

# Drano Lake

Eurasian Watermilfoil  
Control Project  
July, 2006

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DEPARTMENT OF ECOLOGY  
NOV 29 2006  
WATER QUALITY PROGRAM



Drano Lake located in Stevenson, Washington was treated during the summer of 2006 for the control of Eurasian watermilfoil and *Elodea canadensis*. Pre and post herbicide application surveys were performed. Macrophyte surveys were designed to evaluate Eurasian watermilfoil and native elodea plant locations throughout the lakes littoral zone. The 2006 pre-treatment plant survey was used in conjunction with an earlier survey completed during 2003 in an effort to evaluate the extent of the infestations and assisted in establishing treatment protocol.

## Survey Protocol

Numerous survey techniques were available and utilized during site evaluations. Macrophyte growth at the time of the pre-treatment survey was such that milfoil growth had already surfaced and was in the early stages of forming surface mats. Both milfoil and elodea growth was easily identified through the incorporation of visual observations, bottom sampling and underwater video.

**Visual Observations** - This technique is one of the most common and efficient means of evaluating plant communities. When water clarity is favorable, plant communities can typically be identified throughout most lake littoral zones. When incorporating this technique into a survey, the lake perimeter is initially inspected and then on subsequent passes the surveyor follows specific lake bottom contour lines in accordance with fathometer readings. The surveyor then notes whether plants are below, near the surface or at the surface. This procedure is continued until the entire littoral zone of the lake is surveyed.

**Bottom Sampling** - Bottom sampling consists of physically collecting plant samples from the lake and identifying the species collected. A bottom sampling device consisting of a weighted double sided rake is cast out and dragged along the lake bottom at the 12:00, 3:00, 6:00, and 9:00 positions. Transect lines are established perpendicular to the shoreline and sampling points are identified along the transect line. Typically, initial sampling points are defined along the transect line according to water depth. Additional sampling points are then added to the survey depending on the presence or absence of targeted plants. This approach results in the establishment of defined weed borders.

**Underwater Video** – When bottom sampling protocol produced questionable or inconsistent results, an underwater video camera was utilized to assist in site evaluation. Underwater video provides complete viewing of the bottom substrate which can later be reviewed in a controlled environment. Northeast Aquatic Eco-Systems utilizes an underwater video camera operating at a .1 Lux minimum and a 270,000 pixel resolution. The camera is submerged beneath the water and positioned just above the weed bed. Twelve High Intensity Red (HIR) lights are positioned around the camera lens. The picture captured through the camera is then displayed on board using a six-inch monitor for viewing. The survey boat traveled along specific lake transect and bottom contour lines.

## **Pre-Treatment Survey**

The 2006 pre-treatment assessment (Figure # 1 & 2) revealed little changes in plant diversity and/or plant locations as identified through the prior 2003 survey. An increase in the presence of E. milfoil was noted along the southwestern shoreline of the lake in conjunction with the plant expanding in range along both shorelines adjacent to the public boat launch. Milfoil occupied approximately 53 acres of the lakes littoral zone.

Following the 2003 survey the greatest upsurge in plant densities and ranges were associated with native elodea and coontail growth. These plant types were observed in various densities along a majority of the southern, western and shallow eastern zones of the lake. The steeper northern shoreline was void of such macrophytes. Pondweeds, in particular *Potamogeton crispus*, were restricted to a small section of the eastern shoreline of the mouth of the Little White Salmon River as it empties into Drano Lake

## **Milfoil, 2,4-D Treatment July 31, 2006**

All of the posting requirements, as identified in the NPDES permit issued for this project, were completed by 7:00 AM on the day of treatment. Posting consisted of four large 3 foot by 4 foot signs displayed at the public boat launch and the popular bank fishing site located along the northwestern shoreline. Additional smaller 8 inch by 11 inch signage was stapled to shoreline areas that had access to the main waterbody. Treatment began at 7:30 AM and was completed by 7:00 PM. Material was either directly loaded onto the application boat at the staging area or transported to predetermined shoreline areas for loading. All empty containers were rinsed at the site and then transported for recycling. Material was injected two feet under the waters surface utilizing a 20 foot Airgator Airboat. This application resulted in applying 1072 gallons of material over a surface area of 53 acres (Figure #3).

## **Elodea, Diquat Treatment August 8, 2006**

The same posting procedure as identified during the July 31 application was repeated a second time. Posting was completed prior to the application which initiated at 10:30 AM. Due to the limited budget, only 11 acres of elodea was treated with 22 gallons of Diquat (Reward). Elodea control was performed west of the boat launch within a large dense infestation located between the 5 and 12 foot contour line (Figure #4).

Upon completion of the treatment, a brief survey of the milfoil sites previously treated was conducted. This inspection resulted in a determination that the targeted milfoil at nearly all of the sites was responding favorably to the earlier 2,4-D treatment. One site (extreme easterly cove area) was noted as possibly being "burned" by the application.

## Post Treatment Survey September 2006

In evaluating post treatment results the same protocol noted earlier in the pre-treatment monitoring was incorporated into the post treatment survey. The post treatment survey also included an inspection of the plant material that had begun windrowing along the shorelines. Typically as water temperatures cool, plants begin to break apart, dislodge from the bottom and auto fragment. Plant debris resulting from cooler weather often drifts throughout the lake and eventually accumulates along the shoreline. This shoreline accumulation provides another excellent tool in evaluating lakewide macrophyte growth.

There were no milfoil plants noted along the surface waters rooted to the bottom. During the length of the survey, three small milfoil fragments were noted floating on the lakes surface. It was not possible to determine if these plants were generated from within the lake or carried into the area from boats or waters associated with the Columbia River. The only viable milfoil plants identified during the survey were located in and around the small cove located along the eastern shoreline (Figure #5). These plants were not erect in the water column but were positioned along the bottom substrate covered with dense elodea and filamentous algae growth. Further examination of the plants revealed that the growth was associated with older plant stems that were severely, negatively impacted by the 2,4-D. They had begun the decomposition process but were initiating new viable growth. This shoreline area was also the only one inspected that revealed milfoil plants sparsely mixed in with sizeable amounts of elodea and coontail debris that had windrowed along the shoreline. Elodea and coontail plants were dense along most of the lakes littoral zone.

At the time of the Diquat application the site treated was experiencing dense elodea growth up to the waters surface. The Diquat application reduced the surface mats but it was nearly impossible to identify the treated site from the rest of the lakes infestation. Over twenty five shoreline sites were inspected. All sites evaluated consisted of plant debris associated with elodea and coontail growth.

