1812-312 10/03/2002 1/10

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

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

OCT 3 2002

Dr. W. A. Hawkins
Griffin LLC
P.O. Box 1847
Valdosta, GA 31603-1847

Subject: Komeen Aquatic Herbicide
EPA Reg. No.: 1812-312
Submission dated July 26, 2002

Dear Dr. Hawkins:

The revised product labeling referred to above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided you make the following change.

Add the following sentence to the General Information under a new heading of "Water Use Restrictions": "If treated water is a source of potable water, the residue of copper must not exceed 1 ppm."

The Agency notes that this proposed label does not include any labeling to prevent spray drift. The Agency requests that you review the draft Pesticide Regulation Notice (enclosed) and include appropriate spray drift instructions/guidance in a revised label.

A stamped copy of the label is enclosed for your records. Submit one copy of your final printed label before your release the product for shipment. If you have questions about this label

review, please contact Dennis McNeilly at (703) 308-6742 or electronically at mcneilly.dennis@epa.gov.

Sincerely,

/S/

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

Enclosures: Stamped label
Draft PR Notice, Spray Drift

06/07/02

KOMEEN®

AQUATIC HERBICIDE

g312d02a

Active Ingredient	
*Copper as elemental	8%
Inert Ingredients	92%
Total	100%

* Derived from copper-ethylenediamine complex and copper sulfate pentahydrate
One gallon contains 0.8 pounds of elemental copper

For use in Slow Moving or Quiescent Bodies of Water, including Golf Course, Ornamental, Fish, and Fire Ponds; Fresh Water Lakes, Fish Hatcheries and Potable Water Reservoirs. Areas treated with Komeen may be used for fishing, swimming, drinking and watering livestock immediately after treatment.

KEEP OUT OF THE REACH OF CHILDREN

CAUTION

FIRST AID	
IF SWALLOWED:	• Call a 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 a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 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 possible. • Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **For medical emergencies involving this product, call toll free 1-888-324-7598.**	
See Label for Additional Precautions and Directions for use.	

Griffin L.L.C.
Valdosta, GA 31601

EPA Reg. No. 1812-312
EPA Est. No. ___ ___ ___

Net Contents: _____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Avoid contact with skin and eyes. Wash thoroughly with soap and water after handling. Do not apply this product in a manner as to directly expose workers or other persons.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish. Trout and other species of fish may be killed at application rates recommended on this label. Generally, fish toxicity is reduced as water hardness increases. Consult State Fish and Game Agency before applying this product to public waters.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal. Store in a cool, dry place.

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 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

Komeen provides effective control of Hydrilla (*Hydrilla verticillata*), Brazilian Elodea (*Egeria densa*), Southern/Northern Naiads (*Najas* sp.), Coontail (*Ceratophyllum demersum*), Common Elodea (*Elodea canadensis*), Water Lettuce (*Pistia stratiotes*) and Waterhyacinth (*Eichhornia crassipes*). Under certain water quality conditions, such as low water hardness, Komeen may also control Eurasian Watermilfoil (*Myriophyllum spicatum*), Sago Pondweed (*Potamogeton pectinatus*) and American Pondweed (*Potamogeton nodosus*). Komeen may be applied to slow moving or quiescent bodies of water including potable water reservoirs and recreation lakes, golf course, ornamental, fish, and fire ponds.

Komeen may be tank mixed with other herbicides, such as fluridone, diquat ~~Sonar~~ and endothall for control of a broader weed spectrum (refer to the directions for use for specific directions). ~~Refer to all cautions and precautions of~~ Observe all precautions and limitations on the labels of all products used with Komeen.

The effectiveness of Komeen is based upon its penetration into plant tissues; therefore, proper placement of the product is essential. When weeds are actively growing, apply Komeen to the area where the greatest concentration of foliage is located in a manner ~~which~~ that will deposit the herbicide on leaf surfaces. The activity of Komeen may be reduced if silt or algae are present in

the water or cover the weeds. If algae ~~is~~ are present or covers the weeds, the effectiveness of Komeen may be improved by tank mixing with an algaecide, such as K-Tea.

Komeen may be applied by aircraft, sprayer or spray boat as a ~~direct~~ surface spray, as a ~~direct~~ subsurface spray through weighted hoses, in an invert emulsion, or mixed with a polymer, ~~application~~ as appropriate (see specific instructions and use chemicals cleared for application to growing crops). As a surface or subsurface application, Komeen may be applied diluted or ~~applied directly~~ undiluted, whichever is ~~applicable~~ most suitable to ensure uniform coverage of the area to be treated.

Komeen requires a minimum of 12 to 24 hours of contact with the target weeds in order to provide effective control. If the treatment has been successful, the aquatic weeds will drop below the surface of the water within 3 to 7 days after treatment. If this effect is not observed, Komeen may be reapplied 10 to 14 days after the initial application. Once weeds drop below the surface, it can take up to 6 weeks to realize the full effect of the treatment. ~~Complete effect of the treatment will be observed within 4 to 6 weeks. In heavily infested areas, a second application after 12 weeks may be necessary.~~

Undiluted Komeen 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~~ this label.

