

Fertilizing Mississippi Farm Ponds

A fertilized pond can produce three to four times as many pounds of fish each year as a nonfertilized pond. The well-fertilized, well-managed pond will usually produce 200 to 400 pounds of fish per acre each year. If you are a good enough fisherman, you can catch about half of them.

Tiny plants and animals, called plankton, are necessary for successful fish production. Water insects and other organisms use the plankton for food. Bream and shellcrackers feed on the insects, and bass feed on the small fish. As plankton production is increased, fish production also increases. Fertilizer can be applied to stimulate plankton and increase fish production in any size pond.

Importance of Liming

Do not start a pond fertilization program without first finding out the lime requirement of the soil on the pond bottom. Application of phosphate fertilizers to ponds with acid soils is a waste of money and time. The type of soil in your pond also determines the amount of fertilizer you should apply. Collect a bottom mud sample from several places around the edge of the pond, mix it together, let it dry, and send to the Extension Soil Testing Laboratory, Box 9610, Mississippi State, MS 39762 for a lime requirement test. Your county Extension agent has boxes for collecting and shipping the soil samples.

Ponds in some areas of Mississippi may need as much as 3 tons of agricultural or dolomitic limestone per surface acre to bring the soil pH up to the point that phosphorous fertilizers can promote adequate growth of microscopic plants and animals. Spread lime in shallow water in the upper end of the pond, or on land, as close to the water's edge as possible, that drains directly into the pond. In new ponds, lime can be disked into the soil before filling the pond. Apply the lime 2 to 3 months before starting fertilization, and repeat every 3 to 4 years.

Type and Rate of Fertilizer To Use

Several methods and types of fertilization programs can be used, and all can be effective if the pond soil pH and water chemistry are in appropriate ranges. Pond fertilizers are available in liquid, granular, or powdered forms. Liquid fertilizers dissolve most readily, followed by powders, and then granular types.

Typical formulations for liquid fertilizers include 10-34-0 and 13-37-0; the key ingredient is phosphorous (middle number), and any similar formulation will be adequate. Apply these fertilizers at the rate of 1/2 to 1 gallon per surface acre, depending upon pond location and soil fertility.

Powdered, highly water-soluble fertilizers, such as 12-49-6 or 10-52-0, have recently become available and have proven to be effective and convenient to use. These formulations are typically applied at the rate of 4 to 8 pounds per surface acre.

Granular fertilizers are more traditional and are available in numerous formulations. Most older ponds respond well to a phosphorous-only fertilizer such as Triple Super Phosphate (0-46-0), which is the most economical formulation.

Ponds located in areas of rich soils (e. g., the Delta, Black Belt, and Jackson Prairie) should respond well to 4 pounds of 0-46-0 per surface acre. Those located in the red clay soils of north and central Mississippi Coastal Plain soils do best with 8 to 12 pounds of 0-46-0 per surface acre. In some areas, it may be difficult to buy 0-46-0, but 0-20-0 is usually available. If this is the case, use twice the amount recommended for 0-46-0. A relatively new granular technology provides a timed release of the fertilizer. This formulation is a 10-50-0 granular pellet that can be applied in the early spring and slowly releases fertilizer throughout the season.

How and When To Apply Fertilizer

Begin fertilization in the spring when water temperatures have stabilized at 60 degrees Fahrenheit, or higher. As a rule of thumb, this means about March 15 in south Mississippi and April 1 in central and north Mississippi.

If you use liquid, powder, or traditional granular formations, make the first three applications of fertilizer two weeks apart, then make another application whenever you can see your hand clearly with your arm under water at elbow depth. If you cannot make a check this way because of discoloration of the water from minerals, fertilize the pond at 3- to 4-week intervals from spring through September.

If you use the timed-released fertilizer, apply 25 pounds of pellets per acre. **This is a one-time application and will provide gradual release of nutrients until fall.** This one-time application eliminates the 6 to 12 periodic applications necessary with traditional fertilizers.

Never broadcast granular fertilizer, and never apply undiluted liquid fertilizer. In either case, the fertilizer will rapidly sink to the bottom and be tied up in soils rather than becoming available in the water. **Powdered formulations can be broadcast,** since they are highly water soluble and do not sink to become tied up in bottom muds.

If you use granular forms or the timed-release pellet, apply them in a way that minimizes fertilizer-soil contact. This can be accomplished by constructing fertilizer platforms -- one for each 5 to 6 acres of water. Build the platform so it can be raised or lowered. Lay the required number of sacks of fertilizer on the platforms so 4 inches of water will cover them. Tear off the top layer of each sack. Wave action will distribute the fertilizer throughout each pond.

Platform construction can be difficult in existing ponds. An alternative method is simply to place fertilizer bags in shallow water with the tops cut out. The bags serve to separate soil and fertilizer, and wave action will dissolve and distribute the fertilizer.

Dilute liquid fertilizer with at least two parts water to one part fertilizer before application. In small ponds, liquids can be sprayed effectively from the bank with hand-held sprayers. Boats make application easy in larger ponds. You can spray the diluted fertilizer over the water surface or allow it to flow into the prop-wash of an outboard motor. Powdered formulations can be poured directly on the water surface.

When Not To Fertilize

Some ponds should not be fertilized. Here are some cases where this is true:

- **Muddy ponds.** Mud prevents sunlight from passing through the water. Plankton must have sunlight to grow. If a pond stays muddy most of the time, do not fertilize the pond until the mud problem is corrected.
- **Ponds infested with trash fish.** If undesirable fish dominate the pond, poison the pond, restock, and then begin fertilizing. Request Extension Publication 1954 for details on renovating farm ponds.
- **Ponds infested with weeds.** During warm months pond weeds use up the fertilizer microscopic plants should get. Therefore, the pond stays clear even after repeated fertilizer applications.
- **Ponds not fished heavily.** Fertilizing a large pond is a waste of time and money if you fish it only occasionally. You just produce more fish that aren't caught.
- **Unbalanced fish population.** If the bream population is overcrowded, it means there are not enough bass to keep the bream down. It would be foolish to fertilize if this condition exists. Request Extension Publication 1952 and Information Sheet 1479 to determine balance and to correct problem populations.
- **Catfish ponds.** It is not necessary to fertilize catfish ponds if you follow a feeding program. Where a commercial feeding program is not followed, fertilize in the same manner as for bream-bass ponds.
- **Excessive water flow.** In some spring-fed ponds, the volume of water flowing through the pond is too high to maintain adequate plankton blooms. In this case, fertilizer is constantly being diluted and will have little positive effect.

How To Clear Up Muddy or Milky Ponds

Muddy water limits fish production because fish food must have sunlight to grow. Silt and mud deposits also cover fish eggs and fill your pond. Planting the entire watershed around the pond in grass and trees is the best method for permanent control of most muddy water.

In new or old ponds that stay muddy because of suspended clay particles, use gypsum at the rate of 15 to 35 pounds per 1,000 cubic feet of pond water. Spread the gypsum from a boat over the pond surface and stir with an outboard motor. The gypsum will keep the water clear as long as the gypsum is not washed from the pond. When used according to recommendations, it will not kill fish, change the pH of the water, or harm livestock. If livestock are muddying your pond, fence off the pond and install drinking troughs below the pond.

If the water in your pond stays **milky**, apply 75 pounds of cottonseed meal and 25 pounds of superphosphate per acre each time you apply the other fertilizer, until the water clears. When the water clears, return to your regular fish pond fertilization program.

Revised by **Dr. Martin W. Brunson**, Extension Leader/Fisheries Specialist, Department of Wildlife and Fisheries