TEXAS A&M AGRILIFE EXTENSION

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

Aquatic Group & vegetation	bispyribac	carfentrazone	copper & copper complexes - *algaecides*	copper complexes - *herbicides*	diquat	endothall	fluridone	flumioxazin	glyphosate	imazamox	imazapyr	penoxsulam	sodium carbonate peroxy-hydrate	triclopyr	2,4-D	Grass Carp[9]
	Aquatic Herbicide[1]															
Algae																
Chara/Nitella	P		E		P	G[2]-P[3]	P	P	P						P	G
filamentous			E		G	G[2]-P[3]	P	G	P				G[6]		P	F
planktonic			E		P	G[2]	P	F	P				G[6]		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	G[4]	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	G[4]	E		G	E	G		E	E		G	F	
Submerged plants																
coontail	P		P	G[4]	E	E	E	G							G	F-G
elodea			P	G[4]	E	F	E	E				G				E
fanwort			P	P	G	F	E	G				G			F	F
hydrilla	E		P	G[4]	G	G	E	G		G		E				E
milfoils	G	E	P	G[4]	E	E	G	G		G		E		E	E	F
naiads			P	G[4]	E	E	E	E				G			F	E
parrotfeather			P	P	E	E	E	G		G	G[5]	G		G	E	G
pondweeds	G		P	G[4]	G	E	E	G		E	G[5]	G			P	E

[1]E= excellent control; G= good control; F= fair control; P= poor control; blank= unknown or no control
[2]Hydrothol formulations
[3]Aquathol formulations
[4]Specific copper complexes only- Nautique, Komeen, etc.
[5]Spray only emergent portion
[6]Best on blue-green algae
[7]E for sedge
[8]F for rushes
[9]Permit required from Texas Parks & Wildlife

Aquatic Group & vegetation	bispyribac	carfentrazone	copper & copper complexes - *algicides*	copper complexes - *herbicides*	diquat	endothall	fluridone	flumioxazin	glyphosate	imazamox	imazapyr	penoxsulam	sodium carbonate peroxy-hydrate	triclopyr	2,4-D	Grass Carp[9]
	Aquatic Herbicides[1]															
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**			F[4]	**E**			**G**	F	**E**	**E**			**E**	**E**	
pickerelweed	F			F[4]	**G**		P	P	F	**E**	**E**			**G**	**G**	
sedges & rushes	F		P		F		P	F	**G**		**E**[7] F[8]	**G**			F	
slender spikerush			P		**G**		**G**	P	P		F					
smartweed	**G**		P	F[4]	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**	

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

Table 2. Aquatic Vegetation Herbicide Control Water Use Restriction[1] (number of days after treatment before use in private waters only)

Common Name	Human Use			Livestock	Irrigation	
	Drinking	Swimming	Fish	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[3]	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]

[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] 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.**

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

These tables were prepared and maintained by:
Michael P. Masser, Professor and Department Head WFSC
Todd D. Sink, Assistant Professor and Fisheries Extension Specialist