Figure #1

Myriophyllum spicatum Locations July 2006

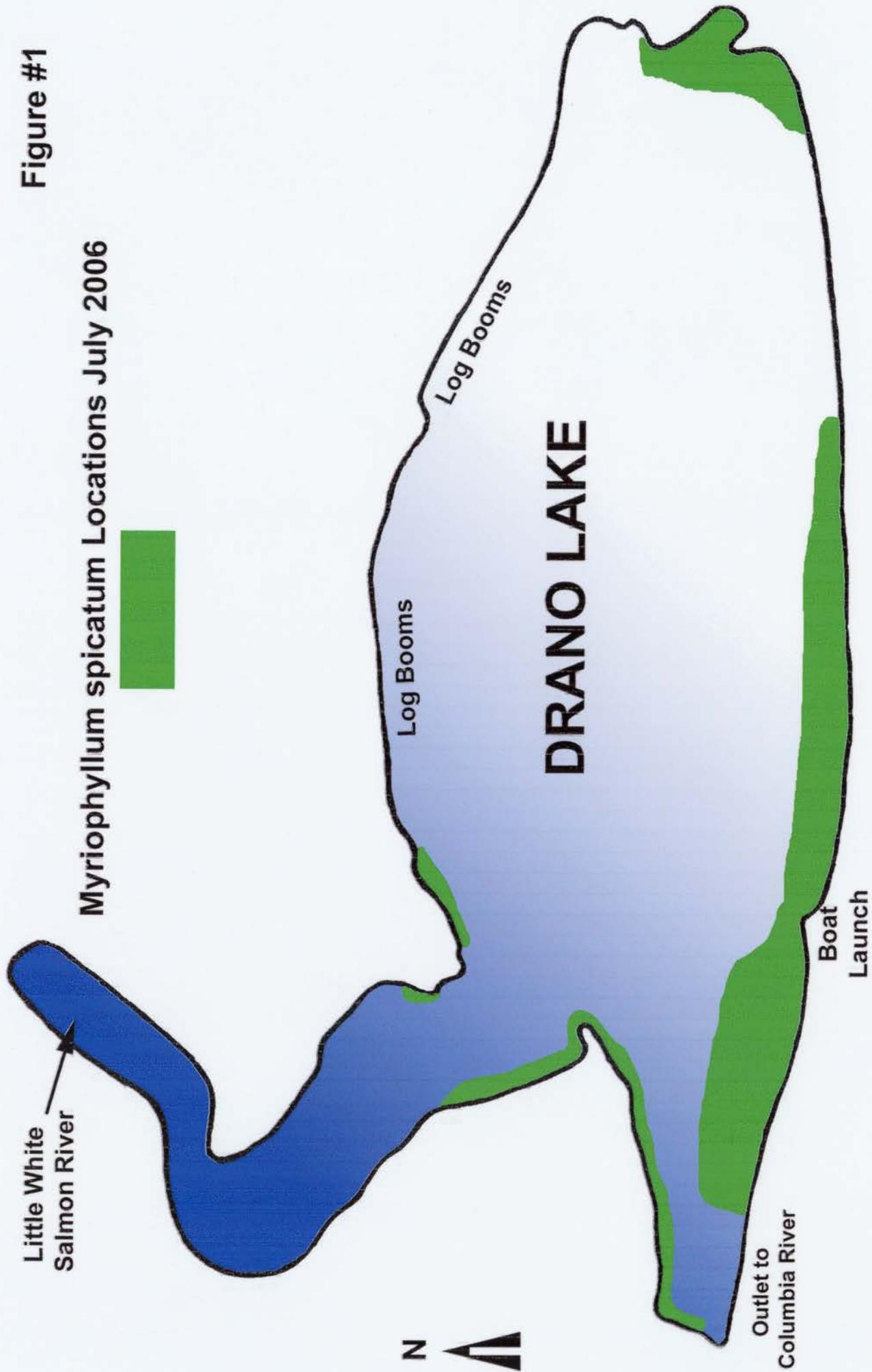


Figure #2

Non Milfoil Plant Locations  
July 2006

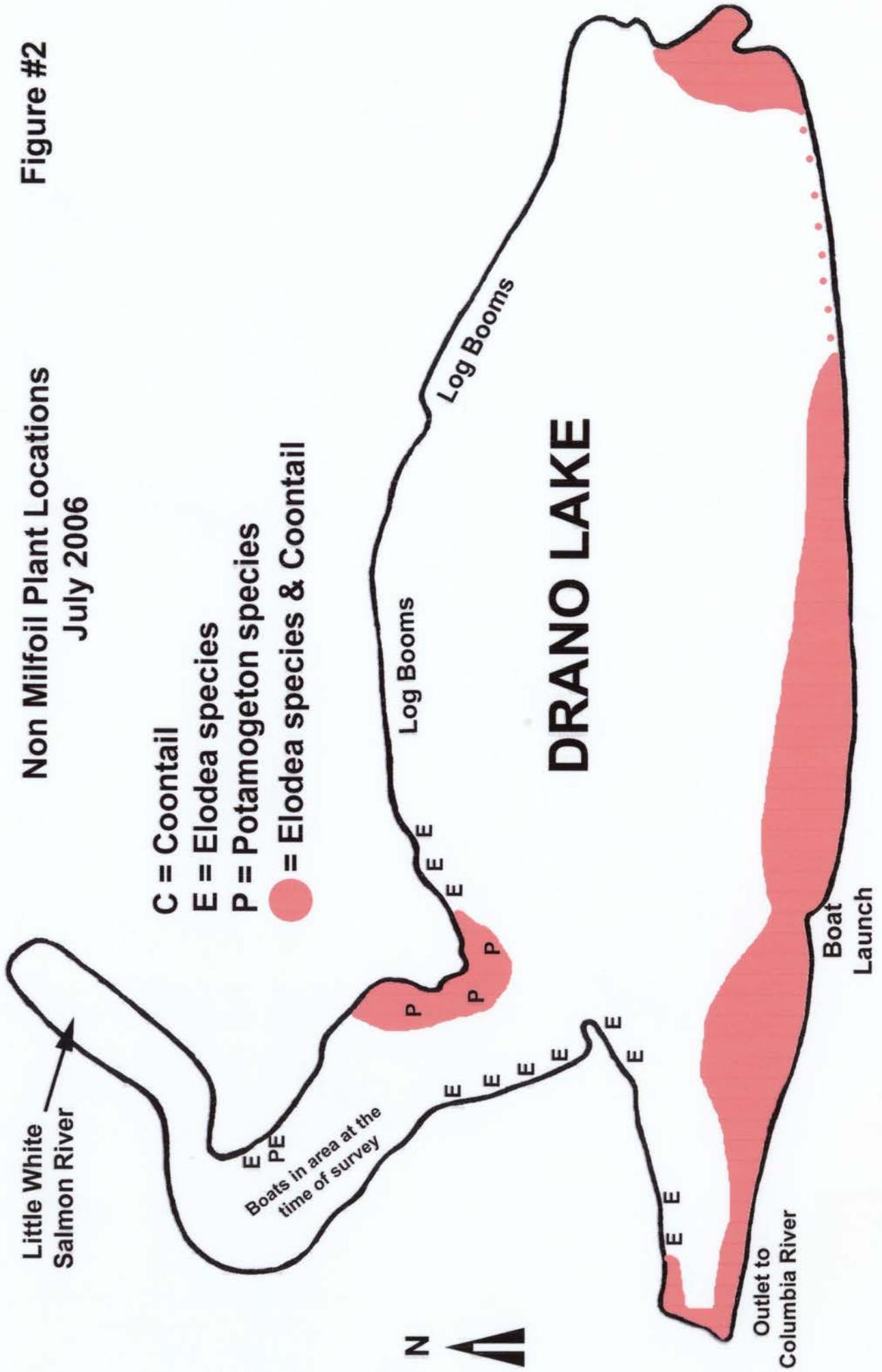


Figure #3

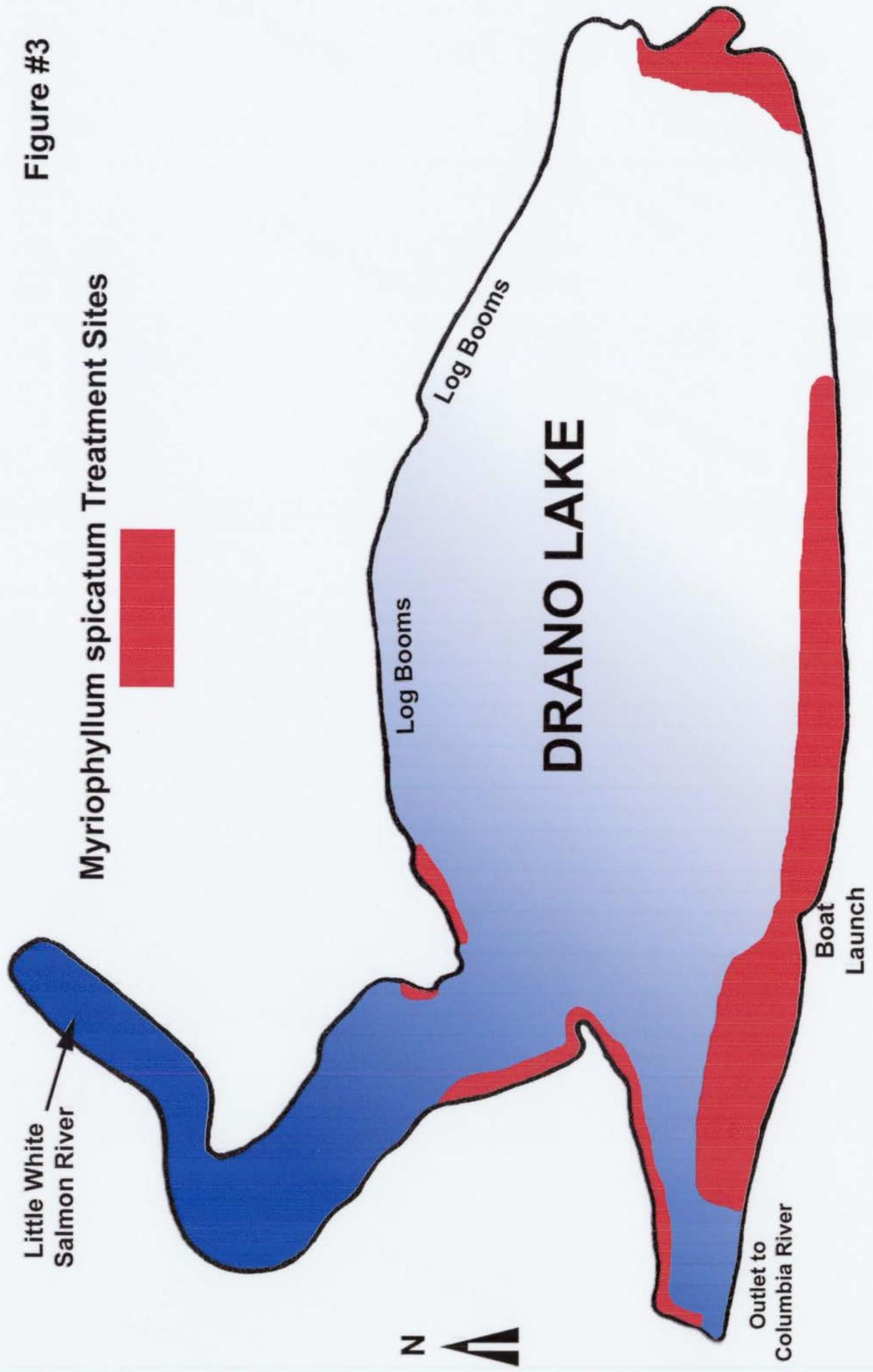


Figure #4

Native Elodea Treatment Site August 2006

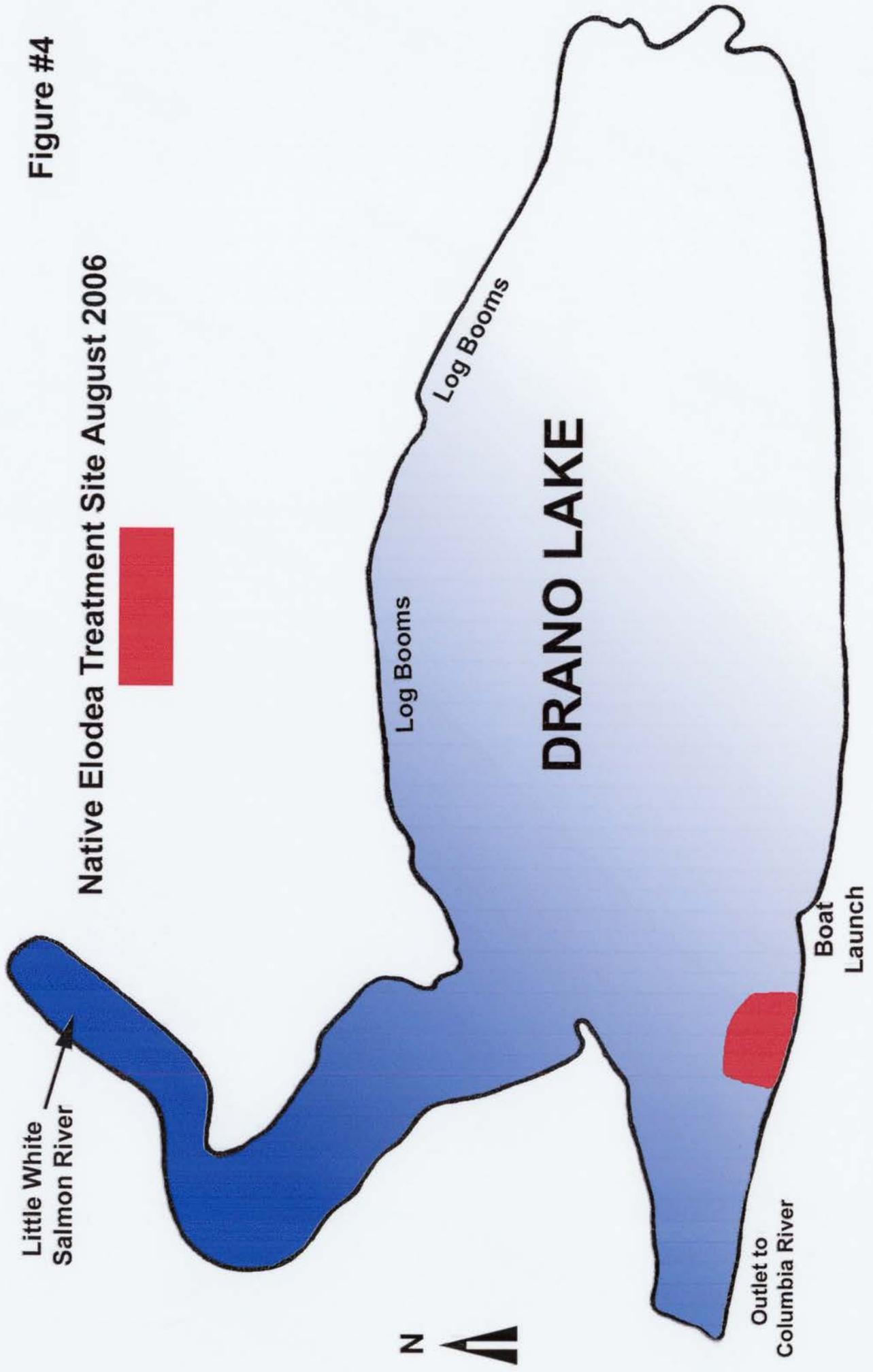
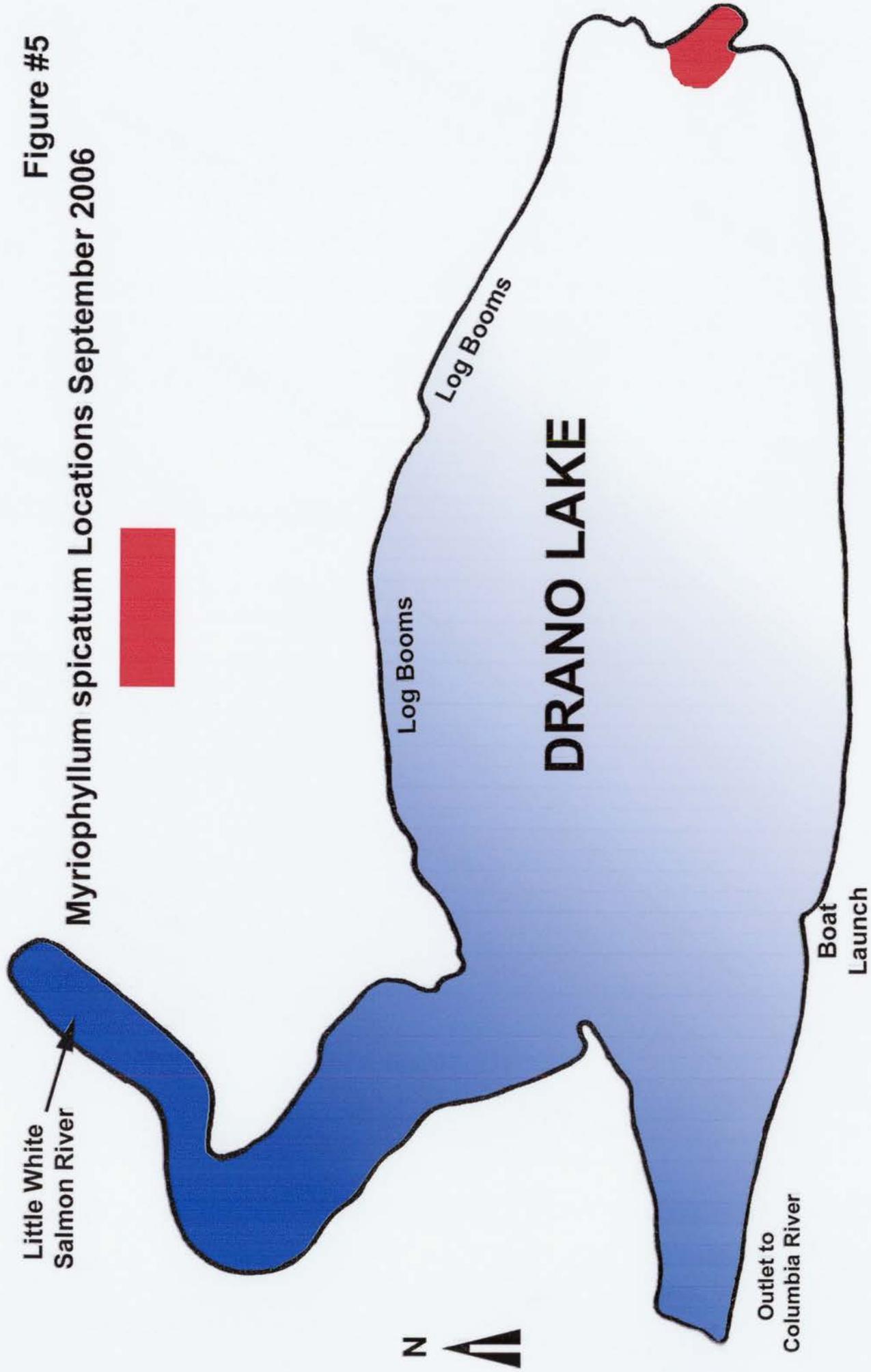


Figure #5

Myriophyllum spicatum Locations September 2006



# Specimen Label



# DMA\* 4 VM

## Herbicide

\*Trademark of Dow AgroSciences LLC

Contains Dimethylamine Salt of 2,4-D†

For selective control of many broadleaf weeds in, forests, non-cropland, non-crop turf, and aquatic areas. Also for control of trees by injection.

### Active Ingredient:

2,4-Dichlorophenoxyacetic acid, dimethylamine salt †	46.3%
Inert Ingredients	53.7%
Total Ingredients	100.0%

2,4-dichlorophenoxyacetic acid †† - 38.4% - 3.8 lb/gal  
†† Isomer Specific by AOAC Method No. 978.05 (15th Edition)

† Salts are the least volatile forms of 2,4-D and do not release enough vapors from treated areas to reduce yield of adjacent susceptible crops.

EPA Reg. No. 62719-3

Keep Out of Reach of Children

## DANGER PELIGRO

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

### Precautionary Statements

#### Hazards to Humans and Domestic Animals

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled or Absorbed Through The Skin.

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

## Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear
- **Note: For containers of over 1 gallon, but less than 5 gallons:** Mixer and loaders who do not use a mechanical system (such as probe and pump or spigot) to transfer the contents of this container must wear coveralls or chemical-resistant apron in addition to other required PPE.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

## Engineering Controls Statements

For containers of 5 gallons or more: A mechanical system (such as probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

When handlers use enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

## User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## First Aid

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 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 15-20 minutes. Call a poison control center or doctor for treatment advice.

**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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by 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.

**Note to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage.

### Environmental Hazards

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal area below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

**Mixing and Loading:** Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing and transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" elsewhere on this label.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

### Directions for Use

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

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**Entry Restrictions for Non-WPS Uses:** When this product is applied to non-cropland areas, non-crop turf, by tree injection method only in forest sites, and when applied in aquatic areas, do not allow people (other than applicator) or pets on treatment area during application. Do not enter into treated areas until sprays have dried.

### Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

**Storage:** Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. 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.

**Container Disposal (Metal):** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Container Disposal (Plastic containers 5-gals or less):** Triple rinse (or equivalent). Then dispose of in a sanitary landfill, or by incineration, or, if allowed by local authorities, by burning. If burned stay out of smoke.

**General:** Consult federal, state, or local disposal authorities for approved alternative procedures.

### General Information

DMA\* 4 IVM herbicide is intended for selective control of many broadleaf weeds in forests, non-cropland, non-crop turf areas, and aquatic areas.

Apply DMA 4 IVM as a water or oil-water spray during warm weather when target weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages recommended on this label will be satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher recommended rates. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for recommendations from this label that best fit local conditions.

### General Use Precautions and Restrictions

Be sure that use of DMA 4 IVM conforms to all application regulations.

**Chemigation:** Do not apply this product through any type of irrigation system.

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

