wear: coveralls, shoes, socks and waterproof gloves.

Conflicting Instructions: If the requirements of the WPS conflict with instructions listed elsewhere on this product label, users must obey the more protective requirements.

5/22

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.

Keep unprotected persons out of treated areas until sprays have dried.

For early reentry to treated areas and that involves contact with anything that has been treated such as plants, soil, or water, wear: coveralls, shoes, socks and waterproof gloves.

DIRECTIONS FOR USE - COMMERCIAL AGRICULTURE

Tank Mixing NEU1140F COPPER SOAP with Other Pesticides

Read and follow all applicable directions and precautions on the label of other products. before mixing with NEU1140F COPPER SOAP.

NEU1140F COPPER SOAP can be applied up to day of harvest. When tank-mixed with products, do not apply that product closer to harvest than is permitted or stated on the other product's label.

Pour NEU1140F COPPER SOAP into spray tank at least half filled with water using adequate agitation. When mixed with other products proven or known to be compatible. wettable powders should be added first. followed in order by flowables (such as NEU1140F COPPER SOAP), and then emulsifiable concentrates.

NEU1140F COPPER SOAP can be mixed with Bravo® (WP, 720, 500). captan, Daconil® 2787, Ferbam, maneb (WP or Flowable), Dithane® M-45, Manzate® 200, sulfur (wettable or flowable), organo phosphates, Thiodan®, *Bacillus thuringiensis* Berliner, Guthion®, Pydrin®, Diazinon®, malathion for use on the crops listed on this label, in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Do not mix NEU1140F COPPER SOAP with oil when applied to citrus. Do not mix NEU1140F COPPER SOAP with chelated or liquid fertilizers. Use caution when using product with other fungicides and insecticides. Observe all cautions and limitations on all products used in mixtures.

Directions for use on Fruit and Field Crops

Do not apply this product through any type of irrigation system.

6/22

Most conventional liquid pesticide plant sprayers can be used to apply NEU1140F COPPER SOAP to plants. A spreader may be used to improve the spreading of NEU1140F COPPER SOAP on hard to wet plants.

BEAN, PEA

Anthracnose, Ascochyta leaf and pod spot, Bacterial blights (halo, common and brown spot), Downy mildew, Gray mold

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

White mold (Sclerotinia)

To prevent floral infection, apply NEU1140F COPPER SOAP at 25% bloom. Use 1.0 to 2.0 gallons of NEU1140F COPPER SOAP in 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre.

BEET, CHARD, SPINACH

Cercospora leaf spot, Downy mildew, White rust

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP.

7/22

applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Powdery Mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

CARROTS

Alternaria leaf blight, Bacterial leaf blight, Cercospora leaf blight

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

CELERY AND CELERIAC

Bacterial leaf spot, Cercospora (early) blight, Septoria (late) blight

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

CITRUS (Grapefruit, Lemon, Lime, Orange, Pummelo, Tangerine)

Melanose, greasy spot, citrus scab, alternaria brown spot

Mix 0.5 to 2.0 gallons NEU1140F COPPER SOAP in 10 gallons of water and apply to one acre by aircraft. Use 0.5 to 2.0 gallons in 100 gallons of water if

8/22

applied by ground spray. Apply 1 to 3 weeks after petal fall. Repeat every 2 weeks if necessary until the fruit is 3 inches in diameter. Do not mix NEU1140F COPPER SOAP with oil when applied on any citrus.

Red alga (Florida), Melanose on fruit

Mix 0.5 to 2.0 gallons in 100 gallons of water when applied as a dilute ground spray. Apply in spring as a preventive spray. Repeat in late summer to control new algal colonies. Do not mix with oil when applying on citrus.

CORN

Southern leaf blight, Cercospora leaf spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

CRUCIFER CROPS (Broccoli, Brussel sprouts, Canola, Cauliflower, Cabbage, Kale, Kohlrabi, Mustard, Pak-Choi, Rape, Rutabaga, Turnip)

Alternaria blight, Bacterial leaf spot, Downy mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

9/22

White mold (Sclerotinia)

To reduce floral infection, apply NEU1140F COPPER SOAP at 25% bloom. Use 0.5 to 2.0 gallons per acre in sufficient water for adequate coverage, usually 5 to 10 gallons per acre by aircraft or 50 to 100 gallons per acre by ground equipment.

