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| **Table 1. Treatment Response of Common Aquatic Plants to Registered Herbicides**  **EWF-004**  **Revised November 2013** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |  | | | | |  |
|  |  | | | |  | | |  | | |  | | |  | | |  | | |  | |  | |  | | |  | | |  |  | | | | |  | | |  |  | | | | |  |
|  | **bispyribac** | | **carfentrazone** | | | **copper & copper complexes - *algecides*** | | | **copper complexes - *herbicides*** | | | **diquat** | | | **endothall** | | | **fluridone** | | | **flumioxazin** | | | | **glyphosate** | | | **imazamox** | | | | **imazapyr** | | **penoxsulam** | | | **sodium carbonate peroxy-hydrate** | | | | **triclopyr** | | **2,4-D** | |  |
| **Aquatic Group & vegetation** | **Aquatic Herbicide1** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Grass Carp9** |
| **Algae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Chara/Nitella*** | P | |  | | | **E** | | |  | | | P | | | **G2**-P3 | | | P | | | P | | | | P | | |  | | | |  | |  | | |  | | | |  | | P | | **G** |
| **filamentous** |  | |  | | | **E** | | |  | | | **G** | | | **G2**-P3 | | | P | | | **G** | | | | P | | |  | | | |  | |  | | | **G6** | | | |  | | P | | F |
| **planktonic** |  | |  | | | **E** | | |  | | | P | | | **G2** | | | P | | | F | | | | P | | |  | | | |  | |  | | | **G6** | | | |  | | P | |  |
| **Floating Plants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **azolla** |  | | **G** | | | P | | |  | | | **G** | | |  | | | **E** | | | **E** | | | | F | | |  | | | |  | | **E** | | |  | | | |  | | F | |  |
| **duckweeds** |  | | **E** | | | P | | |  | | | **G** | | | P | | | **E** | | | **E** | | | | P | | |  | | | | P | | **E** | | |  | | | |  | | F | | F |
| **salvinia** | F | | **G** | | | P | | |  | | | **G** | | |  | | | **E** | | | **E** | | | | **G** | | | **E** | | | |  | | **E** | | |  | | | |  | |  | | P |
| **water hyacinth** | **E** | | **G** | | | P | | | **G4** | | | **E** | | |  | | | P | | | P | | | | **G** | | | **E** | | | | **E** | | **E** | | |  | | | | **E** | | **E** | | P |
| **watermeal** | F | | **G** | | | P | | |  | | | F | | |  | | | **G** | | | **E** | | | |  | | |  | | | |  | | **G** | | |  | | | |  | | F | | P |
| **water lettuce** | **E** | | **E** | | | P | | | **G4** | | | **E** | | |  | | | **G** | | | **E** | | | | **G** | | |  | | | | **E** | | **E** | | |  | | | | **G** | | F | |  |
| **Submerged plants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **coontail** | P | |  | | | P | | | **G4** | | | **E** | | | **E** | | | **E** | | | **G** | | | |  | | |  | | | |  | |  | | |  | | | |  | | **G** | | F-**G** |
| **elodea** |  | |  | | | P | | | **G4** | | | **E** | | | F | | | **E** | | | **E** | | | |  | | |  | | | |  | | **G** | | |  | | | |  | |  | | **E** |
| **fanwort** |  | |  | | | P | | | P | | | **G** | | | F | | | **E** | | | **G** | | | |  | | |  | | | |  | | **G** | | |  | | | |  | | F | | F |
| **hydrilla** | **E** | |  | | | P | | | **G4** | | | **G** | | | **G** | | | **E** | | | **G** | | | |  | | | **G** | | | |  | | **E** | | |  | | | |  | |  | | **E** |
| **milfoils** | **G** | | **E** | | | P | | | **G4** | | | **E** | | | **E** | | | **G** | | | **G** | | | |  | | | **G** | | | |  | | **E** | | |  | | | | **E** | | **E** | | F |
| **naiads** |  | |  | | | P | | | **G4** | | | **E** | | | **E** | | | **E** | | | **E** | | | |  | | |  | | | |  | | **G** | | |  | | | |  | | F | | **E** |
| **parrotfeather** |  | |  | | | P | | | P | | | **E** | | | **E** | | | **E** | | | **G** | | | |  | | | **G** | | | | **G5** | | **G** | | |  | | | | **G** | | **E** | | **G** |
| **pondweeds** | **G** | |  | | | P | | | **G4** | | | **G** | | | **E** | | | **E** | | | **G** | | | |  | | | **E** | | | | **G5** | | **G** | | |  | | | |  | | P | | **E** |
