

WEED CONTROL IN FARM PONDS

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The problems of weed control can be greatly reduced in farm ponds, if the pond edge is deepened so there are no water areas shallower than 18 inches and the recommended fertilization program is followed from the time the pond is first filled with water. Since these practices are not followed in many ponds, and often even in well-managed ponds some weeds may appear, other control measures are necessary to eliminate the water weeds.

It is generally recognized by fisheries workers that there are five major groups of aquatic weeds which must be controlled in a fish pond, if such a pond is to produce good fishing. These groups are as follows: Filamentous algae, submerged weeds, emergent weeds, marginal weeds, and floating weeds.

Summarized in Table 1 are methods for controlling weeds in each of these groups, which have been selected from several references. Information on herbicide dilution and amount of chemical to give specific concentration in pond water are given in Tables 2 and 3.

SELECTED REFERENCES

1. Deepening of pond edge:

Lawrence, J. M. 1949. Construction of farm fish ponds. Cir. 95. A.P.I. Agricultural Experiment Station, Auburn, 55 pp.

2. Winter fertilization:

Swingle, H. S., and E. V. Smith. 1947. Management of farm fish ponds. Bull. 254. A.P.I. Agricultural Experiment Station, Auburn, 30 pp.

3. Cutting plus fertilization:

Swingle, H. S., and E. V. Smith. 1947. Management of farm fish ponds. Bull. 254. A.P.I. Agricultural Experiment Station, Auburn, 30 pp.

4. Copper sulphate:

Surber, E. W. 1949. Control of aquatic plants in ponds and lakes. Fishery leaflet 344, U. S. Fish and Wildlife Service, 22 pp.

5. Sodium arsenite:

Surber, E. W. 1949. Control of aquatic plants in ponds and lakes. Fishery leaflet 344, U. S. Fish and Wildlife Service, 22 pp.

6. Delrad:

Lawrence, J. M. 1954. The control of Pithophora, a branched type of summer alga. Progressive Fish Culturist, Vol. 16, No. 2, pp. 83-87.

7. Herbicide sprays:

Snow, J. R. 1949. Control of pond weeds with 2, 4-D. Progressive Fish Culturist, Vol. 11, No. 2, pp. 105-109.

A.P.I. Agriculturist Experiment Station, Farm Ponds Project, Unpublished data.

Surber, E. W. 1949. Control of aquatic plants in ponds and lakes. Fishery leaflet 344, U. S. Fish and Wildlife Service, 22 pp.

Table 1. Methods of controlling weeds in farm ponds. When using herbicide sprays, respray applications are applied whenever sufficient regrowth appears.

Type growth	Name of weed	Control measures ^a			
Filamentous Algae		Copper Sulphate (ppm)	Delrad ^b (ppm)	Sodium Arsenite (ppm)	
	Spirogyra	1	0.2	4 (As ₂ O ₃)	
	Oedogonium	1	0.2	4 (As ₂ O ₃)	
	Pithophora	1	0.2	4 (As ₂ O ₃)	
	Hydrodictyon Chara	1	0.2	4 (As ₂ O ₃)	
Submerged Weeds		Sodium Arsenite (ppm)	Fertilization	2, 4-D	
	Najas	4 (As ₂ O ₃)	Winter		
	Elodea	4 (As ₂ O ₃)	Winter		
	Coontail	4 (As ₂ O ₃)	Winter		
	Milfoil	4 (As ₂ O ₃)	Winter		
	Bladderwort	4 (As ₂ O ₃)	Winter		
	Potamogeton	4 (As ₂ O ₃)	Winter		
	Parrots feathers	4 (As ₂ O ₃)	Winter	0.25% oil spray on emergent growth	
	Emergent Weeds		2, 4-D	Cutting plus Fertilization	
		Water lilies	0.25% oil spray	Partial draining to dry roots ^c	
Lotus		0.25% oil spray	Partial draining to dry roots ^c		
Spatterdock		0.25% oil spray	Partial draining to dry roots ^c		
Watershield		0.25% oil spray	Partial draining to dry roots ^c		
Pennywort		0.25% oil spray	Partial draining to dry roots ^c		

Table 1. Continued.

Type growth	Name of weed	Control measures ^a	
Marginal Weeds	Primrose willow	2, 4-D	
	Sedges	0.25% oil spray	
	Smartweeds	0.25% oil spray	
	Cattails	0.25% oil spray	
	Arrowhead	0.25% oil spray	
	Pickernel weeds	0.25% oil spray	
	Bulrush	0.25% oil spray	
	Spike rush	0.25% oil spray	
	Knot grass	0.25% oil spray	
	Southern water-grass	0.25% oil spray ^f	
	Needle rush	0.25% oil spray	
	Floating Weeds	Duck weeds	2, 4-D
		Hyacinths	0.25% oil spray
			0.25% oil spray

^a Repeated applications of a chemical at the recommended rate may have to be made to control the filamentous algae.

^b Delrad, same as Rosin Amine D Acetate, manufactured by the Hercules Powder Company, Wilmington, Delaware.

^c Three to five cuttings during the first summer may be necessary.

^d With 0.1%, 2, 4-D water spray.

^e For cattails one may use 0.5%; 2, 4-D — 0.1%; Tide — 1.0%; TCA — water spray.

^f Draining with spray.

Table 2. Herbicide dilution table.

Compound	% Active ingredients	% Spray solution	Mixtures	
			5 Gals.	100 Gals.
Ester form 2, 4-D	37 - 40	0.10	1/10 pt.	1 qt.
Ester form 2, 4-D	37 - 40	0.25	1/4 pt.	2 1/2 qts.
Ester form 2, 4-D	37 - 40	0.50	1/2 pt.	5 qts.
Ester form 2, 4, 5-T	40	0.25	1/4 pt.	2 1/2 qts.
T. C. A.	90	1.00	1/20 lb.	1.1 lbs.
Tide		0.10	1/10 pt.	1 qt.

Note: 1 p.p.m. of a chemical in pond water is 2.7 lbs. of chemical per acre foot. 1 acre foot is the volume of water in an area of 1 acre and 1 foot deep.

Table 3. Amount of chemical required to give a definite concentration in pond water.

Chemical	% Active ingredient	Concentration p.p.m.	Amount per acre foot (1)
Copper Sulphate	100	1.0	2.7 lbs.
Delrad 50-S	50	0.2	1.0 lbs.
Delrad 70	70	0.2	0.75 lbs.
Sodium Arsenite			
Atlas "A", 4 lbs./gals.	(As ₂ O ₃)	4.0	3.0 gals.
Penite 6, 9.5 lbs./gals.	(As ₂ O ₃)	4.0	5.0 qts.

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