DOC ID 530557

ACCEPTED
FOR REGISTRATION
March 13, 2012
New York State Department
of Environmental Conservation
Division of Materials Management
Pesticide Product Registration

Classified for
"RESTRICTED USE"
in New York State
under 6NYCRR Part 326

Please refer to most current SLN Labeling

syngenta

FIFRA Section 24(c) Special Local Need Label

FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF NEW YORK

Tribune™

EPA REG. NO. 100-1390

EPA SLN NO. NY-120007

This supplemental labeling must accompany every container of Tribune (EPA Reg. No. 100-1390) sold in New York State, regardless of the intended use.

For Control of Weeds in Aquatic Areas

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR PEST CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

DIRECTIONS FOR USE

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

Follow all applicable directions, restrictions, and precautions including statements pertaining to the Worker Protection Standards, on the EPA-registered Tribune label.

This label must be in the possession of the user at the time of application.

AQUATIC USE DIRECTIONS

The aquatic use directions on this supplemental labeling are the only aquatic uses allowed in New York State.

For application only to ponds, lakes, and drainage ditches where there is little or no outflow of water and which are totally under the control of the product's user. Do not use the treated water for animal consumption, spraying, irrigation, or domestic purposes for 14 days after treatment.

Do not treat water where depth is 3 feet or less. Where water is 3 feet or more deep use the following rates based on weeds present. Dilute all applications by mixing with water prior to treatment at a dilution of 1 part product per 200 parts, or more, water. Apply only by spray to surface of lake with a boom sprayer.

WEED SPECIES	USE RATE - GALS/SURFACE ACRE	APPLICATION
Submerged Weeds (Infesting Still Ponds, Lakes, Ditches or Portions Thereof):		
Bladderwort (Ultricularia spp.) Coontail (Ceratophyllum demersum) Elodea (Elodea spp.) Naiad (Najas spp.) Pondweeds, (Potamogeton spp.) * *Except P. robbinsii; also Richardson Pondweed (P. richardsonii) in Minnesota. Watermilfoil (Myriophyllum spicatum)	1-2 2 2 1 2 1-2	In mixed weed population use the high rate of application as indicated by weeds present
Floating Weeds:		
Pennywort (Hydrocotyle umbellata) Salvinia (Salvinia rotundifolia) Water Hyacinth (Eichhornia crassipes	1/2 - 3/4 1/2 - 3/4 1/2 - 3/4	200 gals of water plus 1 pt of a 75% spreader (non-ionic) should be applied as an overall spray for the control of the weeds. The high rates of Tribune should be use for late season application.
Duckweed (Lemna spp and Spirodela spp)	1	For control, apply Tribune as an overall spray in 200 gals. of water plus 1 pt of a 75% spreader (non-ionic) per acre. Care should be taken to thoroughly cover all plants on water and limit application to damp marginal areas greater than 3 feet in depth. Reinfestation of Duckweed occurs readily from untreated areas. Retreatment with Tribune may be necessary to obtain season long control

WEED SPECIES	USE RATE - GALS/SURFACE ACRE	APPLICATION
Marginal Weeds (Infesting the Edges and Other Portions of Ponds, Lakes, and Ditches):		
Cattails (Typha spp. only in areas of three feet in depth or more	1	For top kill apply Tribune in 200 gals water plus 1 pt of a 75% spreader (non-ionic) for full coverage and thorough weed contact. Repeat treatment as necessary to control regrowth. For best results apply before flowering.

Formula for Parts per Million (ppm) Recommendations
Gals to use = ppm recommended x acreage of water x average depth of water x 1.4. For example - ½ ppm recommendations; two acre pond; 4 feet average depth; ½ x 2 x 4 x 1.4 = 5.6 gals required.

