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FERTILIZATION OF FRESHWATER FISH PONDS WITH COBALT AND ITS ADSORPTION AND DESORPTION IN THE POND SEDIMENT

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Abstract

The use of cobalt as a micro-nutrient fertilizer in the culture of the freshwater *Labeo rohita* was evaluated in terms of primary productivity, Chlorophyll *a* production, plankton volume and fish growth. Three cobalt doses (5, 10 and 15 kg $CoCl_2$/ha) were tested. In the 5 and 10 kg $CoCl_2$/ha treatments, primary productivity, Chlorophyll *a* production, plankton volume and growth of *Labeo rohita* increased ($p<0.05$). The highest increment was obtained in the 10 kg $CoCl_2$/ha treatment. The adsorption and desorption of the cobalt in the pond sediment fit the Langmuir isotherm. The highest adsorption and desorption values were found in pond sediments from the Dhenkanal area, due to its higher clay content, total Mn content and pH, indicating that sediments with a higher capacity to adsorb cobalt also have a higher capacity to desorb cobalt.

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