## Avoiding Injury to Non-target Plants

Spray drift produced during application is the responsibility of the applicator and care should be taken to minimize off-target movement of spray during application. A drift control agent suitable for agricultural use may be used with this product to aid in reducing spray drift. If used, follow all use recommendations and precautions on the product label.

**Do not apply where drift may be a problem due to proximity to susceptible crops or other desirable broadleaf plants.** Do not apply DMA 4 IVM directly to, or otherwise permit contact with cotton, flowers, fruit trees, grapes, ornamentals, vegetables, or other desirable plants which are susceptible to 2,4-D herbicides. Do not permit spray mist containing 2,4-D to contact susceptible plants since even very small quantities of the spray, which may not be visible, can cause severe injury during both active growth or dormant periods. Do not use in greenhouses.

**Avoid Movement of Treated Soil:** Avoid conditions under which soil from treated areas may be moved or blown to areas containing susceptible plants. Wind-blown dust containing 2,4-D may produce visible symptoms when deposited on susceptible plants, however, serious plant injury is unlikely. To minimize potential movement of 2,4-D on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil is settled by rainfall or irrigation or irrigate soon after application.

Do not store or handle other agricultural chemicals with the same containers used for DMA 4 IVM. Do not apply other agricultural chemicals or pesticides with equipment used to apply DMA 4 IVM unless equipment has been thoroughly cleaned to remove all traces of 2,4-D.

## Spray Drift Management (Aerial Application)

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

In certain states, additional regulations may be applicable to aerial application of this product.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory Information section.

### Aerial Spray Drift Advisory Information

**Importance of Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversion section of this label).

### Controlling Droplet Size:

- **Volume**-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure**-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles**-Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation**-Orienting nozzles so that the spray is released backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type**-Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types.
- **Boom Length**-For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- **Application**-Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

**Temperature and Humidity:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** Applications should not occur during a low level temperature inversion, because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### Mixing

Mix DMA 4 IVM only with water, unless otherwise directed on this label. Add about half the water to the mixing tank, then add the DMA 4 IVM with agitation, and finally the rest of the water with continuing agitation.

**Note:** Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity to crops resulting in crop damage.

**Tank Mixing:** When tank mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, and geographic and other restrictions. Use in accordance with the most restrictive of label limitations and precautions. No label dosages should be exceeded. Do not tank mix this product with any product containing a label prohibition against tank mixing with 2,4-D.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

### Sprayer Clean-Out

To avoid injury to desirable plants, equipment used to apply this product should be thoroughly cleaned before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by application to treatment area or apply to non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 min). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

### Application

Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, use a spray volume of 3 or more gallons per acre by air and 10 or more gallons per acre for ground equipment. Where states have regulations which specify minimum spray volumes, they should be observed. In general, spray volume should be increased as crop canopy, height and weed density increase in order to obtain adequate spray coverage. **Do not apply less than 3 gallons total spray volume per acre.**

### Rate Ranges and Application Timing

Generally, the lower dosages given will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species and under conditions where control is more difficult, the higher dosages will be needed. Apply DMA 4 IVM during warm weather when weeds are young and actively growing.

### Spot Treatments

To prevent misapplication, spot treatments should be applied with a calibrated boom or with hand sprayers using a fixed spray volume per 1,000 sq ft as indicated below.