Restrictions: (1) Do not use Diquat for Algae control in N.Y. (2) Do not combine copper with Diquat in N.Y. (3) Do not apply by air in N.Y. (4) Do not use for control of waterlettuce in N.Y. (5) Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

Section 24(c) registrant:
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, NC 27419-8300

EPA SLN No.: NY-120007

Label Code: NY1390061AA0312

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Pest Management
Product Registration and Pest Management Alternatives
625 Broadway, Albany, New York 12233-7257
Phone: (518) 402-8768 • **Fax:** (518) 402-9024
Website: www.dec.ny.gov/chemical/8528.html
E-Mail: **ppr@gw.dec.state.ny.us**

Joe Martens
Commissioner

March 14, 2012

VIA UPS

Ms. Susan Person
Syngenta Crop Protection, LLC
410 South Swing Road
Greensboro, North Carolina 27409

Dear Ms. Person:

Re: Registration of Special Local Need Labeling for the New Pesticide Product, Tribune (EPA Reg. No. 100-1390) Assigned SLN No. NY-120007.

The New York State Department of Environmental Conservation (Department) has reviewed your application, received November 11, 2012, to register Special Local Need (SLN) labeling for Tribune (EPA Reg. No. 100-1390) in New York State.

The federally approved label for this product cannot be registered for aquatic use in New York State as listed, due to restrictions specified in 6NYCRR Part 327.6(b) for the active ingredient diquat dibromide when used to control submerged and emergent vegetation, and additional concerns of the Department, as stated in the Department letter dated August 17, 2001 (copy enclosed).

Tribune Herbicide is a liquid formulation which consists of 37.3% diquat dibromide. Tribune Herbicide is labeled for the control of aquatic weeds in the following aquatic sites: ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water.

The SLN labeling specifies the New York State required aquatic use restrictions for Tribune Herbicide (EPA Reg. No. 100-1390). The product is assigned the registration number: **SLN No. NY-120007**.

Therefore, under the authority of Section 24(c) of FIFRA, the Department hereby grants a Special Local Need registration for Tribune Herbicide (EPA Reg. No. 100-1390).

The SLN labeling contains the only aquatic uses allowed in New York State. All precautionary statements, applicable use directions, use precautions and limitations of the labeling affixed to the Tribune Herbicide container must be followed.

The SLN registration for Tribune Herbicide (SLN No. NY-120007), as noted on the "restriction" column of the certificate, is classified as "restricted use" in New York State under rules and regulations 6NYCRR 326.2(h). As such, this product is restricted in its purchase, distribution, sale, use, and possession in New York State.

According to New York State Department of Environmental Conservation Regulations 6NYCRR 326.3(a): "It shall be unlawful for any person to distribute, sell, offer for sale, purchase for the purpose of resale, or possess for the purpose of resale, any restricted pesticide unless said person shall have applied for, and been issued a commercial permit."

Should you require information to obtain a commercial permit, please contact the Pesticide Reporting & Certification Section, at (518) 402-8748.

The Pesticide Reporting Law (PRL) in the Environmental Conservation Law Article 33 Title 12 requires all certified commercial pesticide applicators to report information annually to the Department regarding each pesticide application they make. **Commercial pesticide retailers are required to report all sales of restricted pesticide products and sales of general use pesticide products to private applicators for use in agricultural crop production**. If no sales are made within New York State, a report still must be filed with the Department indicating this is the case.

If you need information relating to the Pesticide Reporting Law, or annual report forms, please visit the Department's website at http://www.dec.ny.gov/chemical/27506.html or call (518) 402-8748.

The Certificate of Pesticide Registration and a copy of the New York State stamped "Accepted" SLN labeling and the associated container labeling for Tribune Herbicide, are enclosed for your records.

Please be reminded that a copy of the accepted SLN label **must** be distributed with all products sold in New York State and be in the possession of the user at the time of pesticide application.

Please contact Ms. Paula McBath, of my staff, at (518) 402-8768, if you have any questions.

Sincerely,

Jeanine M. Broughel

Jeanine M. Broughel
Chief
Product Registration and Pest Management
Alternatives

Enclosures

Bcc: P. McBath
Product file
4425-1 General

Becc: Daybook
S. Menrath
J. Broughel
A. Lamanno

Diquat Dibromide - MCL Application Withdrawal for Reward 8/01

August 17, 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

John D. Abbott, Ph.D.
Team Leader
State Regulatory Affairs
Syngenta Crop Protection, Inc.
PO Box 18300
Greensboro, NC 27419-8300

Dear Dr. Abbott:

Re: Withdrawal of Application for Removal of New York State Specific Aquatic Use Restrictions for Reward Landscape and Aquatic Herbicide (EPA Reg. No. 10182-404), Which Represents a Major Change in Labeling for the Active Ingredient Diquat Dibromide

The New York State Department of Environmental Conservation (the Department) has reviewed the application, received July 26, 2000, and additional information, received October 19, 2000, for removal of New York State specific aquatic use restrictions for Reward Landscape and Aquatic Herbicide (EPA Reg. No. 10182-404). The application was submitted by Zeneca Ag Products and was subsequently transferred to Syngenta Crop Protection, Inc.