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| **1E= excellent control; G= good control; F= fair control; P= poor control; blank= unknown or no control**  **2Hydrothol formulations 6Best on blue-green algae**  **3Aquathol formulations 7E for sedge**  **4Specific copper complexes only- Nautique, Komeen, etc. 8F for rushes**  **5Spray only emergent portion 9Permit required from Texas Parks & Wildlife** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  |
|  | | **bispyribac** | | **carfentrazone** | | | **copper & copper complexes - *algecides*** | | | **copper complexes - *herbicides*** | | | **diquat** | | | **endothall** | | | **fluridone** | | | | **flumioxazin** | | | **glyphosate** | | | **imazamox** | | | | **imazapyr** | | **penoxsulam** | | | **sodium carbonate peroxy-hydrate** | | | **triclopyr** | **2,4-D** | |  | | |
| **Aquatic Group & vegetation** | | **Aquatic Herbicides1** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Grass Carp9** | | |
| **Emergent Plants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **alders** | |  | |  | | | P | | |  | | | F | | | P | | | P | | | |  | | | **E** | | |  | | | | **E** | |  | | |  | | | **E** | **E** | |  | | |
| **alligatorweed** | | **E** | | **F** | | |  | | |  | | | P | | |  | | | F | | | | **G** | | | **G** | | | **G** | | | | **E** | |  | | |  | | | **E** | F | |  | | |
| **arrowhead** | | **E** | |  | | | P | | |  | | | **G** | | | **G** | | | **E** | | | | **G** | | | **E** | | | **E** | | | | **E** | |  | | |  | | |  | **E** | |  | | |
| **buttonbrush** | |  | |  | | | P | | |  | | | F | | | P | | | P | | | |  | | | **G** | | |  | | | | **G** | |  | | |  | | |  | F | |  | | |
| **cattails** | | P | |  | | | P | | |  | | | **G** | | | P | | | F | | | | P | | | **E** | | | **E** | | | | **E** | |  | | |  | | |  | F | |  | | |
| **common reed** | |  | |  | | | P | | |  | | | F | | |  | | | F | | | | P | | | **E** | | | **G** | | | | **E** | |  | | |  | | |  | F | |  | | |
| **frogbit** | | **E** | |  | | |  | | | F4 | | | **E** | | |  | | |  | | | | **G** | | | F | | | **E** | | | | **E** | |  | | |  | | | **E** | **E** | |  | | |
| **pickerelweed** | | F | |  | | |  | | | F4 | | | **G** | | |  | | | P | | | | P | | | F | | | **E** | | | | **E** | |  | | |  | | | **G** | **G** | |  | | |
| **sedges & rushes** | | F | |  | | | P | | |  | | | F | | |  | | | P | | | | F | | | **G** | | |  | | | | **E7**F8 | | **G** | | |  | | |  | F | |  | | |
| **slender spikerush** | |  | |  | | | P | | |  | | | **G** | | |  | | | **G** | | | | P | | | P | | |  | | | | F | |  | | |  | | |  |  | |  | | |
| **smartweed** | | **G** | |  | | | P | | | F4 | | | F | | |  | | | F | | | | P | | | **E** | | | **E** | | | | **E** | | **G** | | |  | | | **E** | **E** | |  | | |
| **southern watergrass** | |  | |  | | | P | | |  | | |  | | |  | | | **G** | | | |  | | | **E** | | |  | | | | **E** | |  | | |  | | |  | P | |  | | |
| **waterlilies** | | F | |  | | | P | | |  | | | P | | |  | | | **E** | | | | F | | | **G** | | | **G** | | | | **G** | | **G** | | |  | | | **G** | **E** | |  | | |
| **water pennywort** | | **G** | |  | | | P | | |  | | | **G** | | |  | | | P | | | | **G** | | | **G** | | |  | | | | **E** | | **G** | | |  | | | **E** | **G** | |  | | |
| **water primrose** | |  | | **F** | | | P | | |  | | | F | | | P | | | F | | | | **G** | | | **E** | | | **E** | | | | **E** | |  | | |  | | | **E** | **E** | |  | | |
| **watershield** | |  | |  | | | P | | |  | | | P | | |  | | | **G** | | | | **G** | | | **G** | | | **G** | | | | **E** | |  | | |  | | |  | **E** | |  | | |
| **willows** | | P | |  | | | P | | |  | | | F | | | P | | | P | | | | P | | | **E** | | |  | | | | **E** | |  | | |  | | | **E** | **E** | |  | | |

