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1/10



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

APR 26 1996

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

James Yowell  
Griffin Corporation  
P.O. Box 1847  
Valdosta, GA 31603

Dear Mr. Yowell:

Subject: Acute Dermal Toxicity Study and Labeling  
K-TEA Algaecide  
EPA Registration No. 1812-307  
Your Submission Dated April 18, 1996

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is not acceptable. Submit five (5) draft labels with the following corrections:

1. In the heading STATEMENTS OF PRACTICAL TREATMENT delete "ON BACK PANEL".

2. The "If on skin:" statement of practical treatment must read:

If on skin: Wash with plenty of soap and water. Get medical attention.

The Proposed Labeling Regulations published in the FEDERAL REGISTER on September 26, 1984 on page 37981 and the Label Review Manual on page 19 require this statement of practical treatment for products assigned to Toxicity Category III due to acute dermal toxicity. Since this requirement applies to all pesticide products, if your company feels that it is not appropriate to get medical attention if an applicator's skin contacts this product, you should submit your arguments to James Downing who heads Registration Division's Labeling Team.

3. If the Precautionary Statements section does not appear on the front panel, you must add a referral statement similar to the following:

See side panel for additional precautionary statements

2/10

-2-

4. The species names for the pests listed on the label should be underlined.

Sincerely yours,



Theresa A. Stowe  
Acting Team Leader  
Product Manager (22)  
Fungicide-Herbicide Branch  
Registration Division (7505C)

cc: Kathy Davis  
Accelerated Reregistration Branch  
Special Review and Reregistration Division (7508W)

James Downing  
Registration Support Branch  
Registration Division (7505W)

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3/10

**K-TEA™**

**Algaecide**

Use in Slow Moving or Quiescent Bodies of Water Including: Golf Course, Ornamental, Fish, Irrigation and Fire Ponds; Fresh Water Lakes and Fish Hatcheries; Potable Water Reservoirs and Associated Waters (Rivers, Streams, Bays and Coves); and Crop and Noncrop Irrigation Conveyance Systems (Canals, Laterals and Ditches).

Areas treated with K-TEA may be used for fishing, swimming, drinking, watering livestock and irrigating crops, turf, putting greens, fairways and ornamental plants immediately after treatment.

**Active Ingredient**

*Copper as elemental . . . . .	8%
Inert Ingredients . . . . .	92%
Total . . . . .	100%

\*derived from copper-triethanolamine complex and Copper Hydroxide  
One gallon contains 0.8 pounds of elemental copper

**KEEP OUT OF THE REACH OF CHILDREN**

**WARNING - AVISO**

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

**STATEMENT OF PRACTICAL TREATMENT ON BACK PANEL**

**IF INHALED:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

**IF IN EYES:** Flush eyes with plenty of water. Get medical attention if irritation persists.

**IF SWALLOWED:** Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

**IF ON SKIN:** Wash with plenty of soap and water. Get medical attention if irritation persists.

Net Contents: 2 1/2 Gallons

GRIFFIN CORPORATION

Valdosta, GA 31601

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated**

**APR 26 1996**

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

1812-307

EPA REG. NO. 1812-307

EPA EST. NO. 8901-TX-1

4/10

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

**WARNING**

May be fatal if inhaled. Causes eye irritation. Harmful if swallowed or absorbed through the skin. Do not breath vapor or spray mist. Avoid contact with skin, eyes or clothing. Wear waterproof gloves. Wear a mask or pesticide respirator jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. Wash thoroughly with soap and water after handling. Wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

**ENVIRONMENTAL HAZARDS**

This product may be toxic to fish. Some species of fish may be killed at application rates on this label - trout and channel catfish are especially sensitive. Immature fish are more susceptible to injury than mature. Generally, fish toxicity is reduced as water hardness increases. Consult State Fish and Game Agency or other responsible agency before applying this product to public waters.

**STORAGE AND DISPOSAL**

Store in a cool, dry place

**PESTICIDE DISPOSAL:** Do not contaminate water, food or feed by storage and 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.

