

MAR 23 1990

R.D. & Associates
P.O. Box 1616
Pomona, CA 91768

Attention: Richard McCorkle
CEO

Gentlemen:

Subject: S.N.-20 Disinfectant For Ornamental Horticulture
EPA Registration No. 53642-2
Your Submission Dated July 28, 1989


The amendment referred to above, submitted in connection with registration under FIFRA, is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
 - a. The Headings "Active Ingredient & Inert Ingredients must be same type size and be given equal prominence.
 - b. Note that the word "dimethyl" was missing from the second active ingredient.
2. Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

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

Any questions concerning this letter contact V. Goncarovs at
703-557-3663.

Sincerely yours,

John H. Lee 
Product Manager (31)
Antimicrobial Program Branch
Registration Division (H7505C)

Front Panel

S.N.-20 DISINFECTANT

FOR ORNAMENTAL HORTICULTURE

For Use Against Fungal, Bacterial, Algal
and Viral Plant Pathogens and Their Odors



S.N.-20 IS AN OVICIDE,
LARVICIDE, PUPACIDE FOR
CONTROL OF Aedes Aegypti
(Yellow Fever), Anopheles
quadrimaculatus (Malaria),
AND Culex nigripalpus
(Heart Worm and Hepatitis)
MOSQUITOS.

- STABLE - MIXES READILY WITH WATER
- DOES NOT SEPARATE - A GOOD WETTING AGENT
- LEAVES NO RESIDUAL MARKS ON FOLIAGE

S.N.-20 IS A CONCENTRATE AND MUST BE DILUTED
BEFORE USING.

NET 1 QUART

R.D. & ASSOCIATES
P.O. BOX 1616
POMONA, CA 91768

ACTIVE INGREDIENTS:

n-Alkyl (80% C ₁₂ , 30% C ₁₀ , 5% C ₈ , 5% C ₆)	
dimethyl benzyl ammonium chloride	10%
n-Alkyl (68% C ₁₂ , 32% C ₁₀) dimethyl	
ethylbenzyl ammonium chloride	10%
Inert ingredients	80%
	100%

EPA Reg. No. 53642-2

EPA Est. No. 53642-CA-1

KEEP OUT OF REACH OF CHILDREN

PATENT PENDING

DANGER

SEE SIDE PANEL FOR ADDITIONAL
PRECAUTIONARY STATEMENTS

ACCEPTED
WITH RESERVATIONS
EPA

MAR 23 1990

53642-2

1/2

DIRECTIONS FOR USE

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

S.N.-20 LARVICIDE, LARVACIDE, PUPACIDE FOR MOSQUITO CONTROL

For mosquito control in fountains, water displays, decorative pools, decorative ponds and standing water (in such places as old tires, empty tin cans, lawns, puddles).

Spray from fountains treated with S.N.-20 will not harm pool-side plantings.

~~DO NOT USE~~ DO NOT USE when fish are present.

S.N.-20 controls mosquitos where they breed (See above for sites).

S.N.-20 when used as directed is effective in controlling *Aedes aegypti* (Yellow Fever carrier), and *Culex nigripalpus* (carrier of various diseases of man and beast) mosquitos. This product will also reduce larval populations of Malaria carriers (*Anopheles quadrimaculatus*).

APPLICATION RATES FOR MOSQUITO CONTROL:

INITIAL DOSAGE:

S.N.-20 Concentrate		per	Unit water for 200 ppm*	
Metric	U.S.		Metric	U.S.
3.80 cc	.13 oz.		3.7853 liters	1 gallons
32.00 cc	1.28 oz.		37.8530 liters	10 gallons
380.00 cc	12.80 oz.		378.5300 liters	100 gallons
3,785.00 cc	1.00 Gal.		3.753 K	1,000 gallons

* ppm = parts per million

Treat water by 'dribbling' S.N.-20 solution (1 part S.N.-20 added to 3, parts water*) around the edges of the site to be treated (decorative ponds)

Where a spray rig is available - it may be used to apply the use solution - instead of the hand 'dribbling' method.