CUCURBITS (Cucumbers, cantaloupe, squash, pumpkin, zucchini)

Alternaria blight, scab, Angular leaf spot, Anthracnose, Downy mildew, Gray mold, Scab, Ulocladium leaf spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

For cucumbers grown in a greenhouse, apply NEU1140F COPPER SOAP 2 times per week in the first 2 weeks after emergence, followed by sprays every 7 days.

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application. On plants that are very susceptible to powdery mildew, such as greenhouse-grown cucumber, it is best to spray the plants twice a week during the first 2 weeks after emergence, and weekly thereafter. On outdoor plants, re-apply after rain.

CURRANT AND GOOSEBERRY

Anthracnose, Phyllosticta and Septoria leaf spots

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals

for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

GINSENG

Alternaria blight, Botrytis blight, Phytophthora mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

GRAPES

Note: Do not mix NEU1140F COPPER SOAP with lime. Certain Vinifera and French Hybrid varieties may be sensitive to copper sprays resulting in marginal leaf burn. Before spraying these varieties, consult your State Experiment Station or make test sprays.

Downy mildew, Black rot, Phomopsis Cane and Leaf Spot, Powdery mildew

Mix 0.5 to 2.0 gallons per 100 gallons of water and apply to one acre. For best control begin treatment when new growth reaches ½ inch and repeat at 7 to 14 day intervals throughout the growing season.

11/22

Gray mold

Mix 0.5 to 2.0 gallons per 100 gallons of water and apply to one acre. For best control begin treatment at the end of bloom and repeat at 7 to 14 day intervals until 3 weeks before harvest.

HOP

Anthracnose, Cercospora leaf spot, Downy mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

LETTUCE, CHICORY, ENDIVE

Downy mildew, Septoria leaf spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

12/22

Powdery mildew

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

Bacterial soft rot and bottom rot

Mix 0.5 to 2.0 gallons in 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, of water and apply to one acre. Begin treatment before disease is expected or when weather conditions favor disease development. Repeat every 7 to 10 days as needed. Use lower rate when disease pressure is low or on copper sensitive varieties of iceberg head lettuce.

ONION, GARLIC, LEEK, SHALLOT, CHIVES

Botrytis leaf blight, Downy mildew, Neck rot and Bacterial soft rot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

PARSLEY

Leaf scorch, Leaf spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

PEANUTS

Sclerotinia blight

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. Make first application at first bloom and repeat every 7 to 14 days until harvest. Use higher rates of NEU1140F COPPER SOAP where Sclerotinia blight infection is expected to be heavy.

Leaf spots (early and late), web blotch

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. Begin spray when disease first appears, or for best control begin early, usually 25 to 40 days after emergence and repeat at 10 to 14 days until harvest.

POME FRUIT TREES (Apple, Pear, Quince)

Anthracnose

Use 0.5 to 2 gallons of NEU1140F COPPER SOAP per 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft. and apply to one acre. Apply in mid-July.

Cedar Apple Rust, Quince Rust,

Use 0.5 to 2 gallons of NEU1140F COPPER SOAP per 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Apply every 7 to 10 days from the pink bud stage until 30 days after petal fall. The disease can also be reduced by removing nearby eastern red cedar plants (*Juniperus virginiana* L.) On juniper, cedar apple rust can be controlled by spraying plants at least 4 times between late August and late October.

Fireblight

Use 0.5 to 2 gallons of NEU1140F COPPER SOAP per 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Spray at silver tip and bud break and repeat on 3 to 5 day intervals as needed, up to petal fall. Use the lower rate if disease pressure is light and higher rate when conditions favor heavy disease pressure. NOTICE: NEU1140F COPPER SOAP as used in this recommendation may cause russeting of Golden Delicious and similar susceptible apple varieties. Mild russeting of other varieties may occur. Preferred use is on non-bearing or processing varieties where russeting is not a concern.

14/22

Scab, Sooty Blotch and Flyspeck

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

SMALL FRUITS (Blackberry, Blueberry, Raspberry, Strawberry)

Gray mold, Mucor fruit rot, Rhizopus fruit rot

Use 0.5 to 2.0 gallons in 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Apply at the start of flowering and continue every 7 to 10 days until harvest.