The proposed change represents a major change in labeling for the active ingredient diquat dibromide. Reward Landscape and Aquatic Herbicide (EPA Reg. No. 10182-404) is currently registered for use in New York State only in conjunction with Special Local Need (SLN) labeling. The SLN for this product was registered on October 29, 1997 and was assigned EPA SLN No. NY-970010. The major change in labeling application was deemed complete for purposes of review December 18, 2000 and the registration decision date was May 17, 2001. Syngenta Crop Protection, Inc. waived the registration decision date and formally withdrew the application on June 21, 2001.

The Federally approved label for this product cannot be registered "as-is" due to restrictions specified in 6NYCRR Part 327.6(b) and additional concerns of the Department. The following is the applicable section of Part 327:

327.6 Authorized chemicals and specifications.

(b) *Diquat for submerged and emergent vegetation.*

(1) *Active ingredient.* Diquat dibromide-6, 7-dihydrodipyrido (1, 2-a:2), (1-c)-pyrazidinium dibromide.

(2) *Purpose.* Authorized for the control of emergent plants having leafy growth lying flat on the water surface and for the control of aquatic plants growing beneath the water surface.

(3) *Periods of treatment.* Generally spring and late summer. Treatment after September 1 may require special authorization.

(4) *Dosage.* Maximum application is two gallons (35.3%A.I.) per surface acre of water.

(5) *Treatment area.* Shall not extend beyond 200 feet from shore or beyond a maximum depth of six feet whichever gives the greatest distance from shore.

(6) *Repeat treatments.* No permit shall be issued for a second treatment within the same season.

(7) *Water-use restrictions.* Treated waters shall not be used for irrigation, bathing, fishing, or by man or animals for drinking or food processing for a period of 14 days after treatment.

The following is a table which compares the Federal label conditions with the New York State specific SLN label conditions:

Comparison	**Federal label conditions**	**NY SLN label conditions**
1. Treated water use	0 to 5 DAT (1)	14 DAT
2. Applications per season	14 days allowed between treatments (2)	1 application per season
3. Gals product /acre(3)	0.5 - 2.04	0.5 - 2.0
4. Application volume/acre	75 - 200 gallons (ex. Aerial, 10-24 gal/acre)	200 gallons
5. Aerial application allowed	yes	no
6. Application placement	surface, subsurface, or bottom placement	surface only by boom sprayer only
7. Application to water (< 3 feet in depth allowed)	yes (5)	no
8. Application to deep water	unrestricted (depending upon the weed problem)	do not apply >200 feet from shore or beyond a depth of 6 feet
9. Water body types	still water or public water including reservoirs, marshes, bayous, canals, streams, rivers	only allowed for "ponds, lakes, drainage ditches with little or no outflow and totally under control of product user"
10. Weed spectrum	broad	narrow
11. Allowed for control of water lettuce	yes	no
12. Plant habitat	no restriction	leafy growth lying flat on surface or submerged only
13. Use for algae suppression	allowed	not allowed

14. Use in combination with Cu++	allowed	not allowed

Registrant Notes:
1. Approved by EPA October 23, 1995-minor correction from '95 to present
2. Label verbiage: "Therefore, treat only 1/3 to1/2 of the water body at one time and wait 14 days between treatment."
3. Plus 1 pt of 75% NIS
4. Rate dependent upon application and weed species
5. Revisions have been made over the past few years-see label- "For water less than or equal to 2 feet in average depth of treatment areas, use a maximum of 1 gallon Reward . . "

The New York State Department of Health (DOH), the Department's Division of Fish, Wildlife & Marine Resources' Bureau of Habitat (BOH) and the Department's groundwater staff have reviewed the information submitted to date in support of the application for registration of the federal label for Reward Landscape and Aquatic Herbicide (EPA Reg. No. 10182-404).

