# Aquatic Herbicide Tables

RWFM-PU-143
April 2024

Table 1. Treatment Response of Common Aquatic Plants to Registered Herbicides

| Aquatic Group & Vegetation | Aquatic Herbicide[1] | | | | | | | | | | | | | | | | | Grass Carp[9] | Tilapia[13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | bispyribac | carfentrazone | copper & copper complexes - *algaecides* | copper complexes - *herbicides* | diquat | copper-based tank mixed with diquat | endothall | fluridone | flumioxazin | glyphosate | imazamox | imazapyr | penoxsulam | sodium carbonate peroxyhydrate | triclopyr | 2,4-D | florpyrauxifen-benzyl[14] | | |
| **Algae** | | | | | | | | | | | | | | | | | | | |
| ***Chara/Nitella*** | P | | E | | P | E | G[2]-P[3] | P | P | P | | | | | | P | | G | F |
| **filamentous** | | | E | | G | E | G[2]-P[3] | P | G | P | | | | G[6] | | P | | F | F-G |
| **planktonic** | | | E | | P | E | G[2] | P | F | P | | | | G[6] | | P | | P | P-F |
| **Floating Plants** | | | | | | | | | | | | | | | | | | | |
| **azolla** | | G | P | | G | G | | E | E | F | | | E | | | F | G[11] | F | E |
| **duckweeds** | | E | P | | G | G | P | E | E | P | | P | E | | | F | | F | G |
| **salvinia** | F | G | P | | G | | | E | E | G | E | | E | | | | | P | P |
| **water hyacinth** | E | G | P | G[4] | E | E | | P | P | G | E | E | E | | E | E | G[11] | P | P |
| **watermeal** | F | G | P | | F | | | G | E | | | | G | | | F | | P | P |
| **water lettuce** | E | E | P | G[4] | E | E | | G | E | G | | E | E | | G | F | | P | P |
| **Submerged Plants** | | | | | | | | | | | | | | | | | | | |
| **coontail** | P | | P | G[4] | E | E | E | E | G | | | | | | | G | F | F-G | P |
| **elodea** | | | P | G[4] | E | E | F | E | E | | | | G | | | | | E | P |
| **fanwort** | | | P | P | G | G | F | E | G | | | | G | | | F | F | F | P |
| **hydrilla** | E | | P | G[4] | G | E | G | E | G | | G | | E | | | | E | E | P |
| **milfoils** | G | E | P | G[4] | E | E | E | G | G | | G | | E | | E | E | E | F | P |
| **naiads** | | | P | G[4] | E | E | E | E | E | | | | G | | | F | | E | P |
| **parrotfeather** | | | P | P | E | E | E | E | G | | G | G[5] | G | | G | E | G | G | P |
| **pondweeds** | G | | P | G[4] | G | E | E | E | G | | E | G[5] | G | | | P | P-F | E | P-F |

## Table 1. Treatment Response of Common Aquatic Plants to Registered Herbicides (cont.)

| Aquatic Group & Vegetation | bispyribac | carfentrazone | copper & copper complexes - *algaecides* | copper complexes - *herbicides* | diquat | copper-based tank mixed with diquat | endothall | fluridone | flumioxazin | glyphosate | imazamox | imazapyr | penoxsulam | sodium carbonate peroxyhydrate | triclopyr | 2,4-D | florpyrauxifen-benzyl[14] | Grass Carp[9] | Tilapia[13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Aquatic Herbicide[1] | | | | | | | | | | | | | | | | | | |
| **Emergent Plants** | | | | | | | | | | | | | | | | | | | |
| **alders** | | | P | | F | | P | P | | E | | E | | | E | E | | P | P |
| **alligatorweed** | E | F | | | P | | | F | G | G | G | E | | | E | F | E[11] | P | P |
| **arrowhead** | E | | P | | G | G | G | E | G | E | E | E | | | | E | | P | P |
| **buttonbrush** | | | P | | F | | P | P | | G | | G | | | | F | | P | P |
| **cattails** | P | | P | | G | | P | F | P | E | E | E | | | | F | | P | P |
| **common reed** | | | P | | F | | | F | P | E | G | E | | | | F | | P | P |
| **frogbit** | E | | | F[4] | E | E | | | G | F | E | E | | | E | E | | P | P |
| **pickerelweed** | F | | | F[4] | G | E | | P | P | F | E | E | | | G | G | | P | P |
| **sedges & rushes** | F | | P | | F | F | | P | F | G | | E[7] F[8] | G | | | F | NR-G[10] | P | P |
| **slender spikerush** | | | P | | G | G | | G | P | P | | F | | | | | F-G[11] | P | P |
| **smartweed** | G | | P | F[4] | F | F-G | | F | P | E | E | E | G | | E | E | G | P | P |
| **southern watergrass** | | | P | | | | | G | | E | | E | | | | P | | P | P |
| **waterlilies** | F | | P | | P | | | E | F | G | G | G | G | | G | E | E[12] | P | P |
| **water pennywort** | G | | P | | G | G | | P | G | G | | E | G | | E | G | | P | P |
| **water primrose** | | F | P | | F | F-G | P | F | G | E | E | E | | | E | E | G[12] | P | P |
| **watershield** | | | P | | P | | | G | G | G | G | E | | | | E | G[12] | P | P |
| **willows** | P | | P | | F | | P | P | P | E | | E | | | E | E | | P | P |