**Hand-Held Sprayers:** Hand-held sprayers may be used for spot applications of DMA 4 IVM. Care should be taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on the application rate for an area of 1,000 sq ft. Mix the amount of DMA 4 IVM (fl oz or ml) corresponding to the desired broadcast rate in 1 to 3 gallons of spray. To calculate the amount of DMA 4 IVM required for larger areas, multiply the table value (fl oz or ml) by the thousands of sq ft to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

**Rate Conversion Table for Spot Treatment:**

Label Broadcast Rate (pt/acre)							
1/2	2/3	3/4	1	2	3	4	8
Equivalent Amount of DMA 4 IVM per 1000 sq ft							
1/5	1/4	1/3	3/8	3/4	1	1 1/2	3
fl oz †	fl oz						
(5.5	(7.3	(8.3	(11	(22	(33	(44	(88
ml)	ml)	ml)	ml)	ml)	ml)	ml)	ml)

† Conversion factors: 1 fl oz = 29.6 (30) ml

## Weeds Controlled

### Annual or Biennial Weeds

Beggarticks †  
Bittercress, smallflowered  
bitterweed  
broomweed, common †  
burdock, common  
buttercup, smallflowered †  
carpetweed  
cinquefoil, common  
cinquefoil, rough  
cocklebur, common  
coffeeweed  
copperleaf, Virginia  
croton, Texas  
croton, woolly  
flixweed  
galinsoga  
geranium, Carolina  
hemp, wild  
horsetweed (maretail)  
jewelweed  
jimsonweed  
knotweed †  
kochia  
lambsquarters, common  
lettuce, prickly †  
lettuce, wild  
lupines  
mallow, little †  
mallow, Venice †  
marshelder  
momingglory, annual  
momingglory, ivy  
momingglory, woolly  
mousetail  
mustards (except blue mustard)  
parsnip, wild  
Pennycress, field  
Pepperweed †  
pigweeds (Amaranthus spp.) †  
poorjoe  
primrose, common  
purslane, common  
pusley, Florida  
radish, wild  
ragweed, common  
ragweed, giant  
rape, wild  
rocket, yellow  
salsify, common †  
salsify, western †  
shepherdspurse  
sicklepod  
smartweed (annual species) †  
sneezeweed, bitter  
sowthistle, annual  
sowthistle, spiny  
spanishneedles  
sunflower  
sweetclover  
tansymustard  
thistle, bull  
thistle, musk †  
thistle, Russian (tumbleweed) †  
velvetleaf  
vetches

### Perennial Weeds

Alfalfa †  
artichoke, Jerusalem †  
aster, many-flower †  
Austrian fieldcress †  
bindweed (hedge, field  
and European) †  
blue lettuce  
blueweed, Texas  
broomweed  
bullnettle †  
carrot, wild †  
catnip  
chicory  
clover, red †  
coffeeweed  
cress, hoary †  
dandelion †  
docks †  
dogbanes †  
goldenrod  
eveningprimrose, cutleaf  
garlic, wild †  
hawkweed, orange †  
healal  
ironweed, western  
ivy, ground †  
Jerusalem-artichoke  
loco, bigbend  
nettles (including stinging) †  
onion, wild †  
pennywort  
plantains  
ragwort, tansy †  
sowthistle, perennial  
thistle, Canada †  
vervains †  
waterplantain  
wormwood

† These weeds are only partially controlled and may require repeat applications and/or use of higher recommended rates of this product even under ideal conditions of application.

### Specific Use Directions

### Forestry, and Non-cropland, Uses

**Agricultural Use Requirements for Forest Use (Except Tree Injection Use):** For use in forests, follow PPE and Reentry instructions in the "Agricultural Use Requirements" section under the "Directions for Use" heading of this label.

**Agricultural Use Requirements for Forestry (Tree Injection Only) and Non-cropland Areas:** When this product is applied to non-cropland areas, non-crop turf, and by tree injection in forest sites, follow reentry requirements given in the "Non-Agricultural Use Requirements" section under the "Directions for Use" heading of this label.

## Forestry Uses

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Treatment Site Method of Application	DMA 4 IVM	Specific Use Directions
<b>Annual Weeds</b>	2 to 4 pt/acre	Apply when weeds are small and growing actively before the bud stage. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For difficult to control perennial broadleaf weeds and woody species, use up to 1 gallon DMA 4 IVM and 1 to 4 qt. Garlon® 3A herbicide per acre. For conifer release, make application in early spring before budbreak of conifers when weeds are small and actively growing.
<b>Biennial and perennial broadleaf weeds and susceptible woody plants</b>	4 to 8 pt/acre	
<b>Spot Treatment to control broadleaf weeds</b>	See Instructions for "Spot Treatment"	<b>Note:</b> To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the recommended broadcast rate and spray to thoroughly wet all foliage. See rate conversion table and instructions for "Spot Treatment" and use of hand-held sprayers under "Application".
<b>Conifer Release:</b> Species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir	1 1/2 to 3 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel, and willow, apply from mid to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground or air equipment, using sufficient spray volume to ensure complete coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
<b>Directed Spray:</b> Conifer plantations including pine	4 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage and injurious amounts of spray. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
<b>Basal Spray</b> (May also be used in noncropland)	8 qt/100 gal or	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems with the mixture may also aid in control.
<b>Surface of Cut Stumps</b> (May also be used in noncropland)	2.6 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with the 2,4-D mixture including cut surface, bark and exposed roots.
<b>Frill and Girdle</b> (May also be used in noncropland)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Treat freshly cut frills with as much of the 2,4-D mixture as they will hold.
<b>Tree Injection Application</b> (May also be used noncropland)	(1 to 2 ml per injection site)	To control unwanted hardwood trees such as elm, hickory, oak, and sweetgum in forests and other non-crop areas, apply by injecting at a rate of 1 ml of undiluted DMA 4 IVM per inch of trunk diameter at breast height (DBH) as measured approximately 4 1/2 ft above the ground. Make injections as close to the root collar as possible and the injection bit must penetrate the inner bark. Applications may be made throughout the year, but for best results apply between May 15 and October 15. Maples should not be treated during the spring sap flow. For hard to control species such as ash, maple, and dogwood use 2 ml of undiluted DMA 4 IVM per injection site or double the number of 1 ml injections. <b>Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.</b>

### Precautions and Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seed beds.
- For conifer release, do not use on plantations where pine or larch are among the desired species.
- For broadcast applications, do not apply more than 8.42 pt/acre of DMA 4 IVM (4.0 lb of acid equivalent) per 12 month period.

## Non-cropland Areas

Such as fencerows, hedgerows, roadsides, drainage ditches, rights-of way, utility power lines, railroads, airports, and other non-crop areas

Treatment Site Method of Application	DMA 4 IVM (pt/acre)	Specific Use Directions
Annual broadleaf weeds	2 to 4	Apply when annual weeds are small and growing actively before the bud stage.
Biennial and perennial broadleaf weeds and susceptible woody plants	4 to 8	Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 1 gallon DMA 4 IVM plus 1 to 4 qt. Garlon® 3A herbicide per acre. <b>For ground application:</b> (High volume) apply a total of 100 to 400 gal per acre; (low volume) apply a total of 10 to 100 gal per acre. <b>For helicopter:</b> Apply a total of 5 to 30 gal per acre spray volume.
Spot Treatment to control broadleaf weeds	See Instructions for "Spot Treatment"	<b>Note:</b> To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate recommended for this treatment site and spray to thoroughly wet all foliage. See rate conversion table and instructions for "Spot Treatment" and use of hand-held sprayers under "Application".
Tree Injection Application		See instructions for tree injection application in "Forestry Uses" section.
Southern wild rose Broadcast application	up to 4	Broadcast: Apply in a spray volume of 5 or more gallons per acre by aircraft or 10 or more gallons per acre by ground equipment.
Spot treatment	1 gal/100 gal of spray	Apply when foliage is well developed. Thorough coverage is required. Use 1 gallon of DMA 4 IVM plus 4 to 8 fluid ounces of an agricultural surfactant per 100 gallons of water. Two or more treatments may be required.

### Precautions and Restrictions:

- Do not apply to newly seeded areas until grass is well established.
- Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.
- Do not apply more than 8.42 pt/acre of DMA 4 IVM (4.0 lb of acid equivalent) per use season.
- Do not reapply to a treated area within 30 days of a previous application.
- If grazing of meat or dairy animals or hay harvest is desired in non-crop areas, do not apply more than 4.21 pt/acre of DMA 4 IVM (2.0 lb of acid equivalent) and do not harvest forage for hay within 7 days of application.

## Non-crop Turf Areas

Includes cemeteries and parks, airfields, roadsides, vacant lots, and drainage ditch banks

**Use Requirements for Ornamental Turf Areas:** When this product is applied to ornamental turf areas, follow PPE and reentry instructions in the "Non-agricultural Use Requirements" section of this label.

Treatment Site (Application Timing)	DMA 4 IVM (pt/acre)	Specific Use Directions
Ornamental Turf (Postemergence)		Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth.
Seedling grass (five-leaf stage or later)	3/4 to 1	Deep-rooted perennial weeds such as bindweed and Canada thistle may require repeat applications.
Well-established grasses	2 to 4	Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pt/acre. Cool season grasses are tolerant of higher rates.
Biennial and perennial broadleaf weeds	4	

### Precautions, Restrictions:

- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern grasses such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous ground covers. Legumes may be damaged or killed.
- Do not reapply within 21 days of a previous application.
- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and with fall application, reseed in the spring.
- Do not apply more than 2 broadcast applications per year per treatment site (does not include spot treatments).

## Aquatic Uses

**Use Requirements for Aquatic Areas:** When this product is applied to aquatic areas, follow PPE and reentry instructions in the "Non-agricultural Use Requirements" section of this label.

### Control of Weeds and Brush on Banks of Irrigation Canals and Ditches

Target Plants	DMA 4 IVM (pt/acre)	Specific Use Directions
Annual Weeds	2 to 4	<p>Apply using low pressure spray (10 to 40 psi) in a spray volume of 20 to 100 gallons per acre using power operated spray equipment. Apply when wind speed is low, 5 mph or less. Apply working upstream to avoid accidental concentration of spray into water. Cross-stream spraying to opposite banks is not permitted and avoid boom spraying over water surface. When spraying shoreline weeds, allow no more than 2 foot overspray onto water surface with an average of less than 1 foot of overspray to prevent significant water contamination.</p> <p>Apply when weeds are small and growing actively before the bud stage. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For hard-to-control weeds, a repeat application after 30 days at the same rate may be needed.</p> <p>For woody species and patches of perennial weeds, mix 1 gallon of DMA 4 IVM per 64 to 150 gallons of total spray. Wet foliage by applying about 3 to 4 gallons of spray per 1000 sq ft (10.5 X 10.5 steps).</p>
Biennial and perennial broadleaf weeds and susceptible wood plants	4	

**Restrictions and Limitations:**

- Do not apply more than 2 treatments per season or reapply within 30 days.
- Do not use on small canals (less than 10 cfs) where water will be used for drinking purposes.
- Do not apply more than 8.42 pt/acre (4.0 lb of acid equivalent) per use season.

### Aquatic Weed Control in Ponds, Lakes, Reservoirs, Marshes, Bayous, Drainage Ditches, Canals, Rivers and Streams that are Quiescent or Slow Moving, Including Programs of the Tennessee Valley Authority

**Notice to Applicators:** Before application, coordination and approval of local and state authorities may be required, either by letter or agreement or issuance of special permits for such use.