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| **Active Ingredients** | | **Commonly Available Trade Names** | | | | | | | | |  | | | |  | | | | |  | |  | | | |  | | |  |  | | |  |  |  |  |  |  |  |  |
| bispyribac | | Tradewind | |  |  | |  | |  |  | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| carfentrazone | | Stingray | |  |  | |  | |  |  | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| copper & complexes | | Copper Sulfate, Cutrine, Cutrine Plus, K-Tea, Captain, Agritec,  EarthTec, Clearigate | | | | | | | | | | | | | | | | | | | | | | | | | | |  |  | | |  |  |  |  |  |  |  |  |
| copper - herbicides | | Komeen, Nautique | | |  | |  | |  |  | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| diquat | | Reward, Harvester, Tribune, Tsunami DQ, Diquat SPC2L, Weedtrine D | | | | | | | | | | | | | | |  | |  | | |  | |  | |  | |  | | | |
| endothall | | Aquathol K, Aquathol Super K, Hydrothol 191 | | | | | | | | | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| flumioxazin | | Clipper | |  |  | |  | |  |  | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| fluridone | | Sonar, Avast, WhiteCap, Restore | | | | | | |  |  | |  |  | |  | |  | |  | | |  | |  | |  | |  | | | |
| **Active Ingredients** | **Commonly Available Trade Names** | | | | | | |
| glyphosate | Rodeo, Aquamaster, AquaNeat, Eraser AQ, Refuge®, others | | | | | | | | | | | | |  | |  | |  | | |  | |  | |  | |  | | | |
| imazamox | Clearcast | |
| imazapyr | Habitat, Arsenal, Poloris | | | | |
| penoxsulam | Galleon | |
| sodium carbonate peroxyhydrate | Green Clean, PAK 27, Phycomycin | | | | | | |
| triclopyr | Renovate, Navitrol, Ecotriclopyr | | | | | | |
| 2,4-D | Navigate, Weedar 64 | | | | |  | |

**\*\*\*Texas A&M University & Extension does not endorse any trade name herbicide**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Table 2. Aquatic Vegetation Herbicide Control Water Use Restriction1 (number of days after treatment**  **before use in private waters only)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |  | | |  | | |
|  | | | | | | | | | | | | | | | | | | |  |  | | | | | | | |  | |  |  | | |  | | |
|  | **Human Use** | | | | | | | | | | | | **Livestock** | | | **Irrigation** | | | | | | | | | | | | |  | | | | | |
| **Common Name** |  | **Drinking** | | **Swimming** | |  | **Fish** | | |  | **Watering** | | | | **Turf** | | | | | | | |  | **Crops** | | | |  | | | | | | | |
| **bispyribac** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **30** | | | |  | | **30** | | |  | | | | | |
| **carfentrazone** |  | **0 - 12** | | **0** | |  | | **0** |  | | | **0 - 12** | | | | |  | **0 - 142** | | | |  | | **0 - 142** | | |  | | | | | |
| **copper complexes 3** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **0** | | | |  | | **0** | | |  | | | | | |
| **diquat** |  | **1-33** | | **0** | |  | | **0** |  | | | **1** | | | | |  | **1-34** | | | |  | | **5** | | |  | | | | | |
| **endothall5** |  | **7-25** | | **1** | |  | | **0** |  | | | **7-25** | | | | |  | **7-25** | | | |  | | **7-25** | | |  | | | | | |
| **flumioxazin** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **0-34** | | | |  | | **5** | | |  | | | | | |
| **fluridone6** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **7-30** | | | |  | | **7-30** | | |  | | | | | |
| **glyphosate7** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **0** | | | |  | | **0** | | |  | | | | | |
| **imazamox** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **1** | | | |  | | **18** | | |  | | | | | |
| **imazapyr** |  | **\*9** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **12010** | | | |  | | **12010** | | |  | | | | | |
| **penoxsulam** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **0** | | | |  | | **\*11** | | |  | | | | | |
