

THE EFFECTS OF COPPER, ZINC, AND  
CHROMIUM ON THE PERFORMANCE OF  
MODEL BATCH WASTE WATER  
STABILIZATION PONDS

BY

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## SUMMARY

The performance of a waste stabilization pond may be affected by many factors. Some of these factors are: mixing, temperature, pH, sunlight and toxic substances.

A study of model stabilization ponds to monitor the influence of different concentrations of copper, zinc and chromium was made. The waste water used was drawn from a primary stabilization pond. Glucose and tryptone were added to bring the organic loading to reasonable levels.

The initial concentrations of the metals were: 1, 3, 6 and 10 mg/l. There was a control model pond without addition of metal ions. Each batch of the wastewater was allowed to stabilize for about 25 days and sampling was usually done every other day. Samples were taken and analysed for COD, BOD, pH, DO and the metal ion concentration in the supernatant. The wastewater was also observed under a microscope to find out the types of microorganisms present.

There was no artificial lighting. The model pond were placed in a room where it was thought that sufficient natural sunlight was available for the photosynthetic process. There was no mixing as

wind action was present.

From the observations and experimental results obtained, it was apparent that the ponds maintained proper performance. There was a tremendous growth of algae after the initial anaerobic action. Blue green algae and euglena were dominant. Also rotifers were present.