STONE FRUIT TREES (Almond, Apricot, Cherry, Nectarine, Peach, Plum)

Bacterial canker (*Pseudomonas syringae*), brown rot blossom blight, leaf and fruit spots

Mix 0.5 to 2 gallons per 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. For bacterial canker, apply as a dormant spray as buds begin to swell, repeating at the bud burst stage, and weekly thereafter as needed, up to six sprays. In the fall spray again at 10 and 80% leaf fall. For brown rot blossom blight apply full cover spray at delayed dormant (bud swell), popcorn, full bloom and petal fall stages. During wet weather additional bloom sprays may be necessary.

Bacterial spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

15/22

Anthracnose, Coryneum blight, Peach Leaf Curl

Use 0.5 to 2.0 gallons in 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Apply as a dormant spray in late fall.

STRAWBERRY

Angular leaf spot, Leaf scorch, Mycosphaerella leaf spot, Phomopsis leaf blight, Powdery mildew, Septoria leaf spots

Use 0.5 to 2.0 gallons in 100 gallons of water and apply to one acre. Spray 1 month after planting (or before flowering on established plants) and twice more at 7 to 10 day intervals.

Anthracnose fruit rot, Gray mold

Use 0.5 to 2.0 gallons in 100 gallons of water and apply to one acre. Apply at the start of flowering and continue every 7 to 10 days until harvest.

TOBACCO

Blue Mold (Downy Mildew)

NEU1140F COPPER SOAP can be used on tobacco in transplant beds or on field grown plants. For transplant beds mix 0.5 to 2.0 gallons with 50 to 100 gallons of water and thoroughly spray all leaf surfaces. For field grown plants mix 0.5 to 2.0 gallons with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application.

TOMATO, POTATO, EGGPLANT, PEPPER

Anthracnose, Bacterial speck, Bacterial spot, Cercospora leaf spot, Early blight, Gray mold, Late blight, Leaf mold, Septoria leaf spot

Mix 0.5 to 2.0 gallons of NEU1140F COPPER SOAP with 50 to 100 gallons of water for application by ground equipment or with 2 to 5 gallons of water for application by aircraft, and apply to one acre. Use sufficient water to ensure good coverage. For best control, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Use the 2.0 gallon rate of

NEU1140F COPPER SOAP, applied every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application. Use 2.0 gallons NEU1140F COPPER SOAP in 50 to 100 gallons of water when spraying to control late blight.

WALNUTS

Blight

Mix 0.5 to 2.0 gallons per 100 gallons of water and apply at 500 gallons per acre in mature orchards. Make first application when leaflets start to unfold (prior to, but not later than, 1% pistulate bloom) and repeat weekly as needed, especially until seasonal rainfall stops. When rain threatens, additional applications are important, applied before or immediately after the rain.

- Directions for Use on Ornamentals and Turf

ORNAMENTAL PLANTS

The ornamental species listed below may be treated with NEU1140F COPPER SOAP. The diseases controlled have been designated with the following codes.

Code	Common name	Causal Pathogen
ANTH	Anthracnose	*Colletotrichum, Glomerella*
BOT	Botrytis blight	*Botrytis cinerea*
BLS	Bacterial leaf spot and blight	*Erwinia, Pseudomonas, Xathomonas*
DM	Downy mildew	*Plasmopara*
LEAFSPOT	Leaf spot (fungal)	*Acremonium, Alternaria, Cephalosporium. Cercospora, Colletotrichum, Corynespora. Curvularia, Dactylaria, Drechslera, Exserohilium, Glomerella, Myrothecium, Phyllosticta, Phytophthora*
PM	Powdery mildew	*Oidium*
RHIZC	Rhizoctonia blight	*Rhizoctonia*
SOFTROT	Soft rot	*Erwinia*