| **SCP12** |  | **0** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **0** | | | |  | | **0** | | |  | | | | | |
| **triclopyr** |  | **\*13** | | **0** | |  | | **0** |  | | | **0** | | | | |  | **014** | | | |  | | **12015** | | |  | | | | | |
| **2,4-D** |  | **\*16** | | **\*16** | |  | | **\*16** |  | | | **\*16** | | | | |  | **\*16** | | | |  | | **\*16** | | |  | | | | | |
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| 1 Aquatic vegetation control can result in period of low dissolved oxygen which can stress and/or kill fish. It is best to treat most aquatic vegetation early in the growing season, when the plant is rapidly growing. Treating small areas (e.g. 1/4) of pond at a time at 10-14 day intervals will allow for decomposition usually without causing oxygen depletion. | |  | |  | | | | | | |  | | | |  | | |  |  | | | | | | |  | | |  | | | | |  | |  | | | |  | |  | |  | |  | | | | |
| 2 Variesif 20% or more of surface area is treated | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  |
| 3 If water is for drinking, the elemental copper concentration should not exceed 1.0 ppm (i.e. 4.0 ppm copper sulfate). | | |  | |  |  |  | | |  | | | |  | | | | | | | |  |  | | | |  | | | | | |  | | | | | |
| 4 Depending on formulation or rate - **Read label**. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 5 Length of use restriction for endothall varies with concentration used. **Read label**. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 6 Do not apply within 0.25 mile of a functioning potable water intake. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 7 Do not apply within 0.5 mile of a functioning potable water intake. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 8 Do not use treated water to irrigate greenhouses, nurseries, or hydroponics | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 9 Greater than 1/2 mile from potable water intake | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 10 Or until <1.0 ppb | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 11 Do not use water from any treated site for food crop irrigation until residues are determined to be less than or equal to 1 ppb. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 12 Sodium Carbonate Peroxyhydrate  13 Minimum setback distances from potable water intakes required and laboratory tests to determine < 0.4 ppm for use. **Read label**. |  | | | | | | |  |
| 14 No restriction on irrigating established grasses but do not harvest hay for 14 days after application. **Read label**. | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 15 Or until non-detectable concentration in immunoassay analysis | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| 16 Water restrictions on 2,4-D vary with formulation, location, rate, and time of year.  **Read label.** | | | | | | | | | | | | | | | |  |  | | | | | | | |  | | | | | | |
| **ONLY PRODUCTS LABELED FOR AQUATIC USE may be used in, over, or near the water** | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |
| Additional information is available through the following references and websites –  **aquaplant.tamu.edu**, **srac.tamu.edu**, & **wildlife.tamu.edu** | | | | | | | | | | | |  |  | | | | | |  | |  | | |  | | | | | |  | | | | | | |
| Aquatic Vegetation Indentification Card Deck - Pub. #B6095, produced by Dr. Michael P. Masser are for sale for $12.00 + taxes & shipping, order for 10 or more or $7.00+ Plus taxes & shipping, order from the Texas AgriLife Bookstore, <agrilifebookstore.org> or fax 979/458-0172  \*srac.tamu.edu website publication numbers, SRAC 0360-0369; 3600-3699 | |  | |  | | | | | | |  | | | |  | | | | |  | | | | | | | |  | | |  | | | |  | | |  | | |  | |  | |  | |  |  |  | |

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