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

**DIRECTIONS FOR USE**

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

**GENERAL INFORMATION**

K-TEA algaecide provides effective control of various filamentous, planktonic and branched algae which can occur in slow moving or quiescent bodies of water including: golf course,

5/10  
ornamental, fish, irrigation and fire ponds; fresh water lakes and fish hatcheries,; potable water reservoirs and associated waters (rivers, streams, bays and coves); and crop and noncrop irrigation conveyance systems (canals, laterals and ditches). K-TEA is most effective when applied at the first signs of algal bloom. K-TEA treated water may be used to irrigate crops, turf, fairways, putting greens and ornamental plants immediately after treatment. K-TEA may be applied by aircraft, ground sprayer or spray boat as a direct surface spray or direct subsurface application through weighted hoses, invert emulsions or polymer application as appropriate.

In areas heavily infested with algae or aquatic weeds or if water temperature is high, treatment can result in oxygen loss from decomposition of dead vegetation. This loss can cause fish suffocation. To minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation. Add only enough K-TEA for the actual area being treated. Wait 10-14 days before treating the remaining area. Begin treatment along the shore and proceed outward in bands to allow fish to move into untreated areas.

K-TEA may be used in combination with Komeen® or Diquat® for more effective control of Hydrilla verticillata and other vascular weeds. K-TEA may also be combined with other herbicides to improve weed control by killing algae which cover aquatic weeds and interfere with herbicide uptake.

NOTE: Undiluted K-TEA or concentrations above 1.0 ppm Cu++ may be injurious to crops, grass, ornamentals and other foliage. Do not apply in such a way that the concentrated product comes in contact with crops, ornamentals, grass or desirable plants. Apply only as specified on the label.

### ALGAE CONTROL

Free floating algae (planktonic), such as Anabaena, Aphanizomenon, Chlorella, Dictyosphaerium, Euglena, and Microcystis are controlled using 0.2 to 0.5 ppm metallic copper depending upon severity of growth.

Filamentous algae (mat-forming) such as, Cladophora, Hydrodictyon, Oedogonium and Spirogyra require 0.5 to 1.0 ppm metallic copper depending on growth and intensity. Chara and Phormidium are difficult to control unless treatment at 0.5 to 1.0 ppm metallic copper is initiated at the first signs of algal bloom.

FOR BEST RESULTS WITH K-TEA: Apply K-TEA early in the day when conditions are calm. Water temperature should be at least 60°F. Treat when algae first appears. Even distribution of K-TEA in the water will improve algae control; therefore, apply in a manner that distributes K-TEA throughout the treated area.

6/10

**COPPER LEVELS REQUIRED FOR CONTROL OF  
DIFFERENT GENERA OF ALGAE**

<u>ORGANISM</u>	<u>0.2-0.5 PPM COPPER</u>	<u>0.5-1.0 PPM COPPER</u>
Cyanophyceae (Blue-green)	Anabaena Aphanizomenon Cylindrospermum Gloeotrichia Gomphosphaeria	Microcystis Oscillatoria Plectonema Polycystis
Chlorophyceae (Green)	Botryococcus Closterium Coelastrum Draparnaldia Enteromorpha Gloecystis	Hydrodictyon Microspora Spirogyra Tribonema Ulothrix Zygnema
Diatomaceae (Diatoms)	Asterionella Fragilaria Gomphonema Melosira Navicula	Nitzschia Stephanodiscus Synedra Tabellaria
Protozoa (Flagellates)	Ceratium Cryptomonas Dinobryon Euglena Glenodinium	Mallomonas Synura Uroglena Volvox
		Calothrix Nostoc Ankistrodesmus Chara Chlorella Cladophora Crucigenia Desmidium Golenkinia Achnanthes Cymbella Neidium Chlamydomonas Eudorina Hawmatococcus Phormidium Symploca Nitella Oocystis Palmella Pithophora Scenedesmus Staurastrum Tetraedron Pandorina Peridinium

The genera of algae listed above are commonly found in water of the United States. Use the lower recommended rate in soft water (less than 50 ppm alkalinity) and the higher concentration in hard water (above 50 ppm alkalinity). Always consult your State Fish and Game Agency or other responsible agency before applying this product to public waters.