WEEKLY MAINTENANCE:

S.N.-20 Concentrate		per	Unit water for 100 ppm*	
Metric	U.S.		Metric	U.S.
1.90 cc	.065 oz.		3.7853 liters	1 gallon
19.00 cc	.64 oz.		37.8530 liters	10 gallons
190.00 cc	6.4 oz.		378.5300 liters	100 gallons
1,892.50 cc	64 oz.		3.7853 K	1,000 gallons

* ppm = parts per million

Each week repeat maintenance dosage. Or, add S.N.-20 using a test kit to maintain the proper concentration

ACCEPTED
with COMMENTS
in 1990

MAR 23 1990

Unit
Fug
as per
received

53642-2

5
12

Left Panel

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC
ANIMALS**

DANGER

Corrosive. Harmful or fatal if swallowed. Causes severe eye and skin damage. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Avoid contamination of food. Remove and wash contaminated clothing.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Drink egg white, gelatin solution or, if these are not available, drink large quantities of water. Call a physician.

IF ON SKIN: Flush skin with plenty of water for at least 15 minutes.

IF IN EYES: Flush eye with plenty of water for 15 minutes and call a physician.

IF ON CLOTHING: Remove and wash all contaminated clothing before reuse.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is Prohibited. Do Not Reuse Empty Container.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, 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.

ACCEPTED
with COMMENTS
in EPA List of Pesticides

MAR 23 1990

Unit
Fur
as
register

53642-2

Right Panel

Directions For Use

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

S.N.-20 is a general disinfectant for use on floral ornaments. It will help to control fungal, bacterial and viral pathogens, bacterial and fungal leaf rots, slime forming fungi, odor-causing bacteria and algae.

S.N.-20 has been designed specifically for greenhouse and home use where cross contamination may occur between plants. Preclean all surfaces prior to application of disinfectant solution. All inanimate surfaces must be thoroughly wetted and remain wet for 10 minutes for disinfection. Fresh solution should be prepared daily and when use solution becomes visibly dirty.

Work Area and Benches:

Spray or swab working surfaces before each work period. Again after each plant is completed, to help control transfer of such diseases as root rot, crown rot, botrytis, downy mildew, etc. USE: 1 Tbsp S.N.-20 concentrate to 1 gallon water.

Pots, Flats and Flower Buckets

Used pots and flats should be brushed or washed, then soak in S.N.-20 solution for 10 minutes before using to help control transfer of such diseases as root and crown rots, anthracnose, mildew, rusts and blight. USE: 1 Tbsp. S.N.-20 per gallon water.

Disinfecting Cutting Tools

Soak cutting edge of tool for 10 minutes in S.N.-20 solution before use to help control transfer of such diseases as stem and root rots, Tobacco Mosaic Virus (TMV) and botrytis. Use wet tool on plants. At end of work, dry and oil tools. USE: 1 tsp. S.N.-20 concentrate per quart of water.

ALGAE - Greenhouse Glass

Spray or swab surfaces with SN-20. Allow to air dry. Wash off dead algae with water. Spray clean surfaces again with S.N.-20 solution. USE: 1 tsp. S.N.-20 concentrate per gallon water.

ACCEPTED
with COMMENTS
In EPA Letter Dated:

MAR 23 1990

BEST AVAILABLE COPY

Under the Toxic Substances Control Act
EPA has determined that this product is
not a significant new chemical entity
registered with EPA Reg. No.

53642-2

ALGAE - Walkways

For heavy infestation, spray or swab. Let stand for an hour or more. Brush and wash away dead algae. Soak area again with S.N.-20 solution. Do not rinse. This product will inhibit the growth of algae on walkways. Allow to dry on surface and repeat application when algae growth returns. USE: 1 Tbsp. S.N.-20 concentrate to 1 gallon water.

ALGAE Control for "Bird Baths" DO NOT USE WITH FISH

Clean to remove algae growth prior to filling bird bath by spraying all exposed surfaces with S.N.-20 solution. Allow to air dry, brush off dead algae. USE: 1 oz. S.N.-20 concentrate to 2 gallons of water for cleaning.

MILDEWSTAT - Table Tops, Floors

To control mold and mildew on pre-cleaned hard, non-porous surfaces, (such as floors, walls, tabletops). Apply solution with a cloth, mop, or sponge making sure to wet all surfaces completely. Let air dry. Prepare a fresh solution for each use. Repeat application at weekly intervals or when mildew growth reappears. USE: 1 1/2 ounces of S.N.-20 concentrate to 1 gallon of water.