17/22

Ornamental Plant	Common Name	Diseases Controlled
Aechmea faciata	Urn plant, bromeliad	ANTH, BLS
Aeschynanthus pulcher	Lipstick vine	BOT, LEAFSPOT
Aglaonema species	Chinese evergreen	ANTH, BLS, LEAFSPOT, RHIZC, BLS, SOFTROT
Anthurium species	Tailflower	ANTH, BLS, LEAFSPOT, RHIZC, SOFTROT
Aphelandra squarrosa	Zebra plant	BOT, LEAFSPOT, RHIZC
Araucaria heterophylla	Norfolk Island pine	Colletotrichum needle blight
Asplenium nidus	Bird's nest fern	BLS
Brassaia actinophylla	Schefflera	ANTH, BLS, LEAFSPOT, RHIZC
Caladium species	Caladium	BLS, RHIZC
Calathea species	Rattlesnake plant	BLS, LEAFSPOT
Caryota mitis	Fishtail palm	BLS, LEAFSPOT
Chamaedorea species	various palms	LEAFSPOT
Chrysalidocarpus lutescens	Areca palm	LEAFSPOT
Cissus species	Grape ivy	ANTH, BOT, DM, PM, RHIZC
Codiaeum variegatum	Croton	ANTH, BLS
Cordyline terminalis	Ti plant	ANTH, LEAFSPOT
Chryptanthus species	Bromeliad, earthstar	ANTH
Dieffenbachia species	Dieffenbachia	BLS, LEAFSPOT, RHIZC
Dracaena species	Dracaena, Corn plant	BLS, BOT, LEAFSPOT

18/22

Ornamental Plant	Common Name	Diseases Controlled
Epipremnum aureum	Pothos, Devil's ivy	BLS, RHIZC
Euphorbia milii	Euphorbia	RHIZC
Fatsia japonica	Japanese fatsia	BLS, LEAFSPOT, RHIZC
Ficus benjamina	Weeping fig	LEAFSPOT
Ficus elastica	India-rubber tree	LEAFSPOT, BOT
Fittonia verschaffeltii	Nerve plant	RHIZC
Hedra helix	English ivy	ANTH, BLS, BOT, LEAFSPOT, RHIZC
Hoya carnosa	Wax plant	BOT, LEAFSPOT, RHIZC
Maranta leuconeura	Prayer plant	LEAFSPOT
Monstera deliciosa	Swiss cheese plant	BLS, ANTH, RHIZC, SOFTROT
Nephrolepis exaltata	Boston fern	BSL, BOT, RHIZC
Peperomia species	Peperomia	LEAFSPOT, RHIZC
Philodendron species	Philodendron	ANTH, BOT, LEAFSPOT
Pilea species	Aluminum plant	BLS, ANTH, LEAFSPOT, RHIZC
Platycerium bifurcatum	Staghorn fern	BLS, RHIZC
Polyscias species	Aralia	ANTH, BLS, LEAFSPOT
Rhapis species	Ladyfinger palm	LEAFSPOT
Rhoeo spathacea	Oyster plant	LEAFSPOT
Saintpaulia ionantha	African violet	BLS, BOT, LEAFSPOT, PM
Sansevieria triafasciata	Snake plant	BLS, LEAFSPOT
Schefflera arboricola	Dwarf Schefflera	BLS, LEAFSPOT
Schlumbergera species	cactus	LEAFSPOT
Sedum species	Sedum	LEAFSPOT
Spathiphyllum species	Spathe flower	LEAFSPOT, RHIZC
Syngonium podophyllium	Nephthytis	BLS, LEAFSPOT, RHIZC
Yucca species	yucca	LEAFSPOT

NEU1140F COPPER SOAP can be used for controlling diseases on ornamentals grown under field conditions, in nursuries, greenhouses, interior landscapes and other sites. For control of these diseases on plants grown on a large scale, mix 0.5 to 2.0 gallons in 100 gallons of water, and apply to 1 acre. For plants grown on a small scale, mix 0.5 to 2.0 fluid ounces in 1 gallon of water, and spray all plant surfaces thoroughly. When necessary, repeat sprays every 7 to 10 days. NEU1140F COPPER SOAP may cause some copper toxicity on some plant species. Before spraying a specific plant species, consult your State Experiment Station or make a test spray.

PINE

Needle blight

Mix 0.5 to 2.0 gallons in 100 gallons of water and spray until needles are thoroughly wet with spray. Apply when new needles are just emerging. Make a second application 3 weeks later.

ROSE AND ORNAMENTAL SHRUBS

Blackspot, Ddowny mildew, Gray mold, Leafspots, Powdery mildew, Rust

Mix 0.5 to 1.0 gallons NEU1140F COPPER SOAP in 100 gallons of water andd spray to point of run-off. Begin treatment when new spring growth emerges and repeat every 7 to 10 days for as long as needed to control disease. NEU 1140F COPPER SOAP may cause copper toxicity on some rose varieties. Copper toxicity appears as purple spots.