**DIRECT SURFACE SPRAY**

Begin treatment at the first signs of algae. If desired, dilute one volume of K-TEA with 10-20 volumes of water before application. Spray diluted mixture from shore or boat evenly across surface of water at rates to achieve a particular copper concentration according to the label below. To ensure best results, remove large mats of floating algae manually before treatment. A second application 1-2 weeks after the first may be necessary for heavily infested areas.

For most effective algae control, maintain the desired copper concentration for a minimum of three hours. Rates given below represent concentrations for quiescent or slow moving water. If water flow results in significant dilution of the treated water within three hours of application it may be necessary to meter K-TEA into the water (Refer to instructions for Drip System Application below).

7/10

**APPLICATION RATES FOR QUIESCENT OR  
SLOW MOVING WATER**

Depth of Water (Feet)	Gallons of K-TEA per acre to achieve the desired copper content		
	0.2 ppm Cu	0.5 ppm Cu	1.0 ppm Cu
1	0.7	1.7	3.4
2	1.4	3.4	6.8
3	2.0	5.1	10.2

**SUMMER APPLICATION** (stratified lakes) - When the average depth exceeds 4 feet and the lake is known to be stratified, it is necessary to treat only the upper 6 feet of water.

**SPRING/FALL APPLICATION** (unstratified lakes) - Treat the entire body of water, remembering to treat 1/3 to 1/2 of the surface area at a time to reduce the possibility of adverse effects on the fish population.

**DIRECT SUBSURFACE APPLICATION**

In deeper water, make a subsurface application of K-TEA at recommended rates through weighted trailing hoses where the greatest concentration of algae is present. Do not drag hoses on the bottom.

**POLYMER APPLICATION**

A polymer may be added to K-TEA or a K-TEA/Water premix to improve sinking, deposition and retention of the spray. Consult the manufacturer's recommendations regarding the use of a polymer for improved algae control.

**INVERT EMULSIONS**

K-TEA may be subsurface applied alone or in combination with other herbicides, including Diquat (see below), by injecting the products in an invert emulsion carrier. Invert applications should be made through weighted hoses drug below the surface of the water. Refer to all cautions and precautions of products used with K-TEA.

**AIRCRAFT APPLICATION**

Apply the recommended rate of K-TEA in 20 gallons of total spray solution per surface acre. Add the recommended rates of a drift control or sinking agent to the spray solution. Maintain constant agitation during addition of the polymer and continue through application. When treating moving water, apply the spray solution counter to the flow of water.

# DRIP SYSTEM APPLICATION

8/10

## FOR USE IN IRRIGATION CONVEYANCE SYSTEMS AND OTHER MOVING WATER

For best results, application should be made in anticipation of algae that may interfere with normal flow or delivery of water (obstruction of lateral headgates, screens, pumps, pumping systems and siphon tubes). Delayed treatment may result in matting or compaction of algae mats. Since low flow rates may result in poor chemical distribution and unsatisfactory algae control, it may be necessary to increase water flow rates during treatment.

Determine the water flow rate prior to treatment of the water system. If available, use weirs, orifices or similar devices which give accurate water flow measurements. If these devices are not available, volume of flow may be estimated by the following formula:

$$\text{Average Width (ft)} \times \text{Average Depth (ft)} \times \text{Velocity (ft/second)} \times 0.9 = \text{Cubic Feet per Second (C.F.S.)}$$

To determine velocity, measure the time it takes a floating object in the middle of the canal to travel a given distance. Divide the distance (feet) by the time (seconds) for velocity (feet/second). Repeat this procedure at least three times and then calculate the average velocity. Use the average velocity (feet/second) in the formula above to determine the flow rate (C.F.S.).

Once the water flow rate (C.F.S. or Gallons per Minute) has been calculated, find the corresponding drip rate for K-TEA on the chart below.

