Vol. 4 (2000) Nos.1-4. Journal of International Academy of Physical Sciences pp. 83-91

Physico-Chemical Analysis of Waste Water and its Management

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(Received October 10, 2000)

Introduction

In India no attention has yet been paid to the analysis and management of waste water from the out drains of municipal areas and small towns. Such wastes pass unused and unmanaged which later on, cause environmental pollution resulting into health hazards, diseases and epidemics. Keeping all these factors in mind in the present investigation a physico-chemical analysis of waste water from the drains of Mariahun municipal area (Jaunpur) has been done. Some feasible processes of management of waste water have been proposed which may make the municipal board financially sound, self dependent and the waste eco-friendly.

In the present investigation the drain water of the east zone of the focal area has been analysed quantitatively and qualitatively. The daily, monthly and annual out flow of the drain water has been estimated and analysis for N_2, P, K and Na has been done. The use and applicability[1,2] of waste-water have been evolved in the light of farming and horticulture. An attempt has been made to make the waste eco-friendly with the help of adsorption technique.

Experimental

The experimental aspects of investigation involve the operations :

1. Population census of Mariahun municipal area (Jaunpur) from 1951-2000. (Fig. 1).

2. Estimation of daily, monthwise and annual quantitative water resources in Mariahun municipal area from 1998-2000. This has been done from all the possible and available resources in kL. (Fig. 2 & 3).

3. Qualitative and Quantitative analysis of waste-water for N_2, P, K and Na has been done. (Fig. 4, 5, 6).

* Contact Person for further corresponence.

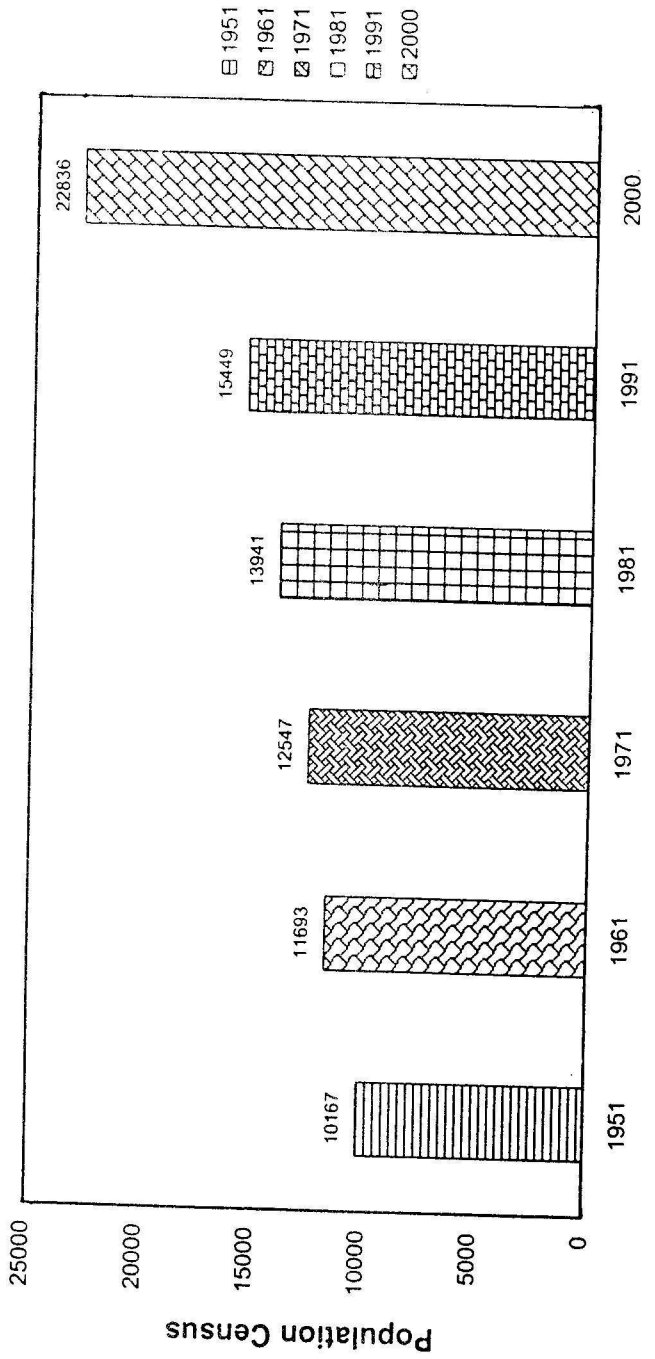

Fig.1. Population census of Mariahun municipal area (Jaunpur) from 1951-2000.

