



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Paul Kittelson  
EH&S Manager  
Qualis Inc.  
4600 Park Ave.  
Des Moines, Iowa 50321

MAR 5 2004

Subject: DIONNE Copper Sulfate Root Killer - Master Label  
EPA Reg. No. 34797-39  
Your amendment dated September 29, 2003

Dear Mr. Kittelson:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable provided the following changes are made:

1. Add the following sentences to the front panel: "Controls root growth in sewer pipes. Controls algae in impounded waters, lakes and ponds."
2. In the First Aid block, the routes of exposure must be listed in order of decreasing acute toxicity category. List the routes of exposure in the following order:
  - If in eyes
  - If on skin or clothing
  - If inhaled
  - If swallowed
3. Add the company name, address and phone number to the front panel
4. Different storage and disposal instructions are required depending on whether or not the product is being marketed for homeowner use.

**For non-homeowner use**, in the Storage and Disposal instructions, move the sentence "Do not contaminate water, food or feed by storage or disposal" to immediately below the header "Storage and Disposal". Then replace the storage and disposal instructions with a section having the following components in accord with the Pesticide Review Manual:

Pesticide Storage  
Pesticide Disposal  
Container Disposal

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**For homeowner use**, in the Storage and Disposal instructions, move the sentence "Do not contaminate water, food or feed by storage or disposal" to immediately below the header "Storage and Disposal". Then replace the pesticide and container disposal instructions with the following:

**PESTICIDE STORAGE:** *(Include appropriate storage instructions)*

**PESTICIDE DISPOSAL:**

**If empty:** Do not reuse this container. Place in trash or offer for recycling if available.

**If partly filled:** Call your local solid waste agency *[or toll free number]* for disposal instructions. Never place unused product down any indoor or outdoor drain except as specified by these label instructions.

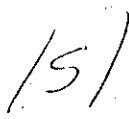
- 5. Any sub-label for use as an algaecide must include a list of ingredients, first aid section, name and address of manufacturer, and all of the other information required on a label.

Alternatively, a single label can be prepared covering both the root killer and algaecide uses. This label must include all use information. The description on the front panel would read "Controls root growth in sewer pipes and algae growth in lakes, ponds or resevoirs."

Please submit one copy of each final printed sublabel that incorporates the required changes before the product is released for shipment.

If you have any questions, please contact Robert Westin by phone at (703) 305-5721 or via email at [westin.robert@epa.gov](mailto:westin.robert@epa.gov).

Sincerely,



Cynthia Giles-Parker  
Product Manager (22)  
Fungicide Branch  
Registration Division (7505C)

Enclosure

Product Name: Dionne Copper Sulfate Root Killer

Generic label layout:



(Front Panel)

DIONNE Copper Sulfate Root Killer  
Controls root growth in Sewer Pipes

**KEEP OUT OF REACH OF CHILDREN  
DANGER**

**ACTIVE INGREDIENT:**

Copper Sulfate (Pentahydrate)\* ..... 99%

**INERT INGREDIENTS:** ..... 1%

\*Metallic Copper Equivalent 25.2%

See Insert for specific/additional use directions

See side panel for use, directions and additional precautionary statements

EPA Reg. No 34797-39

EPA Est. No. 3497-IA-02

NET Weight XX LBS (XX Kg)

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

MAR 5 2004

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

34797-39

Product Name: Dionne Copper Sulfate Root Killer

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(Left Panel)

### Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **To open:** Place coin in groove, pry and lift lid off. **To close:** Place lid on container – press edges down, snapping lid on. **Residential or Household Sewer Systems:** In household sewers, use 2 pounds of Dionne Copper Sulfate Root Killer twice yearly. To add Root Killer to sewer line, pour about ½ pound into the toilet bowl nearest to sewer line and flush, repeating process until the recommended dose has been added; or remove cleanout plug and pour entire recommended quantity directly into the sewer line, replacing plug and flush toilet several times. **Note:** Do not apply Root Killer through sink or tub drains as it will corrode these metal drains. If system is equipped with a septic tank, Root Killer will precipitate in the septic tank and little will pass into the absorption drain field. To treat drain field pipes, add 2 pounds of Root Killer to distribution box located between the septic tank and the drain field. If distribution box does not have an opening, it would be advisable to install a cleanout plug opening into the outlet pipe from the septic tank leading to the drain field for effective root control in the drain field pipes.