SYCAMORE

Anthracnose

Mix 0.5 to 2.0 gallons in 100 gallons off water. Make first application just before buds begin to swell, and repeat twice at 7 day intervals.

TURF

NEU1140F COPPER SOAP is suitable for controlling diseases of turf in golf courses, turf farms, home lawns and other sites. For large areas, mix 0.5 to 2.0 gallons in 100 gallons of water and apply to 1 acre. For small areas mix 1.5 to 6 fluid ounces with 2.5 gallons of water and apply to 1000 ft^2. For best control, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed.

Ascochyta leaf blight, Cercospora leaf spots, Dollar spot

To reduce Ascochyta leaf blight mow less frequently, only as necessary to maintain recommended height. Water before noon to allow grass to dry. Water thoroughly only as required to avoid moisture stress. Apply NEU1140F COPPER SOAP when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. In frequently diseased areas, prune adjacent trees and shrubs to reduce turf shading and to improve air movement.

Rust

To reduce rust mow frequently to reduce rust spore production. Water and fertilize lawn as required to avoid moisture and nutrient stress. Water before

20/22

noon to allow grass to dry. Apply NEU1140F COPPER SOAP when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. In frequently diseased areas, prune adjacent trees and shrubs to reduce turf shading and to improve air movement.

DIRECTIONS FOR USE - HOUSEHOLD

Fixed copper is one of the oldest fungicides and bactericides, used to control a wide range of plant diseases. NEU1140F COPPER SOAP is a patented. fixed copper fungicide, made by combining a soluble copper fertilizer with a naturally-occurring fatty acid. The copper and the fatty acid combine to form a copper salt of the fatty acid, known technically as a true soap. The copper soap fungicide controls many common diseases using low concentrations of copper, down as low as 90 ppm. The net result is an excellent vegetable, fruit and ornamental fungicide. NEU1140F COPPER SOAP decomposes to form soluble copper. and fatty acid, both of which can be used by microbes and plants. NEU1140F COPPER SOAP is suited for use in domestic circumstances, both indoors and outdoors. The National Organic Standards Board of the USA allows fixed copper to be used in organic crop production for controlling plant diseases.

NEU1140F COPPER SOAP controls diseases of a wide range of plants. including many vegetables, fruit and ornamentals. As with most fungicides. NEU1140F COPPER SOAP acts to protect plants from infection. Therefore. it is important to have NEU1140F COPPER SOAP on the leaf, flower or fruit before the pathogen is able to cause an infection.

A wide range of bacteria and fungi attack plants, however, they generally only cause a few types of diseases. When using NEU1140F COPPER SOAP. it is important to identify the type of disease in order to use the best method of disease control.

Powdery mildews tend to occur on the upper leaf surfaces. as though a white powder was sprinkled onto the plant. Powdery mildews can form a dense, white. cottony mass, making the whole leaf appear white. They are also commonly found on stems. Powdery mildews rarely kill plants. Most fungal diseases require water to infect plants. Powdery mildews are unique in that they do not require water for infection. Hence, under greenhouse conditions, powdery mildews can become severe. Shade and dense plantings also promote powdery mildew. Powdery mildews commonly occur on the following plants: apple, bean. beet. broccoli, brussel sprouts, cauliflower, cabbage, cantaloupe, chard, chicory. chive. cucumber, currant, endive, gooseberry, grape, grasses, hop, kale. kohlrabi. lettuce. lilac. oak, pea, pumpkin, rose, rutabaga, spinach, squash. strawberry. turnip, zucchini and many other plant species.

