



## ESAE – NATURAL POND AND LAKE CLEANER

**ESAE** natural pond cleaner is formulated for use in the prevention of pond scum, algae and odour that commonly plague lakes and ponds. **ESAE** works in the entire water column, as well as bottom sludge layers to degrade organic waste and other nutrients that promote algae growth. **ESAE** is environmentally safe and is not harmful to humans, plants and animals and is easy to use. Simply apply at regular intervals or as required during the algae season. **ESAE** is NOT an algacide and no applicator's permit or licenses are necessary.

Controlling algae by reducing sunlight, limiting nutrient leaching into the water column and manually removing sludge build-up resulting from fecal matter, leaves, etc., can be labour intensive. An alternative, **ESAE** pond cleaner will effectively degrade bottom sludge and reduce the nutrients required for algae growth.

Excessive algae growth is an indicator that a pond is out of balance. Typically, algae blooms are caused by an oxygen deficient water column, excessive nutrients loads i.e. nitrogen and phosphorous runoff from lawns, agricultural land, septic systems, biodegradable materials (dead leaves and plant material, fecal matter from fish, frogs, birds and other aquatic life) and sunlight. Ponds with low oxygen levels and high bottom sludge (nutrient) accumulations tend to go anaerobic. Under this condition, oxygen levels can be further depleted due to the amount of oxygen required to degrade the bottom sludge and, as a result, ponds become stagnant and odorous and algae blooms worsen over the summer months.

### HOW ESAE WORKS:

When **ESAE** is applied to the water, algae blooms are prevented through competition. **ESAE** will remove nitrogen compounds from the water column faster than the algae and, as a result, the algae will be starved out of existence or the bloom is inhibited. In addition, **ESAE** degrades accumulated organic waste, top scum and bottom sludge for use as carbon sources. The overall result is clean, clear water, free from algae, odours and sludge. **ESAE** is designed to treat the cause, not the effect.

### PRODUCT COMPARISONS:

	ESAE	Copper Sulphate	Diquat
Is an Algacide	NO	YES	YES
Controls Odours	YES	NO	NO
Removes Sludge	YES	NO	NO
Benefits Turf	YES	NO	NO
ECO Friendly	YES	NO	NO
Permits Required	NO	YES	YES
All Natural	YES	NO	NO

## **BENEFITS OF ESAE:**

- Breaks down organic and fecal waste in the water
- Clarifies lake or pond water
- Eliminates ammonia and organic odours
- Enhances uptake of nutrients by grasses
- Improves the aquatic environment for fish and wildlife
- Reduces ammonia salts and other contaminants
- Safe for humans, animals, fish and aquatic plant life

## **APPLICATION RATES FOR CONTROLLING ALGAE IN SMALL PONDS AND WATER GARDENS:**

The following table is intended as a general guideline for treating small ponds and water gardens for algae, scum and bottom sludge control. The recommended amount depends on the historic amounts of algae and scum grown on the pond when untreated, and the number of fish in the pond. Typically, manure and urine resulting from waterfowl can significantly increase loads and suggested dosing amounts should be doubled or tripled depending on the number of birds.

Generally a light accumulation of algae or scum is one that covers approximately 5 – 10% of the pond surface; a medium accumulation about 10 - 20%; a heavy accumulation about 20 – 40% and a very heavy accumulation over 40%. A light to medium accumulation will usually require a dose at or near the lower limit in each category, while a heavy or very heavy accumulation will require the maximum dosage in each range.

Amounts of **ESAE** shown below are the maintenance dosages. The first dose should be 3 times this amount and the second dose 2 times this amount. If the pond is not clear and algae free after the second dose, continue to apply the second dose amount until it is. Then use the maintenance dose to keep the pond in that condition. Ponds in areas that do not have a winter algae kill, i.e. those whose water temperature does not go below 50°F at any time of the year, should restart the dosing procedure with the 3X and 2X and maintenance dose procedure every 6 months. Ponds that are seasonal require the above sequence of doses at the beginning of each season. Maintenance dosage rates will be applied every 3 to 4 weeks throughout the season.

<b>TYPICAL MAINTENANCE RATES FOR PONDS UP TO 1,250,000 Litres (326,000 Gallons)</b>		
<b>Pond Volume (Litres)</b>	<b>Pond Volume (Gallons)</b>	<b>Application Rate - # of pouches required (1 pouch = 1oz or 30mg)</b>
Less than 37,000	Less than 10,000	0.5 to 1
37,000 to 65,000	10,000 to 20,000	1.0 to 2
65,000 to 130,000	20,000 to 40,000	2 to 4
130,000 to 285,000	40,000 to 75,000	4 to 8
285,000 to 565,000	75,000 to 150,000	8 to 16
565,000 to 1,250,000	150,000 to 326,000	16 to 20

### **NOTE:**

Typically, when fertilizers are applied to areas around a pond, a surge of nitrates into the pond can be expected. This can result in new algae growth in shallow areas. When this occurs, temporarily increase the maintenance dose for one or two applications to account for this nutrient surge. Use the 2X or 3X amount depending on the degree of new growth. To apply, simply toss the water soluble pouches directly into the water.