WATER FLOW RATE		K-TEA DRIP RATE		
C.F.S.	GAL/MIN	QTS/HR	ML/MIN	FL OZ/MIN
1	500	1.25	20	0.7
2	1000	2.50	40	1.3
3	1500	3.75	60	2.0
4	2000	5.00	80	2.3
5	2500	6.25	100	3.3

**Determining Amount of K-TEA:** To calculate the amount of K-TEA needed to maintain the drip rate for 3 hours, calculate as follows: QTS/HR x 3; or ML/MIN x 180; or FL OZ/MIN x 180. Applying the dosages given above will maintain 1 ppm Cu for three hours. Thorough mixing is necessary to uniformly disperse K-TEA in the water; therefore, apply K-TEA in the channel at weirs or other structures which create turbulence or at several injection points across the flow.



Calibrating For Drip Application (Gravity Feed): Pour the amount of K-TEA needed to treat for three hours (calculated above) into a drum or tank equipped with a brass needle valve and designed to maintain a constant drip rate. Using a stop watch, measure the volume of K-TEA in a graduated container (measuring cup, graduated cylinder, etc.). Adjust the needle valve so that K-TEA is dripping at the rate given in the table above. NOTE: If the flow rate changes during the 3 hour treatment period, it may be necessary to readjust the needle valve. If power is available, a small pump can be used to meter K-TEA into the water more accurately. 9/10

Distance of algae control from the application point will vary with severity of infestation. Repeat application at a point 3 hours downstream from the previous treatment station. Repeat as necessary to treat entire infested area. It may be necessary to periodically repeat treatments to maintain seasonal control.

### HYDRILLA VERTICILLATA CONTROL

Tank-mix K-TEA with Komeen or Diquat to kill algae which cover Hydrilla verticillata and interfere with herbicide uptake. Observe all cautions and limitations on the Komeen and Diquat labels.

#### K-TEA + KOMREEN TANK-MIX

Apply 1.7-3.4 gallons of K-TEA per acre-foot of water plus 3.34 gallons of Komeen per acre-foot of water when water temperature is above 60°F. Use the low rate of K-TEA for light algae infestations or easy-to-control species. Use the high rate of K-TEA for heavy algae infestations or difficult-to-control species. Apply using an application method which provides uniform coverage of the treated area and delivers the spray solution to the plant surface.

#### K-TEA + DIQUAT TANK-MIX

Apply 4 gallons of K-TEA plus 2 gallons of Diquat per surface acre in bright sunlight when water is above 60°F.

Surface Application: Apply by handgun, spray boat, aircraft or other method of application which provides uniform coverage of the treated area. Combine K-TEA and Diquat with water in a mix tank or use an injection system to make approximately 100 gallons for each surface acre treated. When using a spray boat, apply the mixture through hoses which are dragged as close to the bottom as possible. For best results, do not drag hoses on the bottom. Complete effect of the treatment will be observed in 8-12 weeks. In heavily infested areas, a second application after 12 weeks may be necessary.

Subsurface Application: Use a boom with trailing hoses fitted with Delavan or Spraying System 80-degree nozzle tips with 06 orifices, or a similar nozzle. Hoses 18-24 inches long will apply the material 3-6 inches below the water surface. Apply from the bow or stern of the boat in strips no more than 20 feet apart.

10/10

**Bottom Placement:** In firm, sandy-bottomed lakes where water is quiescent or slowly moving and Hydrilla has reached the surface, apply in a water carrier injecting the diluted K-TEA plus Diquat mixture 1-2 feet above the bottom using weighted trailing hoses. If suspended silt, muddy water, or where water is slowly moving through submersed growth, apply in an invert emulsion carrier injecting the K-TEA plus Diquat mixture in an invert emulsion carrier 1-2 feet above the bottom using weighted trailing hoses.

#### FISH NOTE

K-Tea may be toxic to Trout and other species of fish. Fish toxicity generally decreases when the hardness of the water increases.

#### IRRIGATION WITH TREATED WATER

When applied according to label instructions, water treated with K-TEA may be used for irrigation immediately after treatment.

#### WARRANTY STATEMENT

GRIFFIN warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of GRIFFIN. In no case shall GRIFFIN be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product or at Griffin Corporation's election, the replacement of this product. GRIFFIN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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