The DOH stated that the New York State restrictions specify that "Treated waters shall not be used for irrigation, bathing, fishing, or by man or animals for drinking or food processing for a period of 14 days after treatment." The federal Reward label specifies a use restriction of one, two or three days (depending on the application rate) for human drinking use, no restriction for fishing and swimming, one day livestock consumption restriction from irrigation use on crops. The registrant submitted some information in support of these decreased restrictions on diquat dibromide-treated water use.

To support the one to three day restriction from drinking water use, the registrant submitted summaries of studies that measured water concentrations of diquat following treatments. The data provided indicated that by 24 hours post-application, the diquat levels were approximately even throughout the water column. The maximum application rate of 4 pounds diquat cation per acre was used and in one pond resulted in water concentrations of 0.053 to 0.088 milligrams per liter (mg/l) in the treated and untreated portions of the pond at one-day post-application. At three days post-application, diquat levels in the treated and untreated part of the pond ranged from 0.013 to 0.047 mg/l. At five days post-application, one sample contained 0.025 mg/l, whereas the others were 0.012 mg/l or less. These sampled concentrations indicate that exceedances of the federal and State drinking water standard for diquat of 0.02 mg/l can occur up to five days post-applcation and a one to three day prohibition from drinking water may not be adequate. However, a 14-day restriction is probably unnecessarily long as concentrations in this study were uniformly 0.001 mg/l at this time point and were below the drinking water standard at 7 days post-application.

The USEPA drinking water standard (maximum contaminant level), for the parent compound diquat is 0.02 milligrams per liter. This value is also the New York State (10 NYCRR Part 5, Public Water Systems) drinking water maximum contaminant level.

The federal label does not have a restriction from swimming in treated water and someone could legally swim in such waters during or immediately after application. While the State's restriction from swimming in treated waters for 14 days is probably excessive, some restriction appears warranted to allow mixing and dissipation of diquat in the water. A 24-hour after application swimming restriction should be sufficient.

Our groundwater staff stated that the primary route of environmental dissipation of diquat is strong adsorption to soil particles. Diquat does not hydrolyze or photodegrade and is resistant to microbial

degradation under aerobic and anaerobic conditions. There were no major degradates isolated from any of the environmental fate studies. When used as an aquatic herbicide, diquat is removed from the water column by adsorption to soil sediments, aquatic vegetation, and organic matter. Adsorbed diquat is persistent and immobile, and is not expected to be a groundwater contaminant. The use of the product as federally labeled should not cause an impact to ground or surface water in New York State.

The BOH stated that an SLN registration for aquatic herbicides with the active ingredient diquat would still be required, however, several changes to the existing SLN are warranted. These include:

1. Revision of the description of waters where diquat can be applied to be more consistent with those on the federally approved label;
2. Changes in the restriction on the use of diquat in water shallower than 3 feet in depth;
3. Reduction in the dilution required; and
4. Allowance of aerial application and underwater injection of dilute diquat solutions.

The diquat SLN cannot be dropped because the federally approved label for Reward Landscape and Aquatic Herbicide still allows undiluted diquat concentrate to be poured directly out of the container into the water, for the simultaneous use of diquat and copper-based algicides, and because of the occurrence of unclear application instructions.

Zeneca also proposes revisions to the diquat limitations found in 6NYCRR Part 327.6 (b)(5). It is BOH's opinion that the entire 6NYCRR Part 327 is in need of revision. The 1981 Programmatic Environmental Impact Statement on Aquatic Vegetation Control Program of the Department of Environmental Conservation also needs to be updated and revised. BOH recommends that no piecemeal changes to 6NYCRR Part 327 should be contemplated until the entire regulation can be carefully analyzed and reviewed, including the sections relevant to diquat. Those limitations should stand until regulatory changes to the entire aquatic vegetation control program are undertaken.