In areas heavily infested with aquatic weeds or if water temperature is high, treatment can result in oxygen loss from decomposition of dead vegetation, ~~This loss~~ which can cause fish suffocation. To minimize this hazard, do not treat more than ~~⅓ to~~ ½ of the water ~~area~~ body in a single operation. Add only enough Komeen for the actual area being treated. Wait 10 to 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.

Application Rates for Aquatic Weed Control in Quiescent or Slow Moving Water

Weed Pest	Copper Level Required For Control (ppm)*
Hydrilla verticillata (Hydrilla)	0.75 - 1.0
Suppression of	
Eichhornia crassipes (Waterhyacinth)	0.75 - 1.0
Egeria densa (Brazilian Elodea)	0.50 - 0.75
Najas sp. (Southern/Northern Naiads)	0.50 - 1.0
Ceratophyllum demersum (Coontail)	0.50 - 1.0
Elodea canadensis (Common Elodea)	0.50 - 1.0
Myriophyllum spicatum** (Eurasian Watermilfoil)	0.75 - 1.0
Potamogeton pectinatus (Sago Pondweed)**	0.75 - 1.0
Potamogeton nodosus (American Pondweed)**	0.75 - 1.0
Pistia stratiotes (Water Lettuce)	0.75 - 1.0

* Use lower rate in light infestations and higher rate for heavier infestations.

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** Control only in low water hardness.

Do not apply more than 1.0 ppm copper.

APPLICATION RATE CALCULATION

For large bodies of water, determine the size (in acres) and the average depth (in feet) of the area to be treated. Application rates are calculated by using the following formula to obtain the appropriate copper concentration:

Desired Concentration of Cu^{++} (ppm) x Average Depth of Water (feet) X 3.34 = Gallons of Komeen Per Surface Acre

To calculate the area and average depth of a lake or pond, use the following formulas. All measurements (length, width, radius, depth) should be in feet.

Area of a square or rectangle (ft^2) = length x width

Area of a circle (ft^2) = radius x radius x 3.14

Average Depth (ft) = sum of all depth measurements ÷ number of measurements
The more measurements taken, the more accurate the average depth will be.

1 gallon = 4 quarts or 8 pints or 16 cups or 128 fluid ounces
1 quart = 2 pints or 4 cups or 32 fluid ounces
1 acre = 43,560 square feet
1 acre-foot = 43,560 cubic feet = 325,762 gallons = 2,720,000 pounds

Average Water Depth of Treatment Site (feet)	**Gallons of Komeen per Surface Acre to Achieve the Desired Copper Concentration**		
	0.5 ppm	**0.75 ppm**	**1.0 ppm**
1	1.7	2.5	3.3
2	3.3	5.0	6.7
3	5.0	7.5	10.0
4	6.7	10.0	13.4
5	8.4	12.5	16.7
6	10.0	15.0	20.0
7	11.7	17.5	23.4
8	13.4	20.0	26.7
9	15.0	22.5	30.1
10	16.7	25.1	33.4

For smaller bodies of water, determine the size (in square feet) and the average depth (in feet) of the area to be treated.

Average Water Depth of Treatment Site (feet)	Fluid Ounces of Komeen per 1,000 Square Feet to Achieve the Desired Copper Concentration		
	0.5 ppm	0.75 ppm	1.0 ppm
1	5.0	7.5	10.0
2	10.0	15.0	20.0
3	15.0	22.5	30.0
4	20.0	30.0	40.0
5	25.0	37.5	50.0
6	30.0	45.0	60.0
7	35.0	52.5	70.0
8	40.0	60.0	80.0
9	45.0	67.5	90.0
10	50.0	75.0	100.0

METHODS OF APPLICATION

SPRAY BOAT

~~Direct~~ **Surface Application:** Surface applications may be made near shorelines or in shallow water (4 feet or less).

~~Direct~~ **Subsurface Application:** In deep water (4 feet or more), make a subsurface application of Komeen at recommended rates through weighted trailing hoses where the greatest concentration of foliage exists, and where deposit on leaf surfaces will be assured. Do not drag hoses on the bottom.

Invert Application: Komeen will invert easily using either tank mix or bi-fluid mixer techniques. Invert applications should be made through weighted hoses dragged below the surface of the water. The invert emulsion will form tiny droplets which will adhere to the submerged vegetation and release the herbicide in close proximity to the plant. Do not drag hoses on the bottom.

The emulsifier should release Komeen at a rate fast enough to be quickly absorbed by the plant tissue but not so fast that it can be washed away from the treatment area. The invert emulsion ~~has~~ should have a heavy viscous consistency much like mayonnaise.