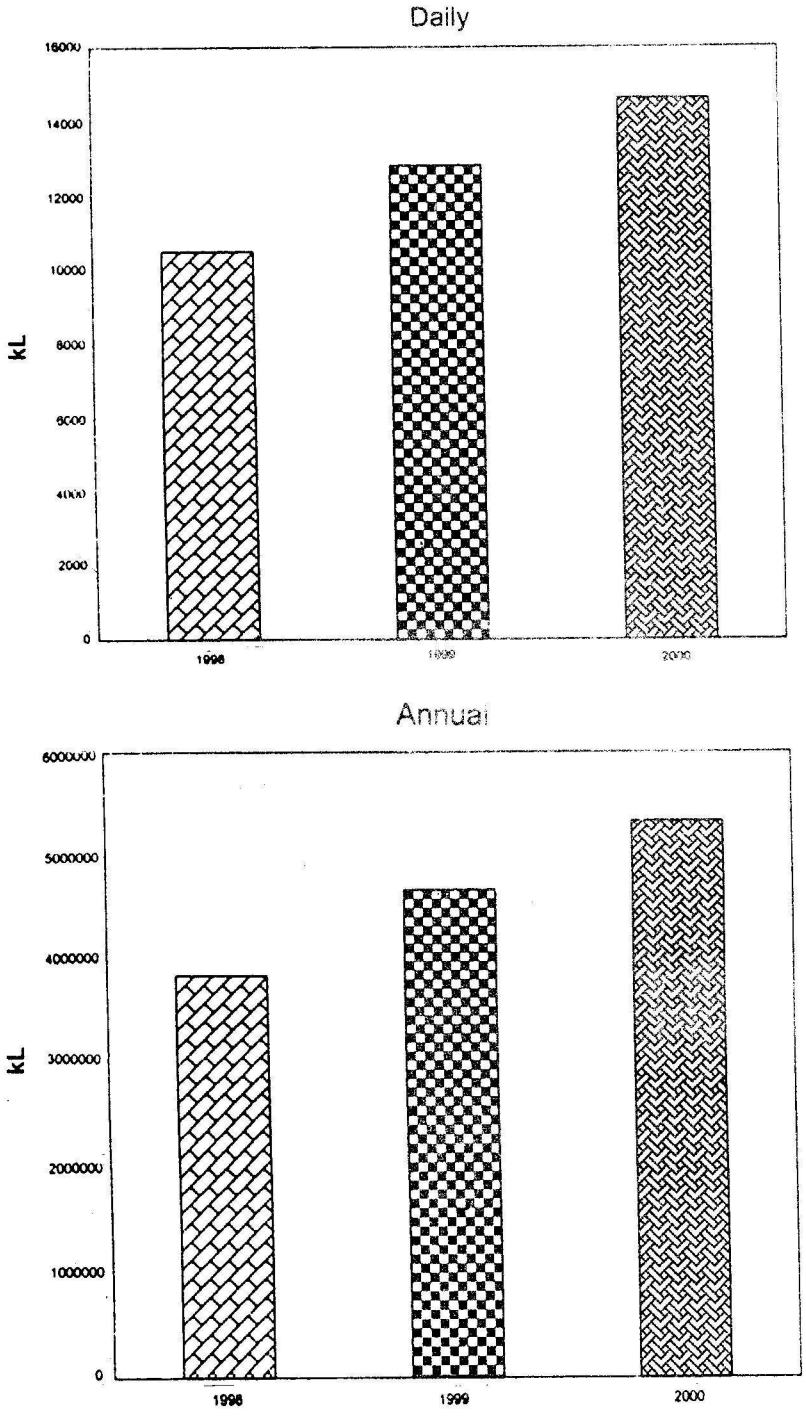

Fig. 2. Quantitative Water Resources in kL (Daily & Annual, 1998-2000)