Seedlings - DAMPING OFF

To reduce damping off problems: Treat seeds and cuttings before planting with S.N.-20 solution. Use an inert material for planting seeds and cuttings, such as, sphagnum moss, vermiculite, perlite, pumice, sterilized commercial mix rather than garden soil. If garden soil must be used, drench with S.N.-20 solution.

After planting, water with S.N.-20 solution (unless you are using garden soil and have already drenched potting soil with S.N.-20 solution.) and again after seedlings emerge. Spray, mist, or fog weekly as needed.

An S.N.-20 solution is effective in stopping the spread of damping off when sprayed on seedlings. USE: 1 oz. S.N.-20 concentrate to 3 gallons of water, or 2 tsp. S.N.-20 concentrate per gallon water.

Seedlings - DOWNY MILDEW

Most common on seedlings. The fungus sporulates on the lower surface of leaves as a white, sparse downy growth. The disease can cause the death of aerial plant parts. Spray with S.N.-20 solution at 5 day intervals until under control. USE: 1 ounce of S.N.-20 concentrate to 3 gallons of water

ACCEPTED
with COMMENTS
in EPA Letter Dated

MAR 23 1990

53642-2

BEST AVAILABLE COPY

8/12

Plant Cuttings

Begonia, Fuchsia, Geranium, Chrysanthemum, for controlling powdery mildew, crown gall, gray mold leaf spots, Soak cuttings 2-5 minutes in S.N.-20 solution. USE: 1 tsp. S.N.-20 concentrate per gallon water.

Plant in compost drenched in S.N.-20 solution. USE: 2 tsp S.N.-20 concentrate per gallon water.

Narcissus, Gladiolus, Iris, Easter Lilies, Tulips, Daffodil, Hyacinth - BULBS

Prestorage and Preplanting Treatments:

Treat the corms immediately after they are "cleaned" and treat again immediately before planting, by soaking them 10 minutes in a S.N.-20 solution to control fusarium basal rot. Air dry. USE: 1 Tbsp. S.N.-20 concentrate to 1 gallon water

Iris - LEAF SPOTS

Circular spots, yellowish, then light brown with red border. Spray weekly while leaves are growing.

Iris - BOTRYTIS CROWN ROT OF IRIS; GRAY MOLD ROT, ON RHIZOMATOUS IRIS

Treat all new rhizomes before planting with S.N.-20 solution. Submerge rhizomes and 3 to 4 inches of leaves for 30 minutes, plant at once (while still wet with S.N.-20 solution) USE: 1 oz. of S.N.-20 concentrate to 3 gallons of water.

Roses - MILDEW (POWDERY MILDEW), RUSTS, BLACK SPOT, STEEM GALL

Spray with S.N.-20 solution when symptoms appear. Spray up per and lower surface of leaves and branches with S.N.-20 solution until thoroughly wet. Spray with S.N.-20 solution several times, 7 to 10 days apart. USE: 2 tsp. of S.N.-20 concentrate per gallon of water.

Roses - BROWN CANCKER

Use regular spraying. Application should begin in the early Spring as soon as new growth starts and should be made often enough to provide protection throughout the rainy periods and to keep the new growth covered. On the average, an application once a week will be needed from early Spring until plants are dormant. USE: 2 Tsp. of S.N.-20 concentrate to 1 gallon of water.

ACCEPTED
with COMMENTS
in EPA Letter Dated:
MAR 23 1990
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
Registration No. 53642-2

BEST AVAILABLE COPY

Calendulas, China Asters,
Lilac, Grape Myrtle, Live Oak,
Chrysanthemums, Snapdragons, Dahlias, etc. - POWDERY MILDEW

Spray with S.N.-20 solution when symptoms appear. Spray upper and lower surface of leaves and branches with S.N.-20 solution until thoroughly wet. Spray when buds burst in Spring and repeat in 2 weeks later. Spray with S.N.-20 solution every two weeks during mildew season. Also spray Live Oaks at bud break and again in April. USE: 1 ounce S.N.-20 concentrate to 3 gallons of water.

Cactus - ROOT ROT, BACTERIAL LEAF SPOT, TOP ROT

Rotting of underground parts by fungi and bacterial leaf spot or rot of the tops.