Downy mildews tend to occur on the lower leaf surfaces. Downy mildews are much finer than powdery mildews, and appear as fine white cotton. similar to duck down. Downy mildews can rapidly kill plant leaves during wet. cool

21/22

weather. but are inhibited by hot dry weather. Downy mildews commonly occur on the following plants: bean, beet, broccoli, brussel sprouts, cauliflower, cabbage, cantaloupe, chard, chicory, chive, corn, cucumber, endive, garlic, grape, grasses, hop, kale, kohlrabi, leek, lettuce, onion, pea, pumpkin, rutabaga, shallot, spinach. squash, sunflower, tobacco, turnip, zucchini and many other plant species,

Leaf and fruit spots are small brown or black spots on the leaf or fruit. They commonly occur on apple and pear (scab), as well as on most of the plants grown around the home and in the garden. These spots can be caused by a range of fungi and bacteria. Leaf and fruit spots are commonly caused by fungi belonging to the following genera: *Alternaria, Cercospora, Colletotrichum, Cylindrosproium, Gloeosporium, Glomerella, Gnomonia, Marssonia, Mycosphaerella (Didymella), Phomopsis, Phyllosticta, Septoria,* and *Sphaceloma.* Spots on leaves and fruit can expand and grow together. Leaf spot pathogens require water to infect plants. During wet weather, spots can develop into a **blight**, very rapidly, killing leaves, flowers and stems.

Rusts are small orange blisters that appear on plant leaves, and that are full of orange powder. The orange powder is rust spores. Towards the end of the season. black spores are often produced. Rust is commonly found on grasses. currants and many other types of plants.

Fruit rots commonly occur on strawberries, raspberries, and other fruit. They appear as soft. rotten areas on the fruit. Often the causal fungus can be seen growing and producing spores on the surface of the rotting area. Rots are often caused by fungi belonging to the following genera: *Aspergillus, Botrytis. Monilinia. Mucor. Penicillium, Rhizopus* and *Sclerotinia.*

Application Directions

Most conventional liquid pesticide plant sprayers can be used to apply NEU1140F COPPER SOAP to plants. A spreader may be used to improve the spreading of NEU1140F COPPER SOAP on hard to wet plants.

To control **powdery mildews**, use a solution of 1 fluid ounce of NEU1140F COPPER SOAP in a gallon of water. For best control, start spraying before the disease is visible or when mildew is first visible on the plant. Spray all plant parts thoroughly, and repeat every 7 to 10 days. On plants that are very susceptible to powdery mildew, such as greenhouse-grown cucumber, it is best to spray the plants twice a week during the first 2 weeks after emergence, and weekly thereafter. On outdoor plants, re-apply after rain.

To control **downy mildews, leaf and fruit spots, blights, and rust,** use a solution of 1 fluid ounce of NEU1140F COPPER SOAP in a gallon of water. Ensure that all surfaces of the plant are thoroughly sprayed. For best control. begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment

when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Re-apply after rain. Use 2 fluid ounces per gallon of water, sprayed every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly. This higher rate should be used for preventing late blight on potato and related plants. If possible, time applications so that at least 12 hours of dry weather follows application.

To prevent **fruit rots**, use a solution of 1 fluid ounce of NEU1140F COPPER SOAP in a gallon of water. Ensure that all surfaces of the plant are thoroughly sprayed. Apply at the start of flowering and continue every 7 to 10 days until harvest. Fungicidal sprays are especially warranted when weather forecasts predict a long period of wet weather. Re-apply after rain.

Cultural Method to Assist in Reducing Plant Disease

Several common sense techniques can also be used to reduce plant disease. These include:

- Inspect the plants often for signs of disease or insect pests. Take appropriate measures when warranted.
- Promote healthy plant growth, but do not over fertilize.
- Do not grow the same types of plants in the same location in successive years.
- Control weed species around the garden that are related to the plant species that you are growing. Weeds are a source of plant pathogens.
- Space plants to ensure good airflow and drying after rain. Also, water plants in the morning to minimize the time that the plants are wet. Wet leaves, flowers and fruit promote infections by plant pathogens.
- Prune plants during dry weather to avoid wound infections.
- At the end of the growing season remove and compost all garden refuse. Garden refuse can act as a source of plant pathogens.

NOTICE TO BUYER

Seller warrants that this product conforms to the chemical description on this label and is reasonably fit for purposes stated on this label only when used in accordance with directions under normal use conditions. This warranty does not extend to use of this product contrary to label directions, or under abnormal use conditions, or under conditions not reasonably foreseeable to seller. Buyer assumes all risk of any such use. Seller makes no other warranties, either expressed or implied.

Registrant: W. Neudorff GmbH KG, Postfach 1209, An der Mühle 3, D-31860 Emmerthal, Germany

US Patent Number: 5,246,716