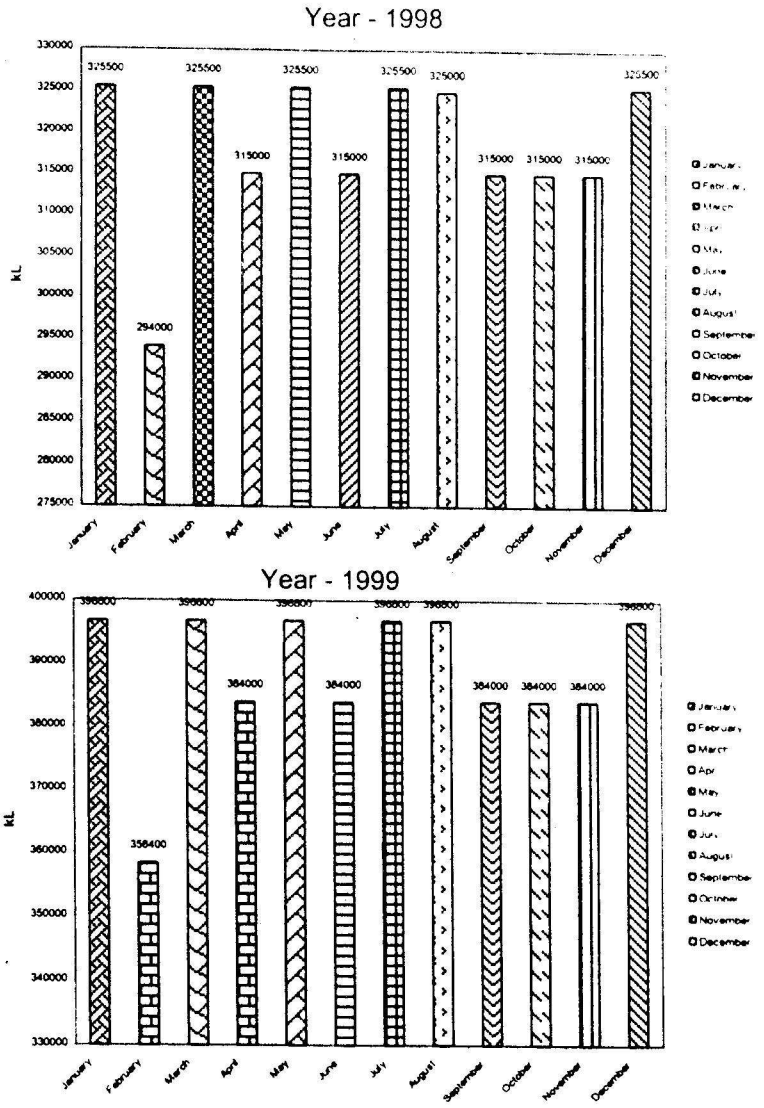

Fig. 3. Monthwise Quantitative Water Resources (kL) in Mariahun (Municipal area)

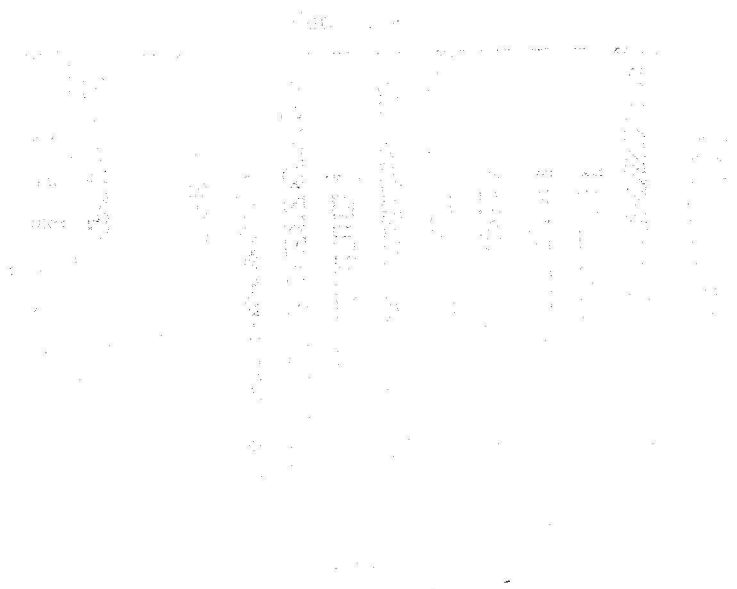

Fig. 3 : [illegible]