**Emergent and Floating Aquatic Weeds: Including Water hyacinth (*Eichornia crassipe*)**

**Application Rate:** 2 to 4 qt/acre.

**Specific Use Directions**

**Application Timing:** Spray weed mass only. Apply when water hyacinth plants are actively growing. Repeat application as necessary to kill regrowth and plants missed in previous operation. Use 4 qt/acre rate when plants are mature or when weed mass is dense.

**Surface Application:** Use power operated sprayers with boom or spray gun mounted on boat, tractor or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gallons of spray mixture per acre. Special precautions such as use of low pressure, large nozzles and spray thickening agents should be taken to avoid spray drift to susceptible crops. Follow label directions for use of any drift control agent.

**Aerial Application:** Use drift control spray equipment or thickening agent mixed in the spray mixture. Apply 1 gallon of DMA 4 IVM per acre using standard boom systems using a minimum spray volume of 5 gallons per acre. For Microfoil® drift control spray systems, apply DMA 4 IVM in a total spray volume of 12 to 15 gallons per acre.

**Submerged Aquatic Weeds: Including Eurasian Water Milfoil (*Myriophyllum spicatum*)**

Treatment Site	Maximum Application Rate <sup>1</sup>	Specific Use Directions
<b>Aquatic Weed Control in Ponds, Lakes, Reservoirs, Marshes, Bayous, Drainage Ditches, Canals, Rivers and Streams that are Quiescent or Slow Moving, Including Programs of the Tennessee Valley Authority</b>	2.84 gallons (10.8 lb of acid equivalent) per acre foot	<p><b>Application Timing:</b> For best results, apply in spring or early summer when aquatic weeds appear. Check for weed growth in areas heavily infested the previous year. A second application may be needed when weeds show signs of recovery, but no later than mid-August in most areas.</p> <p><b>Subsurface Application:</b> Apply DMA 4 IVM undiluted directly to the water through a boat mounted distribution system. Shoreline areas should be treated by subsurface injection application by boat to avoid aerial drift.</p> <p><b>Surface Application:</b> Use power operated boat mounted boom sprayer. If rate is less than 5 gallons per acre, dilute to a minimum spray volume of 5 gallons per surface acre.</p> <p><b>Aerial Application:</b> Use drift control spray equipment or thickening agents mixed with sprays to reduce drift. Apply through standard boom systems in a minimum spray volume of 5 gallons per surface acre. For Microfoil® drift control spray systems, apply DMA 4 IVM in a total spray volume of 12 to 15 gallons per acre. Apply to attain a concentration of 2 to 4 ppm (see table below).</p>

<sup>1</sup>DMA 4 IVM contains 3.8 lb of acid equivalent per gallon of product.

Amount to Apply to Attain a Concentration of 2 to 4 ppm			
Surface Area	Average Depth (ft)	2,4-D Acid Equivalent to Apply (lb/acre)	Amount of DMA 4 IVM to Apply (gal/acre)
1 acre	1	5.4 to 10.8	1.42 to 2.84
	2	10.8 to 21.6	2.84 to 5.68
	3	16.2 to 32.4	4.26 to 8.53
	4	21.6 to 43.2	5.68 to 11.37
	5	27.0 to 54.0	7.10 to 14.21

**Precautions and Restrictions for Aquatic Use:**

- Do not treat areas that are not infested with aquatic weeds.
- Do not exceed 10.8 lb of acid equivalent (2.84 gallons) per acre foot of treated water.
- Do not apply within 1500 ft of an active potable or irrigation water intake.
- **Wind Speed:** Do not apply when wind speed is at or above 10 mph when making ground or surface applications. Do not aerially apply when wind speed is greater than 5 mph. Wind speed restrictions do not apply for subsurface applications used in submerged aquatic weed control programs.
- **Dissolved Oxygen Ratio:** Fish require oxygen dissolved in water for life processes and a favorable water-oxygen ratio must be maintained. Decaying weeds use up dissolved oxygen in water. Fish kill resulting from decaying plant material can be prevented by: (1) treating the entire area when the weed mass is sparse and the rate of decomposition will not be sufficient to disturb the water-oxygen ratio; or (2) if application is delayed until there is a dense weed mass, treat no more than one-half of a lake or pond at one time. For large bodies of weed-infested water, apply product in lanes, leaving buffers strips at least 100 feet wide which can be treated in 4 to 5 weeks or when vegetation in treated lanes has decomposed. During the growing season, decomposition of treated strips will usually occur in 2 to 3 weeks.
- **Irrigation:** Unless an approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) acid or less, do not use water from treated areas for; (1) irrigation other than non-crop areas or those crops or plants labeled for direct application of 2,4-D; or (2) mixing sprays for agricultural or ornamental plants.
- **Potable Water:** Unless an approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) acid or less, do not use water from treated areas for potable water (drinking water).
- **Other Uses of Treated Water:** Except as stated above, there are no restrictions on use of water from treated areas for fishing, watering of livestock, or other domestic purposes.

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### **Warranty Disclaimer**

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Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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### **Inherent Risks of Use**

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It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

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### **Limitation of Remedies**

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The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

\*Trademark of Dow AgroSciences LLC  
**Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.**

EPA-accepted 10/13/2000

Label Code: D02-141-001

Initial Printing



PULL HERE TO OPEN ►

# REWARD®

## Landscape and Aquatic Herbicide

**TO PREVENT ACCIDENTAL POISONING, NEVER PUT INTO FOOD, DRINK, OR OTHER CONTAINERS, AND USE STRICTLY IN ACCORDANCE WITH ENTIRE LABEL.**

**DO NOT USE THIS PRODUCT FOR REFORMULATION.**

**Active Ingredient:**

Diquat dibromide [6,7-dihydrodipyrdo (1,2-a:2',1'-c) pyrazinediium dibromide] . . . . .	37.3%
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<b>Other Ingredients:</b> . . . . .	<b>62.7%</b>
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<b>Total:</b>	<b>100.0%</b>
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Contains 2 lbs. diquat cation per gal. as 3.73 lbs. salt per gal.

**KEEP OUT OF REACH OF CHILDREN.**

### WARNING/AVISO

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

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1091

EPA Est. 100-TX-001

Product of United Kingdom

Formulated in the USA

SCP 1091A-L2A 0503

131537

## 2.5 gallons

Net Contents



## Reward®

FIRST AID	
If swallowed	<ul style="list-style-type: none"><li>• Call a Poison Control Center or doctor immediately for treatment advice.</li><li>• Immediately give water or milk to drink and induce vomiting by inserting finger in throat.</li><li>• Do not induce vomiting or give anything by mouth to an unconscious person.</li><li>• Take person and product container to the nearest hospital or physician fast.</li><li>• PROMPT TREATMENT IS ESSENTIAL TO COUNTERACT POISONING and should be initiated before signs and symptoms of injury appear.</li></ul>
If on skin or clothing	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a Poison Control Center or doctor for treatment advice.</li></ul>
If in eyes	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a Poison Control Center or doctor for treatment advice.</li></ul>
If inhaled	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a Poison Control Center or doctor for further treatment advice.</li></ul>
<b>NOTE TO PHYSICIAN</b> CALL SYNGENTA MEDICAL EMERGENCY ASSISTANCE 1-800-888-8372 at any hour to obtain toxicology information and a diquat analysis. To be effective, treatment for diquat poisoning must begin IMMEDIATELY. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call 1-800-888-8372	

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

May be fatal if absorbed through skin. Harmful if swallowed or inhaled. Causes substantial, but temporary, eye injury. Causes skin irritation. Contact with irritated skin, or a cut, or repeated contact with intact skin may result in poisoning. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Do not feed forage from treated crops to livestock. Keep livestock and pets out of treated fields and crop areas.

#### Personal Protective Equipment (PPE)

##### Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants or coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

**Exception:** After this product has been diluted with at least 50 gallons of water, applicators for AQUATIC SURFACE APPLICATIONS must, at a minimum, wear (Note – Mixers and Loaders for this application method must still wear the Personal Protective Equipment (PPE) as described in the above section):

- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof gloves
- Protective eyewear

**Exception:** At a minimum, applicators for AQUATIC SUBSURFACE APPLICATIONS must wear (Note – Mixers and Loaders for this application method must still wear the Personal Protective Equipment (PPE) as described in the above section):

- Short-sleeved shirt and short pants
- Waterproof gloves
- Chemical-resistant footwear plus socks

## Reward®

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Control Statements

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Mixers, loaders, and applicators using closed systems who meet these requirements may wear: long-sleeved shirt and long pants, protective eyewear, waterproof gloves, shoes plus socks, and a chemical-resistant apron when mixing, loading, or cleaning equipment. If handling tasks are performed from inside an enclosed cab or aircraft with enclosed cockpits that meet these requirements may wear: long-sleeved shirt, long pants, shoes and socks for the labeling-specified PPE. All labeling-specified PPE must be immediately available for use in an emergency. All applicable requirements as specified in 40 CFR 170.240(d)(4-6) must be followed.

### User Safety Recommendations

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards (Terrestrial and Aquatic Uses)

This pesticide is toxic to aquatic invertebrates. For **Terrestrial Uses**, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters. For **Aquatic Uses**, do not apply directly to water except as specified on this label. Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds. This loss of oxygen may cause fish suffocation. Therefore, treat only  $\frac{1}{3}$  to  $\frac{1}{2}$  of the water body area at one time, especially if dense areas of weeds and/or algae exist, and wait 14 days between treatments.

Necessary approval and/or permits should be obtained prior to application if required. Consult the responsible State Agencies (i.e., Fish and Game Agencies or Department of Natural Resources) before making applications to public waters.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

Reward®

## DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

**DO NOT APPLY THIS PRODUCT THROUGH ANY TYPE OF IRRIGATION SYSTEM.**

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over short-sleeved shirt and short pants, or coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**Keep all unprotected persons out of operating areas or vicinity where there may be drift.**

**For terrestrial uses,** do not enter or allow entry of maintenance workers into treated areas, or allow contact with treated vegetation wet with spray, dew, or rain, without appropriate protective clothing until spray has dried.

**For aquatic uses,** do not enter treated areas while treatments are in progress.

## STORAGE AND DISPOSAL

### Prohibitions

Do not contaminate water, food, or feed by storage, disposal, or cleaning of equipment. Open dumping is prohibited.

### Storage

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, foodstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32°F. For help with any spill, leak, fire, or exposure involving this material, call 1-800-888-8372.

### Pesticide Disposal

Pesticide wastes are toxic. 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.

### Container Disposal

Do not reuse container. 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.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

## SPECIFIC USE DIRECTIONS

Reward Landscape and Aquatic Herbicide is a nonvolatile herbicidal chemical for use as a general herbicide to control weeds in noncrop and aquatic areas. Absorption and herbicidal action is usually quite rapid with effects visible in a few days. Reward Landscape and Aquatic Herbicide controls weeds by interfering with photosynthesis within green plant tissue. Weed plants should be succulent and actively growing for best results. Rinse all spray equipment thoroughly with water after use. Avoid Spray Drift to crops, ornamentals, and other desirable plants during application, as injury may result. Application to muddy water may result in reduced control. Minimize creating muddy water during application. Use of dirty or muddy water for Reward Landscape and Aquatic Herbicide dilution may result in reduced herbicidal activity. Avoid applying under conditions of high wind, water flow, or wave action.

### SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator and the grower.

The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

- The distance of the outermost nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they should be observed.

### Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See **Wind, Temperature and Humidity, and Temperature Inversions**).

### Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### Boom Length

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

### Application Height

Applications should not be made at a height greater than 10 ft. above the top of the target plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential.

**Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

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### Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### Sensitive Areas

The pesticide should only be applied when the wind is blowing away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

### COMMERCIAL GREENHOUSES AND NURSERIES

For general weed control in commercial greenhouses (beneath benches), (field grown and container stock), and other similar areas, Reward Landscape and Aquatic Herbicide may be applied preplant or postplant preemergence in field grown ornamental nursery plantings or postemergence as a directed spray. Reward Landscape and Aquatic Herbicide may also be applied preemergence in ornamental seed crops (U.S., except CA). Avoid contact with desirable foliage as injury may occur. Do not use on food or feed crops.

**Spot spray:** 1-2 qts. Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of water, or 0.75 oz. (22 mls.) Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water.

**Broadcast:** 1-2 pts. Reward Landscape and Aquatic Herbicide in a minimum of 15 gals. of water per acre. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of spray mixture. Use an adequate spray volume to insure good coverage.

### ORNAMENTAL SEED CROPS (FLOWERS, BULBS, ETC.) U.S., EXCEPT CA

For preharvest desiccation of ornamental seed crops. NOT FOR FOOD OR FIBER CROPS.

**Broadcast (Air or Ground):** 1.5-2 pts. Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per acre in sufficient water (minimum of 5 gals. by air; 15 gals. by ground) for desiccation and weed burndown. Repeat as needed at no less than 5-day intervals up to three applications. Do not use seed, screenings, or waste as feed or for consumption.

### DIRECTIONS FOR LANDSCAPE, INDUSTRIAL, RECREATIONAL, COMMERCIAL, RESIDENTIAL, AND PUBLIC AREAS

Reward Landscape and Aquatic Herbicide provides fast control of broadleaf and grassy weeds in industrial, recreational, golf course, commercial, residential, and public areas.

Reward Landscape and Aquatic Herbicide is a nonselective herbicide that rapidly kills undesirable above ground weed growth in 24-36 hours. Avoid application of Reward Landscape and Aquatic Herbicide to desirable plants.

Reward Landscape and Aquatic Herbicide is a contact/desiccant herbicide; it is essential to obtain complete coverage of the target weeds to get good control. Improper application technique and/or application to stressed weeds may result in unacceptable weed control. For best results, apply to actively growing, young weeds.

Difficult weeds (such as perennial or deeply-rooted weeds) can often be controlled by tank mixing Reward Landscape and Aquatic Herbicide with other systemic-type herbicides. Refer to other product labels for specific application directions.

For residual weed control, tank mix Reward Landscape and Aquatic Herbicide with a pre-emergent herbicide labeled for the intended use site. When mixing Reward Landscape and Aquatic Herbicide with another herbicide, it is recommended to mix just a small amount first to determine if the mixture is physically compatible before proceeding with larger volumes.

Syngenta has not tested all possible tank mixtures with other herbicides for compatibility, efficacy or other adverse effects. Before mixing with other herbicides Syngenta recommends you first consult your state experimental station, state university or extension agent.

**Grounds maintenance weed control:** Reward Landscape and Aquatic Herbicide can be used as a spot or broadcast spray to control weeds in public, commercial and residential landscapes, including landscape beds, lawns, golf courses and roadsides. Reward Landscape and Aquatic Herbicide can also be used for weed control around the edges and nonflooded portions of ponds, lakes and ditches.

**Trim and edge weed control:** Reward Landscape and Aquatic Herbicide can be used to eliminate undesired grass and broadleaf plant growth in a narrow band along driveways, walkways, patios, cart paths, fence lines, and around trees, ornamental gardens, buildings, other structures, and beneath noncommercial greenhouse benches. Vegetation control with Reward Landscape and Aquatic Herbicide is limited to the spray application width. Do not exceed the labeled rate of Reward Landscape and Aquatic Herbicide as excessive rates may result in staining of concrete-based materials.

Reward Landscape and Aquatic Herbicide, since it does not translocate systemically, can be used as an edging or pruning tool when precisely applied to select areas of grass or to undesirable growth on desirable ornamental bedding plants, ground covers, etc.

## Reward®

**Industrial weed control:** Reward Landscape and Aquatic Herbicide can be used as a spot or broadcast spray either alone or in combination with other herbicides as a fast burndown or control weeds in rights-of-ways, railroad beds/yards, highways, roads, dividers and medians, parking lots, pipelines, pumping stations, public utility lines, transformer stations and substations, electric utilities, storage yards, and other noncrop areas.

**Spot spray:** 1-2 qts. of Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of water, or 0.75 oz. (22 mls) Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water.

**Broadcast:** 1-2 pts. Reward Landscape and Aquatic Herbicide in a minimum of 15 gals. of water per acre. Add the labeled rate of 75% or greater nonionic surfactant per 100 gals. spray mixture. Use an adequate spray volume to insure good coverage. Greater water volumes are necessary if the target plants are tall and/or dense. It is recommended that 60 gals. or greater water volume be used to obtain good coverage of dense weeds.

### **Turf Renovation (All Turf Areas Except Commercial Sod Farms)**

To desiccate golf course turf and other turf areas prior to renovation, apply 1-2 pts. of Reward Landscape and Aquatic Herbicide per acre plus the labeled rate of a 75% or greater nonionic surfactant in 20-100 gals. of water (4 teaspoons of Reward Landscape and Aquatic Herbicide plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water) using ground spray equipment. Apply for full coverage and thorough contact with the turfgrass. Apply only when the turf is dry, free from dew and incidental moisture. For enhanced turf desiccation, especially in the case of thick turfgrass, water volumes should approach 100 gals. of water per acre.

For **suppression** of regrowth and quick desiccation of treated turfgrass, Reward Landscape and Aquatic Herbicide may be mixed with other systemic nonselective or systemic postemergence grassy weed herbicides. Refer to other product labels for specific application directions and restrictions.

Avoid spray contact with, or spray drift to, foliage of ornamental plants or food crops.

Do not graze livestock on treated turf or feed treated thatch to livestock.

### **DORMANT ESTABLISHED TURFGRASS (BERMUDAGRASS, ZOYSIAGRASS), NONFOOD OR FEED CROP**

For control of emerged annual broadleaf and grass weeds, including little barley\*, annual bluegrass, Bromes including rescuegrass, sixweeks fescue, henbit, buttercup, and Carolina geranium in established dormant bermudagrass lawns, parks, golf courses, etc.

Apply 1-2 pts. Reward Landscape and Aquatic Herbicide per acre in 20-100 gals. of spray mix by ground as a broadcast application. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of spray mixture.

Bermudagrass must be dormant at application. Application to actively growing bermudagrass may cause delay or permanent injury. Users in the extreme Southern areas should be attentive to the extent of dormancy at the time of application.

\*For control of little barley, apply Reward Landscape and Aquatic Herbicide prior to the mid-boot stage.

### **AQUATIC USE DIRECTIONS**

#### **New York – Not for Sale or Use in New York State without Supplemental Special Local Needs Labeling.**

Necessary approval and/or permits should be obtained prior to application if required. Consult the responsible State Agencies (i.e., Fish and Game Agencies or Department of Natural Resources). Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds. This loss of oxygen may cause fish suffocation. Therefore, treat only 1/3 to 1/2 of the water body area at one time and wait 14 days between treatments.

For application only to **still water** (i.e. ponds, lakes, and drainage ditches) where there is minimal or no outflow to public waters.

and/or

For applications to **public waters** in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds. For use by:

- Corps of Engineers; or
- Federal or State Public Agencies (i.e., Water Management District personnel, municipal officials); or
- Applicators and/or Licensees (certified for aquatic pest control) that are authorized by the State or Local government.

## Reward®

Treated water may be used according to the following table or until such time as an approved assay (example: PAM II Spectromatic Method) shows that the water does not contain more than the designated maximum contaminant level goal (MCLG) of 0.02 mg./l. (ppm) of diquat dibromide (calculated as the cation):

### Water Use Restrictions Following Applications With Reward Landscape And Aquatic Herbicide (Days)

Application Rate	Drinking	Fishing and Swimming	Livestock Consumption	Spray Tank Applications** and Irrigation to Turf and Ornamentals	Spray Tank Applications** and Irrigation to Food Crops
2 gals./surface acre	3 days	0	1 day	3 days	5 days
1 gal./surface acre	2 days	0	1 day	2 days	5 days
0.75 gal./surface acre	2 days	0	1 day	2 days	5 days
0.50 gal./surface acre	1 day	0	1 day	1 day	5 days
Spot Spray* (< 0.5 gal./surface acre)	1 day	0	1 day	1 day	5 days

\*Rates refer to total surface area.

\*\*For preparing agricultural sprays for food crops, turf or ornamentals (to prevent phytotoxicity), do not use water treated with Reward Landscape and Aquatic Herbicide before the specified time period.

When the contents of more than one spray tank is necessary to complete a single aquatic application, no water holding restrictions apply between the consecutive spray tanks.

No applications are to be made in areas where commercial processing of fish, resulting in the production of fish protein concentrate or fish meal, is practiced. Before application, coordination and approval of local and/or State authorities must be obtained.

### Apply Reward Landscape and Aquatic Herbicide in Accordance With the Following Table

Weed Species	Subsurface or Bottom Placement Gals./Surface Acre*	Surface Gals./Surface Acre*
Bladderwort ( <i>Utricularia</i> spp.)	1-2	2
Coontail ( <i>Ceratophyllum demersum</i> )	2	2
Elodea ( <i>Elodea</i> spp.)	2	2
Naiad ( <i>Najas</i> spp.)	1-2	2
Pondweeds <sup>1</sup> ( <i>Potamogeton</i> spp.)	2	2
Watermilfoils ( <i>Myriophyllum</i> spp.)	1-2	2
Hydrilla ( <i>Hydrilla verticillata</i> )	2	2
Waterlettuce <sup>2</sup> ( <i>Pistia stratiotes</i> )	NA	0.5 - 0.75
Waterhyacinth <sup>2</sup> ( <i>Eichhornia crassipes</i> )	NA	0.5 - 0.75
Pennywort <sup>3</sup> ( <i>Hydrocotyle</i> spp.)	NA	0.5 - 0.75
Frog's Bit <sup>6</sup> ( <i>Limnobium spongia</i> )	NA	0.5 - 0.75
Salvinia <sup>2</sup> ( <i>Salvinia</i> spp.)	NA	0.5 - 0.75
Duckweed <sup>4</sup> ( <i>Lemna</i> spp.)	NA	1
Cattails <sup>3</sup> ( <i>Typha</i> spp.)	NA	1-2
Algae <sup>5</sup> ( <i>Spirogyra</i> spp. & <i>Pithophora</i> spp.)	1-2	2

\*For water less than or equal to 2 ft. in average depth of treatment area, use a maximum of 1 gal. Reward Landscape and Aquatic Herbicide per surface acre. Lowest rates should be used in shallow areas where the water depth is considerably less than the average depth of the entire treatment area, for example, shallow shoreline areas. At water temperatures below 50°-60°F, efficacy and immediacy of results may be reduced.

