NUTRIENTS DYNAMIC OF POND MUDS FROM FISH FARMS

Florea Luiza, Maria Contoman, P. Lupoae

“Dunarea de Jos” University of Galati, Faculty of Food Science and Engineering, Department of Fishing and Aquaculture, 47, Domneasca street, Galati, RO 800008, Romania - luizafloreagl@yahoo.com

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SUMMARY

The fish farming activity in ponds may be considered to participate in polluting the natural water bodies, especially when ponds are emptied, when the sediments on the pond bottom are taken along and evacuated in natural waters. The main parameters which characterize the potential pollution of muds are: total N (%); phosphorus (ppm); potassium (ppm); pH; humus (%). The purpose of this paper is the characterisation of this main pollutant of pond muds. The average mud samples have been taken from eight ponds in two fish farms, Vladesti and Sovarca, situated in the same area, on the Lower Prut river. Land investigations took place in three different periods, October 2006, June 2007 and August 2007. These 24 samples were studied by the Regional Pedology and Agrochemistry Labs in Galati and the results are presented below.

The humus content present values over the limit of 3.44% (Dutta O. K., 2006), in 84% of the samples in the Sovarca fish farm and in 34% in the samples of Vladesti fish farm. The maximum values registered are 4.65% and 4.88% respectively, which oversteps the limit of 1.34 and 1.41 times respectively of the superior limit of fertility. The nitrogen content displays values over the limit of 0.05% $N_{total}$ (Dutta O. K., 2006), in all the 12 samples of mud analysed at the Sovarca fish farm, and at 10 samples at the Vladesti fish farm. The maximum values registers are over 4.6 and 4.8 times respectively the maximum fertility limit. The phosphorus content present values over the limit of 52.50 P$_{Al, ppm}$ (Sarma, D. K., et all., 2006) in 10 mud samples analysed at Sovarca and in 7 samples at Vladesti fish farm. The maximum values registered are 2.18, and 1.5 times respectively over the maximum fertility limit. The Potassium content of muds in Sovarca fish farm has varied relatively little around a general average of 290 K$_{Al, ppm}$, and in Vladesti it has varied quite a lot around a general average of 215 K$_{Al, ppm}$. The maximum values registered were 420 K$_{Al, ppm}$ and 396 K$_{Al, ppm}$ respectively.

Ponds in the two fish farms present a normal level of the organic matter, of phosphorus and potassium, but the nitrogen content in all the samples analysed, overstepping the limit by 4.5 times, which constitutes a potential pollutant of the natural receiver, i.e. the Prut river.

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