Background

In 1992, New York State proposed to cancel the registration of the aquatic herbicide diquat. This action was taken because of the decline of the muskellunge population in Chautauqua Lake during the period when diquat was used heavily in the lake to control Eurasian watermilfoil and curlyleaf pondweed. A comprehensive review of diquat was conducted (Sinnott, 1989). This review found that even though the water column concentrations of diquat following an application at the labeled rate were lower than fish 24 - 96 hour toxicity thresholds, acute toxicity to larval fish could still occur. Toxicity tests done by NYSDEC staff at the Rome Lab found that larval fish were very sensitive to diquat (Skea et al, 1987; Paul et al, 1992). "Hot spots," or areas of high concentrations of diquat were documented in the scientific literature (Berry et al, 1975; Coats et al, 1964). Finally, the diquat label allowed for undiluted diquat concentrate to be poured directly out of the container into the water. This combination of factors greatly increased the probability that larval and very young fish sheltering or nesting in dense vegetation would be exposed to greatly elevated diquat concentrations and possibly killed, even though the period of exposure was relatively short.

In 1992, rather than cancelling the diquat registration, the registrant agreed to a Special Local Need (SLN) registration in New York State. The SLN made the following changes to the label application conditions:

a. Diquat could not be applied by pouring undiluted concentrate out of the container directly into the

water. It could only be applied by surface spray.
b. The spray solution must be applied in a 200:1 dilution of water to diquat product.
c. Diquat could not be applied in waters less than three feet deep.
d. Diquat could not be used in conjunction with a copper-based herbicide or algicide.
e. Diquat could not be aerially applied or used to suppress/control algae or water lettuce.

Current Action

The current USEPA label, submitted for registration in July 2000, contains significant changes, as compared to previous labels. The changes include:

1.) Dramatically de-emphasizing (although not eliminating) the application methodology of pouring undiluted concentrate out of the back of the boat.
2.) Adding the restriction that in water with an average depth of two feet or less, the maximum application rate for Reward was only one gallon per acre.
3.) Revisions to waters where diquat can be applied.
4.) Changes to water use restrictions.

The registrant constructed a chart for comparing the Federal registration and the NY SLN registration. That chart is an excellent format for discussing the differences between the two registrations. The following chart was modified by adding a column labeled "NYSDEC/BOH Comments" in order to discuss each difference identified by the registrant.

Comparison	Federal label conditions	NY SLN label conditions	NYSDEC/BOH comments
1. Treated water use	0 to 5 DAT	14 DAT	Treated water use restrictions on the SLN should be the same as those on the federal label unless DOH has concerns.
2. Applications per season	14 days allowed between treatments	1 application per season	Multiple applications in the same water body but not in the same area should be permissible in order to avoid/prevent aquatic life impacts from low DO, assuming that an entire water body would be treated. If the total treated area was less than _ of the total surface area, such a measure would probably not be needed. This should be allowed on the SLN label, but carefully managed via permits.
3. Gals product/acre	0.5 - 2.0	0.5 - 2.0	no differences
4. Application volume/acre (ex. Aerial, 10-24 gal/acre)	75 - 200 gallons	200 gallons	The original 200:1 dilution was not based on any firm, environmental protection goal, but was aimed at keeping the ambient water concentration of diquat below 0.6 mg/L. Given the rapid dissipation times documented in Hamer, (1994), 75 gallon dilution (equivalent to 3.2 g diquat cation/liter) is acceptable, as long as every gallon of Reward applied is diluted with at least 75 gallons of water (except for aerial, see block 5).
			Terrestrial and aquatic applications of diquat are acceptable. The terrestrial application rates look to be