## **CALCULATING APPLICATION RATES FOR PONDS GREATER THAN 1,250,000 Litres (326,000 Gallons)**

**TYPICAL APPLICATION RATE (MAINTENANCE):** 1 lb. / Acre Foot

**TYPICAL APPLICATION INTERVAL:** Every 3 to 4 weeks for the duration of the algae season

**Note: One acre-foot = 326,000 Gallons**

### **How to calculate application rates:**

A triple dose (three times the maintenance dose) is recommended for the first treatment and a double dose for the second treatment. Thereafter, use the maintenance dose as determined in step 3, below. For ponds that already have some algae growth or that receive heavier nutrient loads (from lawn fertilizers, farm fields, geese manure, etc.), use a double dose until the algae is cleared then revert to maintenance dose.

1. Estimate the surface area of the pond in acres. (One acre is about 210 feet square or exactly 43,560 sq. ft.)
2. Estimate the average pond depth in feet. (Estimate a bit high if unsure)
3. Multiply the surface area in acres x the average depth in feet. The result is the pond volume in acre feet as well as the number of pounds of bacteria required for maintenance. **(Example: 0.5 Ac. X 4' deep = 2.0 Acre-feet (2 pounds/maintenance dose))**
4. Estimate the total number of weeks in the algae growing season or the number of weeks the pond water temperature will be above 50°F. (Note that algae begin growing in waters at or above this temperature and cease vigorous growth below this temperature).
5. Divide the number of weeks in the growing season by 3 and add 1 to the result. This will give you the number of seasonal treatments. **(Example: 28 weeks divided by 3 = 9.3 - Add 1 for a total of 11 seasonal treatments)**
6. Add 3 to the number of seasonal treatments to account for the two initial heavier doses. **(Example: 11 + 3 = 14)**
7. Multiply the number obtained in step 6 X the maintenance dose (step 3). This will give you the total number of pounds of bacteria you will need for the algae season. **(Example: 14 x 2.0 = 28 pounds/season)**

### **Note:**

For optimum performance water pH should be between 6.0 and 8.0. Check pH before beginning seasonal treatments and several times during the season. Adjust pH to within those limits if necessary. A pH of 7.0 is most desirable.

### **CONVERSIONS:**

- 1 Acre = 43,560 sq. Feet
- 1 Gallon = 8.345 pounds
- 1 Acre = 4,047 sq. Meters
- 1 Metric Ton – 1,000 Kilograms = 2,205 pounds = 0.0067673 Acre-feet
- 1 Pound = 453.6 Grams
- 1 Acre-Foot = 43,560 cu. ft. = 325,829 gallons
- 1 Cubic Meter = 264.2 gallons
- 1 Meter = 3.281 feet

**SAFETY:**

**ESAE** is produced in accordance with NOSB (National Organic Standards Board) guidelines. The materials used in the production process are derived from naturally occurring and sustainable sources and are consistent with organic principals and the National List of Allowed Substances. **ESAE** does NOT contain synthetic chemicals, animal components, and animal by products, manure or manure by-products. **ESAE** is environmentally safe and is not harmful to animals, plants and humans.

**COMPLIANCE:**

Fully complies with EPA Toxic Substance Control Act (TSCA) and the rules, orders and regulations promulgated there under including:

- a) Sections 4, 5, 6 & 7; Title 40 Chapter 1, 707.20 thru 707.75;
- b) 40 CFR Sections 704.3. 710.2(e) and 720.3(c); and
- c) Sections 5 and 13, reference 42FR64583
- d) Does not contain marine pollutants as defined in 49 CFR 171.8.

**STORAGE & HANDLING:**

Do **NOT** freeze. Store in a cool location away from direct sunlight - No special handling required

**PACKAGING:**

- 1 kg. (2.2 lb.) 32 X 28gr. (1oz.) Water Soluble Pouches
- 10 kg. (22 lb.) HDPE Pail - 28gr. (1oz.) Water Soluble Pouches
- 10 kg. (22 lb.) HDPE Pail - (8.8 oz.) Water Soluble Pouches
- 10 kg. (22 lb.) HDPE Pail - Bulk