

Abstract

The purpose of this thesis is to study the effectiveness of oxidants, lime of different types, water content of the bottom mud, water-washing, and burned by gasoline on reducing the organic matter of the bottom mud in an eel-culture pond after it has been drained and been dried in the sun.

The organic matter accumulates within the upper surface layer of pond bottom of 1 cm in depth after pond is cultured with eels after 2 months, whereas in 5 cm in depth after one year. The organic carbon is 15% higher in one-year culture pond than that of two-month one. The ratio of organic carbon to total nitrogen is 9.0:1 to 10.6:1 and 10.8:1 to 13.7:1, when the pond is cultured with eels for two months and one year, respectively. Therefore, organic carbon is selected as an indicator for organic matter content of bottom mud in this study.

Although the eel pond is drained and is dried in the sun until the pond bottom becomes cracked, the organic carbon of bottom mud is reduced 14% only, which is similar to the treatment when the bottom surface is sprinkled with water. However, organic carbon of bottom mud increases from surface to 3 cm below when the surface contains water of 10 cm in depth. When the bottom mud is washed with water, it is found that only 7% of total organic carbon is soluble.

The organic carbon is similar between groups after one month whether they are burned with gasoline or not. With or without being dried in the sun, the organic carbon is reduced 24% and 23% after 12 days when CaO of 2 kg/m² and Ca(OH)_2 of 2 kg/m² are added to bottom mud, respectively. After adding H_2O_2 of 30 l/m³ to bottom mud, the organic carbon reduced rapidly for the first two days then to 34% at the eleventh days, but it starts to increase after twelve days. When Ca(OCl)_2 of 0.5 kg/m² is added to bottom mud, the organic carbon is reduced 32% after 12 days and can last for as long as 35 days.

Since the organic carbon accumulates on the bottom in an eel pond with time, it is necessary to dry the pond in the sun after the pond is harvested and is drained. The chemicals can reduce the organic matter in the bottom mud but the effectiveness is varied with chemicals involved. The addition of H_2O_2 to bottom mud can reduce the organic matter effectively in short time, however, the effectiveness can not last for a long time. The addition of Ca(OCl)_2 to bottom mud can not only reduce the organic matter of mud but can last for at least 35 days.