5. Aerial application allowed	yes	no	less than the aquatic, but a usual 100 foot buffer around water bodies for aerial application to terrestrial sites should be required if terrestrial aerial application is allowed, to avoid non-target phytotoxicity to non-target aquatic plants. For aquatic uses, aerial applications are rapid, evenly-distributed applications to the surface of the target water with a dilute spray solution. That accommodates concerns for YOY fish. The dilution factor is much less than what would be required for a surface spray application, but it is unlikely that there will be many aquatic aerial applications of diquat, and the aircraft will deliver a much more evenly-spread application of diquat than a surface spray operation, and finally, a plane couldn't hold much solution if the required dilution was much greater.
6. Application	surface, subsurface, or bottom placement	surface only by boom sprayer only	only Underwater/bottom injection of a dilute solution placement or bottom placement is acceptable, given the propensity for diquat to dissipate or be adsorbed, and the minimum time needed for the onset of toxicity to occur (5-6 hours, Paul, personal communication).
7. Application to water < 3 feet in depth allowed	yes	no	Given the time needed before the onset of toxicity, the rapid dissipation of diquat, the reduced label application rate in shallower water, the reduced label rate could be applied in shallow water. However, the restriction should be worded differently. It should say, between the shore and 4 foot of depth, the maximum application rate is one gallon per acre. Between four feet and deeper, 2 gallons per acre can be applied.
8. Application to deep water	unrestricted (depending upon the weed problem)	do not apply >200 feet from shore or beyond a depth of 6 feet	Even though this is codified in 6NYCRR Part 327.6.b. (5) as being applicable for diquat, the intent probably was for the restriction to apply to all aquatic herbicides. In the 1981 PEIS, the balancing of the need for aquatic vegetation control versus the potential impacts to aquatic ecosystems in which macrophyte play an important role is discussed (Section IV.B., pp 17-20). Under section VIII.B (p 70), Mitigation, reference is made to appendix 4, which contains a memo from the Bureau of Environmental Protection (BEP) to Regional Fish Managers. This memo provides general guidance that was mutually agreed upon between BEP and Bureau of Pesticides. Under General Conditions in waters open to the public, the restriction about only treating water six feet deep or less or less than 200 feet from shore is first mentioned. The six foot deep/200 foot out rule appears to be a programmatic mitigation measure for aquatic vegetation control in general. Before this restriction could be removed for any herbicide, the PEIS would have to be re-evaluated. Only if the condition was determined to be unnecessary should it then be dropped.

9. Water body types	still water or public water including reservoirs, marshes, bayous, canals, streams, rivers	only allowed for "ponds, lakes, drainage ditches with little or no outflow and totally under control of product user"	The water body types on the SLN should match those on the federal label, except the federal label is somewhat confusing. "Still" waters and "Public" waters are not appropriate classifications for subdividing waters for treatment purposes. The federal label seems to allow anyone to treat "still" waters, but only certified applicators can treat "public" waters. In New York, only certified applicator can apply aquatic pesticides to any water, so the classification is moot. Recommended compromise wording might be: "For use only to still waters (i.e. ponds, lakes, reservoirs, drainage ditches) where there is minimal or no outflow or in which the outflow is totally under the control of the product user, or to slow moving or quiescent bodies of water (flowing water with a longitudinal velocity of 0.15 feet/second or less, measured in the channel center) for control of aquatic weeds."
10. Weed spectrum	broad	narrow	The plants on the SLN match the plants on the label except for hydrilla, water lettuce, frog's bit, and algae. Hydrilla is not found in NY. Water lettuce is not usually found in NY, and as a tropical plant from the Everglades, it probably can't withstand NY winters when it does crop up. Algae - see 13. below.
11. Allowed for control of water lettuce	yes	no	The restriction is not needed. If water lettuce does not occur in New York, there is no need to restrict it on the label.
12. Plant habitat	no restriction	leafy growth lying flat on surface or submerged only	The basis for any such restriction on either the current SLN or the original is not apparent, although it is somewhat implicit. The restriction on use in water < 3 feet deep makes it difficult to treat emergent vegetation.
13. Use for algae suppression	allowed	not allowed	There is no need to expose aquatic life to risks only to "suppress" algae when CuSO4 can be used to eliminate it. The benefit from such a use is questionable at best.
14. Use in combination with Cu++	allowed	not allowed	Absolutely not. Documentation of significant synergism (1977).

BOH Summary

The basis for New York's concerns about diquat is the risk of acute toxicity to larval fish. The greatest potential for acute toxicity to larval fish occurs when undiluted diquat concentrate is poured directly from the container into shallow water. Since the completion of BOH's original analysis in 1989, additional information has become available, and the registrant has made changes to the diquat label. The additional information includes toxicity tests by the NYSDEC Rome Field Station that showed the onset of toxicity for larval fish exposed to diquat is 5-6 hours, and that mortality occurs gradually as the duration of the exposure increases. The important label change made by the registrant was limiting the application rate to 1 gallon per acre in water with a mean depth of two feet or less.