<sup>1</sup>Reward Landscape and Aquatic Herbicide controls *Potamogeton* species except Richardson's pondweed (*P. richardsonii*). For control of *P. robbinsii*, applications must be made when the plants are in the early stages of growth such as in Spring and early Summer.

<sup>2</sup>For salvinia, waterlettuce, and water hyacinth, use the labeled rate of Reward Landscape and Aquatic Herbicide in 75-200 gals. water plus the labeled rate of a 75% or greater nonionic surfactant per acre for surface sprays, and for aerial application for waterlettuce and water hyacinth control, apply the labeled rate of Reward Landscape and Aquatic Herbicide in 10-24 gals. of water plus the labeled rate of a 75% or greater nonionic surfactant per acre.

<sup>3</sup>For pennywort and cattail control, apply in 50-150 gals. of water plus the labeled rate of a 75% or greater nonionic surfactant per acre for full coverage and thorough weed contact. Repeat treatments may be necessary to control regrowth. For best results, apply before flowering (cattail).

## Reward®

<sup>4</sup>For duckweed control, apply as an overall spray in 50-150 gals. of water plus the labeled rate of a 75% or greater nonionic surfactant per acre. Retreatment may be necessary for plants missed in previous applications and regrowth.

<sup>5</sup>For suppression of certain filamentous algae species including *Spirogyra* and *Pithophora*, apply according to the submersed use directions.

<sup>6</sup>Not for use in California.

**Application:** In mixed weed populations, use the high rate of application as indicated by weeds present.

**Subsurface Applications:** Where the submersed weed growth, especially hydrilla, has reached the water surface, apply either in a water carrier or an invert emulsion through boom trailing hoses carrying nozzle tips to apply the dilute spray below the water surface to insure adequate coverage.

**Bottom Placement:** Where the submersed weeds, especially hydrilla, bladderwort, and coontail growth, have reached the water surface or where water is slowly moving through the submersed weed growth that has reached the water surface, especially hydrilla, bladderwort, and coontail, control may be enhanced when applied in an invert emulsion carrier injecting diluted Reward Landscape and Aquatic Herbicide near the bottom with weighted hoses. The addition of a copper-based algaeicide will improve control. Where algae are present along with the submersed weeds, pretreatment with copper-based algaeicide at recommended rates is advised for best results.

**Surface Application:** For submersed aquatic weeds, apply Reward Landscape and Aquatic Herbicide either as concentrate slowly poured directly from the container in strips or as a spray in sufficient carrier. Applications should be made to ensure complete coverage of the weed areas. In mixed weed populations, use the high rate of application as indicated by weeds present.

**if posting is required by your state or tribe – consult the agency responsible for pesticide regulations for specific details.**

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For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.
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Product of United Kingdom  
Formulated in the USA

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
www.syngenta-us.com

**SCP 1091A-L2A 0503  
131537**

Reward®



## Landscape and Aquatic Herbicide

**TO PREVENT ACCIDENTAL POISONING, NEVER PUT INTO FOOD, DRINK, OR OTHER CONTAINERS, AND USE STRICTLY IN ACCORDANCE WITH ENTIRE LABEL.**

**DO NOT USE THIS PRODUCT FOR REFORMULATION.**

Active Ingredient:	
Diquat dibromide [6,7-dihydrodipyrido (1,2-a:2',1'-c)pyrazinedium dibromide]	37.3%
Other Ingredients:	62.7%
Total:	100.0%

Contains 2 lbs. diquat cation per gal. as 3.73 lbs. salt per gal.

See directions for use in attached booklet.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

EPA Reg. No. 100-1091  
EPA Est. 100-TX-001

Product of United Kingdom  
Formulated in the USA

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Syngenta Crop Protection, Inc.  
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SCP 1091A-L2A 0503  
131537

**2.5 gallons**  
Net Contents

## KEEP OUT OF REACH OF CHILDREN. WARNING/AVISO

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

### FIRST AID

**If swallowed:** Call a Poison Control Center or doctor immediately for treatment advice. Immediately give water or milk to drink and induce vomiting by inserting finger in throat. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest hospital or physician fast. **PROMPT TREATMENT IS ESSENTIAL TO COUNTERACT POISONING** and should be initiated before signs and symptoms of injury appear.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a Poison Control Center or doctor for treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. 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.

**NOTE TO PHYSICIAN: CALL SYNGENTA MEDICAL EMERGENCY ASSISTANCE 1-800-888-8372** at any hour to obtain toxicology information and a diquat analysis. To be effective, treatment for diquat poisoning must begin **IMMEDIATELY**. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER:** For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call 1-800-888-8372.

## Precautionary Statements

Hazards to Humans and Domestic Animals

### WARNING/AVISO

May be fatal if absorbed through skin. Harmful if swallowed or inhaled. Causes substantial, but temporary, eye injury. Causes skin irritation. Contact with irritated skin, or a cut, or repeated contact with intact skin may result in poisoning. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Do not feed forage from treated crops to livestock. Keep livestock and pets out of treated fields and crop areas.

### Environmental Hazards (Terrestrial and Aquatic Uses)

This pesticide is toxic to aquatic invertebrates. For **Terrestrial Uses**, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters. For **Aquatic Uses**, do not apply directly to water except as specified on this label. Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds. This loss of oxygen may cause fish suffocation. Therefore, treat only 1/3 to 1/2 of the water body area at one time, especially if dense areas of weeds and/or algae exist, and wait 14 days between treatments.

Necessary approval and/or permits should be obtained prior to application if required. Consult the responsible State Agencies (i.e., Fish and Game Agencies or Department of Natural Resources) before making applications to public waters.

## STORAGE AND DISPOSAL

### Prohibitions

Do not contaminate water, food, or feed by storage, disposal, or cleaning of equipment. Open dumping is prohibited.

### Container Disposal

Do not reuse container. 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.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**



Syngenta Crop Protection, Inc.  
Post Office Box 18300  
Greensboro, NC 27419

In Case of Emergency, Call  
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **REWARD LANDSCAPE AND AQUATIC HERBICIDE** Product No.: A12872A  
EPA Signal Word: Warning  
Active Ingredient(%): Diquat dibromide (37.3%) CAS No.: 85-00-7  
Chemical Name: [6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediium dibromide]  
Chemical Class: Bipyridilium (dipyridilium) contact herbicide  
EPA Registration Number(s): 100-1091 Section(s) Revised: 2, 11

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Diquat dibromide (37.3%)	Not Established	0.5 mg/m <sup>3</sup> TWA (inhalable); 0.1 mg/m <sup>3</sup> TWA (respirable), skin	0.5 mg/m <sup>3</sup> TWA (0.5 total; 0.08 respirable)***	No

\*\*\* Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
Syngenta Hazard Category: B

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause eye irritation. Harmful if inhaled, swallowed or absorbed through the skin.

Hazardous Decomposition Products

Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10.  
Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Dark brown liquid  
Odor: Odorless

Unusual Fire, Explosion and Reactivity Hazards

This product may form flammable and explosive hydrogen gas when in contact with aluminum.  
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so

after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** 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 Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

#### Notes to Physician

To be effective, treatment for ingestion of the product must begin IMMEDIATELY. Treatment consists of binding the active ingredient, diquat, in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.

#### Medical Condition Likely to be Aggravated by Exposure

None known.

### **5. FIRE FIGHTING MEASURES**

#### Fire and Explosion

Flash Point (Test Method):	Not Applicable	
Flammable Limits (% in Air):	Lower: % Not Applicable	Upper: % Not Applicable
Autoignition Temperature:	Not Applicable	
Flammability:	Not Applicable	

#### Unusual Fire, Explosion and Reactivity Hazards

This product may form flammable and explosive hydrogen gas when in contact with aluminum. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

#### In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

### **6. ACCIDENTAL RELEASE MEASURES**

#### In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

### **7. HANDLING AND STORAGE**

This product reacts with aluminum to produce flammable hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Dark brown liquid
- Odor: Odorless
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.20 g/ml @ 68°F (20°C)
- pH: 4 - 6

### Solubility in H<sub>2</sub>O

Diquat dibromide: 718,000 mg/l @ 68°F (20°C) and pH 7.2

### Vapor Pressure

Diquat dibromide: < 10(-8) mmHg @ 77°F (25°C)

## 10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: Concentrate should not be stored in aluminum containers. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
- Materials to Avoid: Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Corrosive to aluminum.
- Hazardous Decomposition Products: Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10.  
Can decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Slightly Toxic  
Oral (LD50 Female Rat) : = 886 mg/kg body weight
- Dermal: Practically Non-Toxic  
Dermal (LD50 Rat) : > 5,050 mg/kg body weight
- Inhalation: Slightly Toxic  
Inhalation (LC50 Rat) : = 0.62 mg/l air - 4 hours
- Eye Contact: Irritant
- Skin Contact: Slightly Irritating (Rabbit)
- Skin Sensitization: Not a Sensitizer (Guinea Pig)

### Reproductive/Developmental Effects

- Diquat dibromide: Mutagenicity: No evidence in in vivo assays.  
Development Toxicity: In rabbit studies a small percentage of fetuses had minor defects at 3 and

10 mg ion/kg/d.

Chronic/Subchronic Toxicity Studies

Diquat dibromide: Kidney weight decreases and cataracts seen in dogs at 12.5 mg ion/kg/d.  
No evidence for neurotoxic effects in rats dosed up to 400 ppm ion in the diet for 13 weeks.

Carcinogenicity

Diquat dibromide: No evidence of carcinogenicity in rat and mouse studies.

Other Toxicity Information

None

Toxicity of Other Components

Not Applicable

Target Organs

Active Ingredients

Diquat dibromide: Eye, kidney

Inert Ingredients

: Not Applicable

**12. ECOLOGICAL INFORMATION**

Summary of Effects

Diquat dibromide:

This material is slightly toxic to fish. Toxic to invertebrates and birds. Practically non-toxic to bees.

Eco-Acute Toxicity

Diquat dibromide: Bees LC50/EC50 47 - 100 ug/bee  
Invertebrates (Water Flea) LC50/EC50 0.77 - 1.19 ppm  
Fish (Trout) LC50/EC50 14.8 ppm  
Fish (Bluegill) LC50/EC50 13.9 ppm  
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 106 ppm  
Birds (8-day dietary - Mallard Duck) LC50/EC50 980 ppm

Eco-Chronic Toxicity

Diquat dibromide: Not Available

Environmental Fate

Diquat dibromide:

The information presented here is for the active ingredient, diquat dibromide.  
Stable in soil and water. Immobile in soil. Sinks in water (after 24 h).

