Viruses and some akuati cinsects as indian tors of water pollutton

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Forty eight water samples were collected from four sites in MitMazah sewage treatment plant at Dakahlia governorate. Samples werecollected during (May 1991 to April 1992).Effiuent of two step treatment system1- Influent of an oxidation or Maturation pond.2- Maturation pond effiuent discharge befor mixing with the receivingAgiculture drain water.3- 100 meter upstream, before the point of discharge.4- 100 meter down stream, after discharge pointThe results showed that all sampling locations were stronglydominated by four Taxonomic orders :-order : Hemiptera were presented by 39.8% along the all season.order : Odonata were presented by 31.7% along the all season.order : Diptera were presented by 18% along the all season.order: Coleoperta .• were Presented by 1I .6% along the all season.•For virological study two methods of virus concentration werecarried out to evaluate the effeicency of different membrane filters forenteroviruses recovery from wastewater. The results showed that no greatdifference in Nitrocellulose membrane effeicency with and withoutconditioning where the percentage of recovery were 40% and 30%respectively.In case of glass micro fiber filter the percentage of recovery were40% and 20% respectively.The percentage of virus recovery were the same after conditioning;So we started the concentration process with nitrocellulose membme.To increase the possibility of virus isolation, three types of cellcultures were used, African green Monkey Kidney (Vero) cells, Buffiuogreen Monkey (BGM) cells, and Mosquito cell line C636.The results showed that BGM cell lines were more sensitive andspeed than vero cell lines enteroviruses isolation, while mosquito cell linesC636 were not sensitive.DOT-ELISA was used to detect enteroviruses ill cell cultureharvests at the third passage in BGM cell. The results showed thatPoliovirus type III was dominont in somples (37.2%) followed byCoxsackievirus type B4 (21.5%), Poliovirus type I (16.6%) Poliovirus typeII (13.7%), Coxsackievirus A6 was detcted in 10.7% of the investigatedsamples. Rotavirus was not detected in all samples. So the wastewatertreatment plant faild to remove most enteric viruss investigated.The results showed the need for more efficient disinfection step forthe treated efl’uents. Chlorine, Ozone, and Ultraviolt radiation were usedfor virus inactivation. Complete inactivation of Poliovirus type II (Salkstrain) obtained at chlorine dose of 20 mgIL (residua chlorine was 1.30mgIL) detention time was 30 minutes, While the dose for inactivation ofCoxsackievirus B4 was 30 mgIL .In case of Ozone treatment, the doses of ozone used for Poliovius IIinactivation were 319 mgIL/h for 17 min for seeded effluent sample, were• as for

Coxsackievirus B4, the dose must be over 21 min.In case of the effect of ultraviolet exposure time for disinfection ofpoliovirus type II and Coxsackievirus B4 were the same 20 secound forseeded effluent samples.Regression analysis of Polioviruses type II (salk strain) andCoxsackievirus B4 revealed that : with increasing doses of differentdisinfectants, increase the inactivation effieciency of different viruses.Revealed high regression coeffiecient, this means that Ozone is the mostsuitable disinfectant for Coxsackievirus B4 and Poliovirus type II were theregression coefficient (~) reached to 0.72 for Coxsackievirus B4 and 0.92for Poliovirus type II.