Sterilize seeds and disease free cuttings by dipping in S.N.-20 solution for 5 minutes before planting. Spray at 10-14 day intervals. USE: 1 oz. of S.N.-20 concentrate to 3 gallons of water

Cactus - SLIMY COLLAR ROT

Just before planting, dip entire plant in S.N.-20 solution. USE: 2 tsp. S.N.-20 concentrate to 1 gallon water.

Saintpaulias (African Violets) - GRAY MOLD ROT (botrytis)
BUD ROT, MILDEW, ROOT ROT and CROWN ROT.

Dip plant and pot in S.N.-20 solution. Spraying is okay, but complete coverage of all surfaces is important. Spray every 10 days until controlled. USE: 1 Tbsp. of S.N.-20 concentrate per 4 gallons of water

Aucuba, Dahlia, Pieris, Geranium, Fuchsia,
Peony and Gladiolus - BOTRYTIS, GRAY
MOLD, DOWNY MILDEW

Primarily affects new growth with symptoms of soft decay of flowers, leaves, or stems, followed by a covering of downy gray mold. Control of disease consists of quick removal of dead plant parts and application of S.N.-20 at the first signs of the disease. For Rust, apply at 7 to 14 day intervals during wet periods starting in early Summer. For Botrytis, spray buds and blooms lightly 2 to 3 times a week using a fine mist. Before shipping, dip spikes in S.N.-20 solution. USE: 2 Tsp. of S.N.-20 concentrate to 1 gallons of water

ACCEPTED
with COMMENTS
in EPA Letter Dated:
MAR 23 1990
53642-2

BEST AVAILABLE COPY

Ferns, Begonias and Gesneria (Corytholoma, Isoloma, Al-
toplectus, episcia, trichospoum)

- LEAF SPOTS, GRAY MOLD BUD ROT, and SHOOT ROT.

All phases of culture. Remove all plant refuse, or dead leaves, garden clean-up is important in control. Spray S.N.-20 solution before buds open. Then spray when blossoms show pink and again when 3/4 of blossom petals have fallen. Spray again two weeks after pedal fall. USE: 1 tsp. of S.N.-20 per gallon of water.

Fuchsia, Gardenia, Geranium Heliotrope - GRAY MOLD BUD ROT
and STEM ROT

At the first sign of disease, pick off and burn infected leaves and blossoms spray, mist or fog weekly as needed. USE: 2 Tsp of S.N.-20 concentrate to 1 gallons of water.

Kalanchoe, Crassula and Sedum - ROOT and CROWN ROTS, CROWN GALL.

Destroy infected plants, or plant parts and drench the remainder with S.N.-20 solution
Spray plants weakly to assure solution getting around and in base of leaves. USE: 2 Tsp. of S.N.-20 concentrate to 1 gallons of water.

Rubber Plant - ANTHRACNOSE on leaves and stems, CROWN GALL on stems.

At the first sign of disease, pick off and burn infected leaves, spray, mist or fog weekly with S.N.-20 solution as needed. USE: 1 Tsp. of S.N.-20 concentrate to 1 gallon of water.

Hawthorn, Hollyhock, Snapdragons - RUSTS

Spraying for protection should begin with the development of new leaves following Winter cleanup, or dormancy. Spraying should begin before the onset of the raining season. Be sure the under sides of infected leaves are covered by S.N.-20 spray solution.

For Hollyhocks, apply at weekly intervals. Start as soon as growth begins. Repeat applications in late Summer.

For Snapdragons collect and burn the tops in the Fall. Indoors avoid sprinkling the foliage when watering. Apply S.N.-20 solution at 7-10 day intervals. Start when plants are set in the garden.

ACCEPTED
with COMMENTS
in EPA Letter Dated:

MAR 23 1990

53642-2

BEST AVAILABLE COPY

USE: 2 Tsp. of S.N.-20 concentrate per gallons of water.
Flowering Dogwood (cornus florida) - LEAF SPOTS LEAF
BLIGHTS, ANTHRACNOSE

Small circular, dirty yellow spots with reddish purple margins on flowers, leaves and young shoots. Spray 4 times: When flower buds begin to open, as soon as flower bracts have fallen, 4 weeks later, and in late Summer after flower buds are well formed. If possible, spray just before rainy periods. USE: 1 oz. of S.N.-20 concentrate to 3 gallons of water.