**13. DISPOSAL CONSIDERATIONS**

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

**14. TRANSPORT INFORMATION**

DOT Classification

Ground Transport - NAFTA  
Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)  
Hazard Class or Division: Class 8

Identification Number: UN 1760

Packing Group: PG III

B/L Freight Classification

Herbicides, NOIBN

Comments

Water Transport - International

Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)

Hazard Class or Division: Class 8

Identification Number: UN 1760

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)

Hazard Class or Division: Class 8

Identification Number: UN 1760

Packing Group: PG III

Packing Instructions: Passenger - 818, Cargo 820

Packaging Limitations: Inner packages over 5 liters and single packages over 60 liters cannot be shipped by cargo aircraft; Inner packages over 2.5 liters and outer packages over 5 liters cannot be shipped by passenger aircraft.

**15. REGULATORY INFORMATION**

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard  
Chronic Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

None

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills >= 268 gal. (based on diquat [RQ = 1,000 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

**16. OTHER INFORMATION**

NFPA Hazard Ratings

Health: 2  
Flammability: 1  
Instability: 0

HMIS Hazard Ratings

Health: 2  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 04/11/2002

Revision Date: 06/21/2005

Replaces: 11/09/2004

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 2/8/01  
Product Code: 84631  
MSDS: 000246

## DMA\* 4 IVM HERBICIDE

### 1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: DMA\* 4 IVM Herbicide

#### COMPANY IDENTIFICATION:

Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

2,4-D Dimethylamine Salt:	CAS# 002008-39-1	46.3%
2,4-Dichlorophenoxyacetic Acid, Dimethylamine Salt		
Other Ingredients, Total, Including Dimethylamine	CAS# 000124-40-3	53.7%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### 3. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Hazardous chemical. Brown liquid with an amine odor. May cause severe eye irritation with corneal injury. The LD<sub>50</sub> for skin absorption in rabbits is >1000 mg/kg. The oral LD<sub>50</sub> for rats is ~1000 mg/kg.

**EMERGENCY PHONE NUMBER: 800-992-5994**

**POTENTIAL HEALTH EFFECTS:** This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

**EYE:** May cause severe irritation with corneal injury, which may result in permanent impairment of vision, even blindness.

**SKIN:** Essentially non-irritating to skin. A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >1000 mg/kg.

**INGESTION:** Single dose oral toxicity is low. The oral LD<sub>50</sub> for rats is ~1000 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

\*Trademark of Dow AgroSciences

**INHALATION:** Single exposure to vapors is not likely to be hazardous.

#### SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

Excessive exposure may cause liver, kidney, and gastrointestinal and muscular effects. Signs and symptoms of excessive exposure may be nausea, vomiting, abdominal cramps, or diarrhea.

**CANCER INFORMATION:** 2,4-Dichlorophenoxyacetic acid did not cause cancer in laboratory animal studies.

**TERATOLOGY (BIRTH DEFECTS):** Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

**REPRODUCTIVE EFFECTS:** Excessive dietary levels of 2,4-D acid have caused decreased weight and survival in offspring in a rat reproduction study.

### 4. FIRST AID:

**EYES:** Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

**SKIN:** Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Destroy and dispose of contaminated leather items (i.e. shoes, belts, or watchbands).

**INGESTION:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**INHALATION:** Remove to fresh air if effects occur. Consult a physician.

**NOTE TO PHYSICIAN:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 2/8/01  
Product Code: 84631  
MSDS: 000246

## DMA\* 4 IVM HERBICIDE

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** 190°F (88°C)  
**METHOD USED:** TCC  
**FLAMMABLE LIMITS**  
LFL: Not determined  
UFL: Not determined

**EXTINGUISHING MEDIA:** Water fog

**FIRE & EXPLOSION HAZARDS:** Noxious fumes may be produced under fire conditions. Contain water from fire fighting to prevent entry to surface or ground water.

**FIRE-FIGHTING EQUIPMENT:** Wear positive pressure, self-contained breathing apparatus and full protective equipment.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Absorb small spills in an absorbent material such as sawdust, sand or clay. Dike area of large spills and call Dow AgroSciences at 800-992-5994. Wear protective clothing and self-contained breathing apparatus if vapors are present. Do not use water to clean up.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Harmful if swallowed or absorbed through skin. Causes severe eye irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Keep container tightly closed when not in use. Do not store below temperature of 25°F (-4°C). If frozen (crystallized), warm to 65-75°F (19-2°C) and re-dissolve before using by rolling or shaking the container. Store in a safe manner in original container only, in a cool, dry place. Reduce stacking height where local conditions can affect packaging strength. See product label for handling/storage precautions relative to the end use of this product.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

#### EXPOSURE GUIDELINE:

2,4-D Dimethylamine Salt: None established; ACGIH TLV and OSHA PEL are 10 mg/M<sup>3</sup> for the acid.

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

#### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS:

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator for organic vapors.

**SKIN PROTECTION:** Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, faceshield, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin areas with soap and water, and launder clothing before reuse. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed, destroyed and disposed of.

**EYE/FACE PROTECTION:** Use chemical goggles. Eye wash fountain should be located in immediate work area.

**APPLICATORS AND ALL OTHER HANDLERS:** Refer to the product label for personal protective clothing and equipment.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 2/8/01  
Product Code: 84631  
MSDS: 000246

## DMA\* 4 IVM HERBICIDE

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**BOILING POINT:** >212°F (100°C)  
**VAPOR PRESSURE:** 8.0 x 10<sup>-10</sup> mmHg @ 25°C  
**VAPOR DENSITY:** <1 water vapor  
**SOLUBILITY IN WATER:** Infinite  
**SPECIFIC GRAVITY:** 1.17 approx. @ 68/68°F (20°C)  
**APPEARANCE:** Brown liquid  
**ODOR:** Amine

### 10. STABILITY AND REACTIVITY:

**STABILITY: (CONDITIONS TO AVOID)** Stable under normal storage conditions. Avoid excessive heat.

**INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)**  
Acids and oxidizing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen chloride and nitrogen oxide under fire conditions.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):**  
In-vitro mutagenicity studies were negative. For 2,4-D acid: animal mutagenicity studies were predominantly negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

No bioconcentration is expected because of the relatively high water solubility.

#### DEGRADATION AND PERSISTENCE:

Biodegradation under aerobic static laboratory conditions is high (BOD<sub>20</sub> or BOD<sub>28</sub>/ThOD >40%).

5-Day biochemical oxygen demand (BOD<sub>5</sub>) is 0.47 p/p.

10-Day biochemical oxygen demand (BOD<sub>10</sub>) is 0.50 p/p.

20-Day biochemical oxygen demand (BOD<sub>20</sub>) is 0.57 p/p.

### ECOTOXICOLOGY:

Material is practically non-toxic to aquatic organisms on an acute basis (LC<sub>50</sub> is >100 mg/L in most sensitive species). Acute LC<sub>50</sub> in fathead minnow (*Pimephales promelas*) is 707 mg/L.

Acute LC<sub>50</sub> in pink shrimp (*Penaeus duorarum*) is >1000 mg/L.

Acute LC<sub>50</sub> in rainbow trout (*Oncorhynchus mykiss*) is 377 mg/L.

Acute LC<sub>50</sub> in bluegill (*Lepomis macrochirus*) is 387 mg/L. Dietary LC<sub>50</sub> in bobwhite (*Colinus virginianus*) is >4640 mg/L.

Dietary LC<sub>50</sub> in mallard (*Anas platyrhynchos*) is >4640 mg/L.

### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** Wastes are toxic. Improper disposal of excess waste, spray mixture, or rinsate is a violation of federal law and may contaminate groundwater. 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.

### 14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product-shipping papers, or contact your Dow AgroSciences representative.

### 15. REGULATORY INFORMATION:

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

The information herein is given in good faith, and no warranty, express or implied, is made. Consult Dow AgroSciences for further information.

State of Washington  
Department of Agriculture  
Olympia, Washington 98504

## PESTICIDE APPLICATION RECORD (Version 3)

**NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)**

1. **Date of Application-Year:** 2006 **Month:** July **Date:** 31 **Time:** 7:30

2. **Name of person for whom the pesticide was applied:** Skamania County

**Firm Name (if applicable):**

**Street Address:** **City:**

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling

**Firm Name):** Northwest Aquatic Eco-Systems  
855 Trospen Road SW 108- #313  
Tumwater, WA. 98512  
360-357-3285

**License #** 375

4. **Name of person who applied the pesticide (if different than #3 above):**

**License No(s). if applicable:**

5. **Application Crop or Site:** Drano Lake, Skamania County

6. **Total Area Treated (acre, sq. ft., etc.):** 53 acres

7. **Was this application made as a result of a WSDA Permit ?** No

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
DMA 4IVM	62719-3	1072 gallons	2.84 gals/ac ft.	4 ppm

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Drano Lake, Skamania County Stevenson Washington

10. Date: 7-31-06

11. Name of person making application: Douglas Dorling

12. License No: 375

13. Apparatus License. Plate No.: D-029

14. Start: 7:30

Stop: 8:00

15. Acres completed : 53

16. Wind Direction: S

Wind Velocity: 0-15

17. Temperature: 84

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T3N

Range: E OR W (please indicate) 09E

Section(s): 26

County: Skamania

**PLEASE NOTE:**

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

State of Washington  
Department of Agriculture  
Olympia, Washington 98504

## PESTICIDE APPLICATION RECORD (Version 3)

**NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)**

1. **Date of Application-Year:** 2006 **Month:** August **Date:** 07 **Time:** 8:00

2. **Name of person for whom the pesticide was applied:** Skamania County

**Firm Name (if applicable):**

**Street Address:** **City:**

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling

**Firm Name):** Northwest Aquatic Eco-Systems  
855 Trospen Road SW 108- #313  
Tumwater, WA. 98512  
360-357-3285

**License #** 375

4. **Name of person who applied the pesticide (if different than #3 above):**

**License No(s). if applicable:**

5. **Application Crop or Site:** Drano Lake, Skamania County

6. **Total Area Treated (acre, sq. ft., etc.):** 11 acres

7. **Was this application made as a result of a WSDA Permit ?** No

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
Reward (Diquat)	100-1091	22 gallons	2 gals/surface ac..	

**9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Drano Lake, Skamania County Stevenson Washington**

**10. Date: 9-07-06**

**11. Name of person making application: Douglas Dorling**

**12. License No: 375**

**13. Apparatus License. Plate No.: D-029**

**14. Start: 9:00**

**Stop: 11:00**

**15. Acres completed : 22**

**16. Wind Direction: S**

**Wind Velocity: 0-15**

**17. Temperature: 80**

**Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):**

**Township: T3N**

**Range: E OR W (please indicate) 09E**

**Section(s): 26**

**County: Skamania**

**PLEASE NOTE:**

**The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.**