The reduced application rate in water with an average depth of less than two feet decreases the risk to larval fish, and the Rome field station tests suggest that if diquat dissipates fairly quickly, toxicity should not occur.

Despite these improvements, the BOH still has concerns about the use of diquat and cannot recommend that diquat be registered with the current federal label. The federal label still allows undiluted diquat concentrate to be poured directly from the container into the water, and the federal label allows diquat to be used in conjunction with a copper-based algicide. In addition, the BOH recommends alternative wording for some of the items on the current federal label, specifically, "Application to water less than three feet deep" and "Water body types."

A. Application to water less than three feet deep: The Reward label restriction regarding application of diquat in shallow water reads: "For water less than or equal to 2 feet in average depth of treatment area, use a maximum of one gallon Reward . . . per surface acre." Since New York limits the depth at which diquat or other aquatic herbicides can be applied to six feet, the average depth of the treatment area will usually be three feet, and the full two gallons per acre could be applied throughout the treatment area. In such a case, there will be no benefit or risk reduction for larval fish in shallow water. The restriction should be reworded to insure that there is a reduced maximum application rate in waters less than four feet deep, for example: "In water less than 4 feet deep, only one gallon Reward per acre can be applied. In water greater than four feet deep, up to 2 gallons per acre can be applied." The area between the shore (0 feet deep) and the 4 foot depth contour would have a mean depth of 2 feet, so it is the same limitation as on the federal label, but would be easier to implement on permits and to enforce, and would be more likely to provide reduced risk to larval fish nesting and sheltering in shallow water.

B. Water body types: The revised Reward label allows diquat to be applied in "slow or quiescent" waters, but does not define what "slow or quiescent" waters are. According to Ritter, et al (1995), the greatest velocity modeled for diquat dissipation in lotic water was waters with a longitudinal velocity of 0.15 f/s (0.045 m/s) measured in the center of the channel. Since this is the highest velocity modeled for aquatic dissipation of diquat in lotic systems, it should serve as the upper limit for identifying those lotic systems in which diquat can be applied. This could be worded as follows, for example: "For use only to still waters (i.e. ponds, lakes, reservoirs, drainage ditches) where there is minimal or no outflow or in which the outflow is totally under the control of the product user, or to slow moving or quiescent bodies of water (flowing water with a longitudinal velocity of 0.15 feet/second or less, measured in the channel center) for control of aquatic weeds."

Due to the above-mentioned issues, Syngenta Crop Protection, Inc. has requested the withdrawal of the Reward Landscape and Aquatic Herbicide (EPA Reg. No. 10182-404) Major Change in Labeling application. Syngenta Crop Protection, Inc. must decide whether to pursue the steps which are required to be taken in order to change the regulations which specifically limit applications of diquat products. As previously discussed, this would include updating and revising the "1981 Programmatic Environmental Impact Statement on Aquatic Vegetation Control Program of the Department of Environmental Conservation" and carefully analyzing and reviewing 6NYCRR Part 327 as a whole.

Syngenta Crop Protection, Inc. understands that the $300 application fee is forfeited, and that any subsequent application for registration of a revised Special Local Need label or the federal approved label for this product will require a complete application and fee.

If you have any questions, please contact Jeanine Broughel, of my staff, at (518) 402-8768.

Sincerely,

Maureen P. Serafini
Director
Bureau of Pesticides Management

cc: w/enc. - N. Kim/D. Luttinger - NYS Dept. of Health
R. Zimmerman/ R. Mungari - NYS Dept. of Ag. & Markets
G. Good/W. Smith - Cornell University, PMEP

To Top

For more information relative to pesticides and their use in New York State, please contact the PMEP staff at:

5123 Comstock Hall
Cornell University
Ithaca, NY 14853-0901
(607) 255-1866

Cornell University

This site is supported, in part, by funding from the Northeastern IPM Center

Questions regarding the development of this web site should be directed to the PMEP Webmaster