

## **P2. Analysis of soil pH and liming**

**Aim-**To determine the soil pH and liming of the fish culturing pond by Boyd's method

### **Principle**

Liming is the application of calcium and magnesium compounds to the soil for the purpose of reducing soil acidity.

### **Materials required**

1. pH meter
2. Glass beaker
3. Distilled water
4. Soil sample
5. Weighing balance
6. p-nitrophenol buffer :

To prepare a p-nitrophenol buffer of pH 8.0. Dilute 20 g para-nitrophenol, 15 g boric acid, 75 g potassium hydroxide in one liter of distilled water. Check the pH using a standardized pH meter and adjust to the right pH by adding 7.5% potassium hydroxide (7.5 g/100 ml distilled water) or 1.5% boric acid (1.5 g/100 ml distilled water).

### **Procedure**

1. Weight 20 g of the sieved soil sample in 100 ml glass beaker and add 20 ml of distilled water. Stir intermittently for one hour.
2. Measure the pH of the above solution with a pH meter previously standardized and record the reading.
3. Add 20 ml of p-nitrophenol buffer to the above solution and stir intermittently for 20 minutes. Prior to reading its pH, set the pH meter to pH 8.0 with 1:1 mixture of the p-nitrophenol buffer and distilled water.
4. Read the pH of the soil sample (buffer/distilled water mixture) while stirring vigorously.
5. Use the values of the soil sample pH in distilled water and soil sample in buffered solution to obtain the liming rate.
6. If the pH of the soil in the buffered solution is below 7, repeat the analysis with 10 g of soil sample and double the liming rate.