Apply Komeen in an appropriate invert system. The ratios given below should be used only as a guide in the preparation of a Komeen invert emulsion. It is best to test the invert system to be

used prior to application to ensure proper results. The tightness and weight of the invert may be altered by slight changes in the suggested ratios.

Approximate ratios for tank mix systems:
80 gallons water : 3 gallons invert oil : 8 gallons Komeen.

Approximate ratios for bi-fluid mixer systems:
60 gallons water : 3 gallons invert oil : 16 gallons Komeen.

~~For~~ In areas of heavy weed growth, invert application may ~~result in~~ produce a streaking effect due to localized control where the hoses were drug. For ~~those~~ such areas, a direct application is preferred. Repeating an application of Komeen to a treated area within a short time after the first treatment may not increase effectiveness.

Polymer Application: A polymer may be added to Komeen or a Komeen/water premix to improve sinking, deposition and retention of the spray. Consult the manufacturer's recommendations regarding the use of a polymer for improved aquatic weed control.

SPRAY EQUIPMENT

Direct Surface Application: Surface application may be effective near shorelines or in shallow water.

Polymer Application: Apply the recommended rate of Komeen in 100 to 400 gallons of total spray solution per surface acre. Add the recommended rate of sinking agent to the spray solution. Maintain constant agitation during addition of the polymer and continue through application. The polymer adheres to Komeen and forms strings that sink and stick to the aquatic vegetation. When treating slow moving water, the spray rig should move at a slow pace (4 to 5 mph) counter to the flow of water. Apply the spray solution to the area of densest foliage.

AIRCRAFT APPLICATION

Polymer Application: Apply the recommended rate of Komeen 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 slow moving water, apply the spray solution counter to the flow of water.

TANK MIX

Komeen + Diquat Tank Mix: Komeen can be mixed with diquat (diquat dibromide (1,2-a:2',1'-c) pyrazinediium dibromide 35.3%) and be applied by helicopter for control of Bladderwort, Curlyleaf Pondweed, Leafy Pondweed, Richardson Pondweed, Small Pondweed, Cattail, ~~American~~ Common Elodea, Duckweed, Water Lettuce, Eurasian Watermilfoil, Floatingleaf Pondweed, Coontail, Common Salvinia, Southern Naiad, Slender Naiad, Sago Pondweed, Pennywort, Hydrilla and Waterhyacinth in accordance with the more restrictive of the 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. Mix 20 gallons of Komeen with 10 gallons of Diquat and 2 gallons of Nalquatic per 100 gallons of water. Apply at

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the rate of 20 gallons per acre (equivalent of 4 gallons Komeen, 2 gallons Diquat and 0.4 gallons Nalquatic per surface acre). Algae on ~~the~~ plant surfaces may interfere with uptake of herbicides. ~~therefore,~~ Use K-Tea algaecide prior to this application to remove excess algae and improve control.

Komeen + Endothall Tank Mix: Komeen can be mixed with endothall (dipotassium salt of endothall ~~10.1~~ 40.3% ~~or mono(N,N-dimethylalkylamine) salt of endothall 53.0%~~) and be applied as a uniform surface spray or injected under the water's surface for control of *Najas*, Elodea, Coontail, *Potamogeton*, Watermilfoil, *Zannichellia*, *Vallisneria*, *Cladophora*, *Pithophora*, *Spirogyra*, *Chara*, American Pondweed and Sago Pondweed in accordance with the more restrictive of the 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. Mix 20 gallons of Komeen with 15 gallons of endothall in 100 gallons of water. Apply at the rate of 20 gallons per surface acre (equivalent to 4 gallons Komeen, 3 gallons endothall). Algae on ~~the~~ plant surfaces may interfere with uptake of herbicides. ~~therefore,~~ Use K-Tea algaecide prior to this application to remove excess algae and improve control.

Komeen + ~~Sonar A.S.~~ Fluridone Tank Mix: Komeen can be mixed with ~~Sonar A. S.~~ 41.7% fluridone, such as Avast!, ~~(fluridone 41.7%)~~ and be applied as a uniform surface spray or injected under the water's surface for control of Common Duckweed, Spatterdock, Bladderwort, Fanwort (*Cabomba*), Watermilfoil, Paragrass, Common Elodea, Brazilian Elodea, Najas Elodea, Naiad, Coontail, American Pondweed and Sago Pondweed in accordance with the more restrictive of the 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. Mix 20 gallons of Komeen with 1.5 quarts of ~~Sonar A.S.~~ Avast! in 100 gallons of water. Apply at the rate of 20 gallons per surface acre (equivalent to 4 gallons Komeen, 0.3 quarts ~~Sonar A.S.~~ Avast!). Algae on ~~the~~ plant surfaces may interfere with uptake of herbicides. ~~therefore,~~ Use K-Tea algaecide prior to this application to remove excess algae and improve control.

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'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.

[Based on the EPA stamped accepted label dated February 11, 1999]

ACCEPTED
with COMMENTS
In EPA Letter Dated:

OCT 3 2002

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 1812-312