### Storage and Disposal

**Storage:** Store product in a secure, dry place. Keep product dry, as product is water-soluble. When opening, closing, or handling open packages or pouring product, wear goggles to prevent dusting into eyes. Spilled product should be swept up, used if clean, or disposed of in accord with the disposal procedures below. Store product only in original container. During storage, store pesticide separately to prevent cross-contamination of other pesticides, fertilizers, food and feed.

**Disposal:** Do not contaminate water, food, or feed by storage or disposal. Do not re-use empty container. Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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.

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(Right Panel)

**Precautionary Statements**  
**Hazard to Humans & Domestic Animals**

**DANGER:** Causes severe eye and skin irritation. Harmful if absorbed through the skin or inhaled. May cause skin sensitization reactions in certain individuals. Avoid contact with the skin, eyes, or clothing. Avoid breathing dust. Protective clothing, including goggles, should be worn. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

**Environmental Hazard Statements**

This pesticide is toxic to fish. Direct application of copper sulfate to water may cause a significant reduction in population of aquatic invertebrates, plant, and fish.

<b>First Aid</b>	
If on skin or clothing:	Take off contaminated clothing. Rinse immediately with plenty of water for 15 – 20 minutes. Call a poison control center or doctor for treatment advice.
If inhaled:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth.
If in eyes:	Hold eyes open and rinse slowly and gently with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue to rinse eyes. Call a poison control center or doctor for treatment advice.
If swallowed:	Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes:	Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Distributed by:

6/7

Proposed Product Insert Copy

Product Name: Dionne Copper Sulfate Root Killer

(Front Panel)

**DIONNE Copper Sulfate Root Killer** for:

- Algae control in impounded waters, lakes, ponds, and reservoirs
- Algae control in irrigation conveyance systems using the slug application method

**Directions for Use**

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

**General Directions for Use**

Copper sulfate effectively control many species of both filamentous (mat forming green) and planktonic (single-cell blue-green) algae. The dose of copper sulfate and control are affected by algae species, water hardness, water temperature, and concentration as well as whether water is clear, turbid, flowing, or static. Preferably water should be clear and above 60° F with treatment made in late morning on a sunny day. Static water usually requires less copper sulfate than flowing water. The harder the water or the greater the algae concentration, the higher the required dose of copper sulfate. If floating mats or green algae are present, it is advisable to especially treat the surface of those mats for best control. Algae will absorb the copper sulfate within hours after treatment, and death should be evident within 3 to 5 days. If there is some doubt the concentration to apply, it is generally preferable to begin with a lower dose and increase the dose until algae are killed (Note: A few algae species are resistant to copper sulfate and may not be killed). Repeat treatments within a season may be needed to keep algae under control to the desired level.

**Environmental Hazard Statements**

This pesticide is toxic to fish. Direct application of copper sulfate to water may cause a significant reduction in population of aquatic invertebrates, plant, and fish. Do not treat more than one-half of a lake or pond at one time in order to avoid depletion of oxygen from decaying vegetation. Allow 1 to 2 weeks between treatment for oxygen levels to recover. Trout and other species of fish may be killed at application rates recommended on this label, especially in soft or acid waters. However, fish toxicity generally decreases when the hardness of water increases. Do not contaminate water by cleaning of equipment or disposal of wastes.

**Note:** The above fish toxicity precautionary statement under Environmental Hazards. Treatment of algae can also result in oxygen loss from the water caused by the decay of dead algae. This loss can cause fish suffocation. To minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait 10 to 14 days between treatments. Begin treatments along the shore and proceed outwards in bands to allow fish to move into untreated water.

When a water solution of copper sulfate is prepared, preferably mix in a plastic or glass container. When using a metal container, use one that is painted, enameled, or copper lined. Copper sulfate solutions will slowly react or corrode galvanized containers and brass parts. Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required.

**Specific Directions for Use**

**1. To control algae in impounded waters, lakes, ponds, and reservoirs: When to apply:** Early treatment is essential for most satisfactory algae control at the lowest dosage levels. Early growth is usually confined to shallower shore areas. Begin treatment when not over 5 to 10% of the water surface area is covered with algae growths which is usually nearest the shoreline. Delaying treatment until heavy growths are present usually requires a higher dose and may result in fish distress or death since rapid decomposition of heavy growths greatly reduces the oxygen content of the water. Several repeat treatments are usually necessary to control algae each season.