Hawthorn (crataegus) - LEAF BLIGHTS

After a very wet Spring, small reddish brown spots appear on upper surface of leaves. When spots are numerous, leaves drop. Make 3 spray applications: First as soon as leaves emerge from buds; then when leaves are half grown; and again when fully grown. USE: 1 oz. of S.N.-20 concentrate to 3 gallons of water.

Snapdragons - PHYLLOSTICTA BLIGHT, ANTHRACNOSE, POWDERY MILDEW, DOWNY MILDEW, STEM ROT RUSTS and WILTS.

Spray with S.N.-20 solution when symptoms appear. Spray upper and lower sides of leaves until thoroughly wet, every 7 to 10 days. Collect and burn the tops in Fall. USE: 2 tsp S.N.-20 concentrate per gallon water.

Carnations - LEAF SPOT, CARNATION RUST, GRAY MOLD ROT, ROT, CANKER ROT, CROWN ROT and ROOT ROTS

For RUST, dip cuttings in S.N.-20 solution before planting. For GRAY MOLD, apply S.N.-20 solution one to two times just before bud bloom. Apply a light mist spray as the flowers are opening. Carefully collect and burn infected buds, blossoms and stems. USE: 2 Tsp. of S.N.-20 concentrate per gallons of water

House Plants

To control algae and cross contamination in Terrariums, bubbles, etc. Wipe inside of glass with paper towel dampened with S.N.-20 solution. Lightly mist plants with S.N.-20 solution.

ACCEPTED
with COMMENTS
in EPA Letter Dated:

MAR 23 1990

53642-2

BEST AVAILABLE COPY

USE: 1/4 tsp. (scant) per quart of water.

Cut Flowers - BACTERIAL STEM PLUGGING

Containers - Tubes - and Decorative Vases

To eliminate stem plugging, which restricts uptake of water and controls bacteria and fungi which create ethylene gas, a causes of petal drop. Flower spikes should be hardened in S.N.-20 solution during harvesting, storage and shipping. Treatment with S.N.-20 solution will also help control transfer of diseases, such as Botrytis Petal Blight and Erwinia. USE: 1 tsp. to 1 gallon water.

Lawn - Grass - Dichondra - For Control of Certain Fungal Diseases and RUSTS

1 pint of concentrate diluted treats 6,400 sq. ft.

Control the following fungal disease (Sclerotium rolfsii, Fading-Out, Dollar Spot, Rust, Leaf Spot, Fairy Ring, Toad Stools), and Algae. Spray with S.N.-20 solution at rate of 5 gallons solution per 1,000 sq. ft. of turf. Be sure all surfaces of grass are treated, and area is thoroughly soaked with solution. When it appears, repeat USE: 1 Tbsp. S.N.-20 to 1 gallon water.

Trees (Sycamore, Ash, etc.) - ANTHRACNOSE

Spray upper and under side of leaves and twigs until thoroughly wet. A large tree requires 50-60 gallons of spray per treatment for adequate coverage. Treat tree with three applications: As buds start to swell in Spring; As leaves start to expand; and, As leaves are about 3/4 grown. USE: 1 oz. S.N.-20 to 3 gallons water.

Palms - HEART ROT and PENICILLIUM LEAF BASE ROT

At the first sign of rot, completely fills cup, or "Heart" formed by palm branches at top center of plant. Repeat every 7 days until controlled. USE: 1 oz. S.N.-20 concentrate to 3 gallons water.

Overhead Watering Systems

During last 2-3 minutes of watering use S.N.-20 solution as a control program. Due to variations of growing conditions, use S.N.-20 solution every second to fourth watering. Will control algae in nozzles. USE: 1 oz. S.N.-20 concentrate to 20 gallons water.

Evaporative Coolers - ALGAE, FUNGUS, ODORS

Controls algae, slime forming fungi on cooler pads and certain fungal plant pathogens that may carry over in the cooler, as well as bacterial odors. USE: 1 tsp. S.N.-20 per 15 gal. water every other week.

BEST AVAILABLE COPY

ACCEPTED
with COMMENTS
in EPA Letter Dated
MAR 23 1990
53642-2