[1] *E = excellent control; G = good control; F = fair control; P = poor control; NR = not rated; blank = unknown or no control*
[2] *Hydrothol formulations*
[3] *Aquathol formulations*
[4] *Specific copper complexes only (e.g., Nautique, Komeen, etc.)*
[5] *Spray only emergent portion*
[6] *Best on blue-green algae*
[7] *E for sedge*
[8] *F for rushes*
[9] *Texas Parks and Wildlife permit required*
[10] *G for rushes only*
[11] *In-water application*
[12] *Foliar application*
[13] *Check TPWD tilapia zones*
[14] *Only PRO Certified ProcellaCOR specialists can purchase and apply*

| Table 2. Examples of Common Trade Names of Aquatic Herbicides | |
|---|---|
| **Active Ingredients** | **Commonly Available Trade Names** |
| **bispyribac** | Tradewind, Airstream |
| **carfentrazone** | Stingray |
| **copper & complexes** | Copper Sulfate, Cutrine, Cutrine Plus, Captain, Crystal Plex, Agritec, EarthTec, Clearigate, K-Tea, others |
| **copper – *herbicides*** | Komeen, Nautique |
| **diquat** | Reward, Harvester, Tribune, Tsunami DQ, Weedtrine D, Diquat SPC2L, Alligare Diquat, others |
| **endothall** | Aquathol K, Aquathol Super K, Hydrothol 191 |
| **flumioxazin** | Clipper, Flumigard WDG, Flumigard SC, Semera SC, Propeller |
| **fluridone** | Sonar, Avast, WhiteCap, Restore, Alligare Fluridone |
| **glyphosate** | Rodeo, Aquamaster, AquaNeat, Eraser AQ, Refuge, Roundup Custom, others |
| **imazamox** | Clearcast, Imox, Imazacast, Top Deck, Castaway |
| **imazapyr** | Habitat, Arsenal, Polaris, Imazapyr 4 SL, Ecomazapyr 2SL |
| **penoxsulam** | Galleon SC |
| **sodium carbonate peroxyhydrate** | GreenClean, PAK 27, Phycomycin SCP |
| **triclopyr** | Renovate 3, Trycera, Navitrol, Ecotriclopyr, Triclopyr 3, Renovate Max G granular, Renovate OTF granular |
| **2,4-D** | Navigate, Weedar 64, HardBall, AquaSweep, Alligare 2,4-D Amine, Aquacide pellets, others |
| **florpyrauxifen-benzyl** | ProcellaCOR SC |

*Texas A&M University & the Texas A&M AgriLife Extension Service do not endorse any trade name herbicide, company, or products. Brand names are provided as examples for reference only, and this list is not exhaustive.*

## Table 3. Aquatic Vegetation Herbicide Control Water Use Restriction[1] (Number of days after treatment before use in private waters only)

| | Human Use | | | Livestock | Irrigation | |
|---|---|---|---|---|---|---|
| **Common Name** | **Drinking** | **Swimming** | **Fishing** | **Watering** | **Turf** | **Crops** |
| **bispyribac** | 0 | 0 | 0 | 0 | 30 | 30 |
| **carfentrazone** | 0–1[2] | 0 | 0 | 0–1[2] | 0–14[2] | 0–14[2] |
| **copper complexes[3]** | 0 | 0 | 0 | 0 | 0 | 0 |
| **diquat** | 1–3[4] | 0 | 0 | 1 | 1–3[4] | 5 |
| **endothall[5]** | 7–25 | 1 | 0 | 7–25 | 7–25 | 7–25 |
| **flumioxazin** | 0 | 0 | 0 | 0 | 0–3[4] | 5 |
| **fluridone[6]** | 0 | 0 | 0 | 0 | 7–30 | 7–30 |
| **glyphosate[7]** | 0 | 0 | 0 | 0 | 0 | 0 |
| **imazamox** | 0 | 0 | 0 | 0 | 1 | 1[8] |
| **imazapyr** | *[9] | 0 | 0 | 0 | 120[10] | 120[10] |
| **penoxsulam** | 0 | 0 | 0 | 0 | 0 | *[11] |
| **SCP[12]** | 0 | 0 | 0 | 0 | 0 | 0 |
| **triclopyr** | *[13] | 0 | 0 | 0 | 0[14] | 120[15] |
| **2,4-D** | *[16] | *[16] | *[16] | *[16] | *[16] | *[16] |
| **florpyrauxifen-benzyl[17]** | 0 | 0 | 0 | *[18] | *[19] | *[19] |

[1] *Aquatic vegetation control can result in periods 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 the pond at a time at 10- to 14-day intervals will allow for decomposition, usually without causing oxygen depletion.*

[2] *Varies if 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.***

[17] *Only PRO Certified ProcellaCOR specialists can purchase and apply.*

[18] *Do not allow livestock to drink if manure is used for compost until active concentrations are <1 ppb.*

[19] *Do not irrigate until active concentrations are <1 ppb.*

***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,*** *and* ***fisheries.tamu.edu***

***These tables were prepared and maintained by: Todd Sink, Associate Professor and Aquaculture Extension Specialist,*** *and* ***Brittany Chesser, Aquatic Vegetation Management Program Specialist***