**Dosage Rate to Control Algae:** Accurately determine the surface areas of water to be treated at one time and multiply this by the average depth, in feet, of this water area to determine the acre foot of the water to be treated. One acre foot = one surface acre (43,560 sq. ft.) X one foot of depth. Each acre-foot of water contains 326,000 gallons, or 2,720,000 pounds of water. If the problem algae genera is known, use the table below and its equivalence to determine the approximate dosage of this product needed to control the genera (Note: A dose of 1 ppm equals 1 pound of this product for each million pounds of water). If the

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(Back Panel)

genera of either filamentous or planktonic algae is not known, apply 0.8 to 1.75 pounds of this product per acre-foot of water, using the lower rate in soft water and the higher rate in hard water. For control of bottom-attached algae, Chara and Nitella, use 1.75 to 2.3 pounds per acre-foot of water to be treated. If control is not achieved or in very adverse waters, a higher rate may be needed; but, consider the fish caution. Dose should not exceed 4 ppm of this product (1 ppm of copper as metallic) when water is used for drinking.

**Copper sulfate required for treatment of different genera of algae.** The genera of algae listed below are commonly found in waters of the United States. Use the lower recommended rate in soft waters (less than 50 ppm methyl orange alkalinity) and the higher concentration in hard water (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to public waters.

**How to apply:** Copper sulfate can be applied to impounded waters by several methods to control algae. Medium crystals are usually applied by dragging them in a burlap or finer mesh bag, attaching it to a boat or float so the bag is suspended in the top foot of water until the crystals are dissolved. Distribute the quantity of crystals first near the shoreline and continue outward with the boat traveling in parallel lines about 20 to 100 feet apart until the area has been treated or until 1/3 to 1/2 of the surface area has been treated. Continue dragging bag over treated area until the required minimum dose is applied and all crystals are dissolved. Various other application techniques may be used as long as the minimum required dose is applied uniformly to the water surface and these medium crystals are dissolved when applied to the water.

**2. To control algae in irrigation conveyance systems using the slug application method.** Make a dump of copper sulfate into the irrigation ditch or lateral at 1/4 to 2 pounds per cubic foot per second of water per treatment. Repeat about every 2 weeks as needed. A dump is usually necessary every 5 to 30 miles, depending on water hardness, alkalinity and algae concentration. Copper sulfate becomes less effective as the bicarbonate alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds about 150 ppm as CaCO<sub>3</sub>.

Organism	Dose	Algae Species
Cyanophyceae (Blue-Green)	1/4 to 1/2 ppm*	Anabaena, Anacystis, Aphanizomenon, Gloeotrichia, Gomphosphaeria, Polycystis, Rivularia
	1/2 to 1 ppm*	Cylindrospermum, Oscillatoria, Pectonema
	1 to 1-1/2 ppm*	Nostoc, Phormidium
	1-1/2 to 2 ppm	Calothrix, Symploca
Chlorophyceae (Green)	1/4 to 1/2 ppm*	Closterium,, Hydrodictyon, Spirogyra, Ulothrix
	1/2 to 1 ppm*	Botryococcus, Cladophora, Coelastrum, Draparnaldia, Enteromorpha, Gloeocystis, Microspora, Tribonema, Zygnuma
	1 to 1-1/2 ppm*	Chlorella, Crucigenia, Desmidiun, Golenkinia, Oocystis, Palmella, Pithophora, Straurastrum, Tetradron
	1-1/2 to 2 ppm	Ankistrodesmus, Chara, Nitella, Scenedesmus
Diatomacea (Diatoms)	1/4 to 1/2 ppm*	Asterionella, Fragilaria, Melosira, Navicula
	1/2 to 1 ppm*	Gomphonema, Nitzschia, Stephanodiscus, Synedra, Tabellaria
	1 to 1-1/2 ppm*	Achnanthes, Cymbella, Neidium
Protozoa (Flagellates)	1/4 to 1/2 ppm*	Dinobryon, Synura, Uroglena, Volvox
	1/2 to 1 ppm*	Ceratium, Cryptomonas, Euglena, Glenodinium, Mallomonas
	1 to 1-1/2 ppm*	Chlamydomonas, Hawatooccus, Perdinium
	1-1/2 to 2 ppm	Eudorina, Pandorina

1/4 to 1/2 ppm\* = 0.67 - 1.3 lb/acre ft  
 1/2 to 1 ppm\* = 1.3 - 2.6 lb/acre ft  
 1 to 1-1/2 ppm\* = 2.6 - 3.9 lb/acre ft  
 1-1/2 to 2 ppm = 3.9 - 5.32 lb/acre ft