4. The [illegible] irrigation [illegible] evaluated [illegible]

Results and Discussion

An [illegible] that [illegible] 15449 and [illegible] pollution [illegible] daily on [illegible] U. in 199[illegible] and annua[illegible] flow has [illegible] water from [illegible] to men, and [illegible]

The [illegible] 12905.83, [illegible] 5233.83 respec[illegible] nearly 41% of [illegible] 1999 N_2, P and [illegible] equivalent [illegible] equivalent to Rs [illegible] of the total income of the [illegible] not due [illegible]

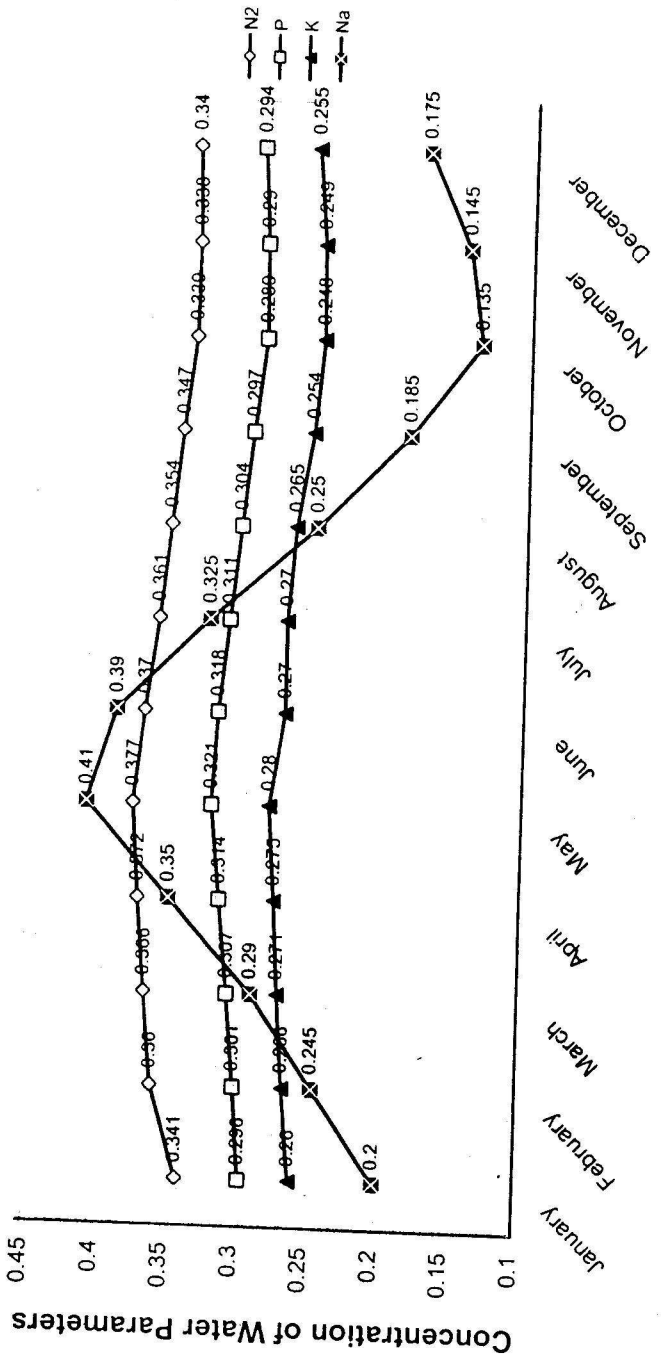

Fig. 4. Monthwise concentration variation of Ingredients of Waste Water Out Flow in East Zone of Mariyahun (Municipal area) Area Year 1998

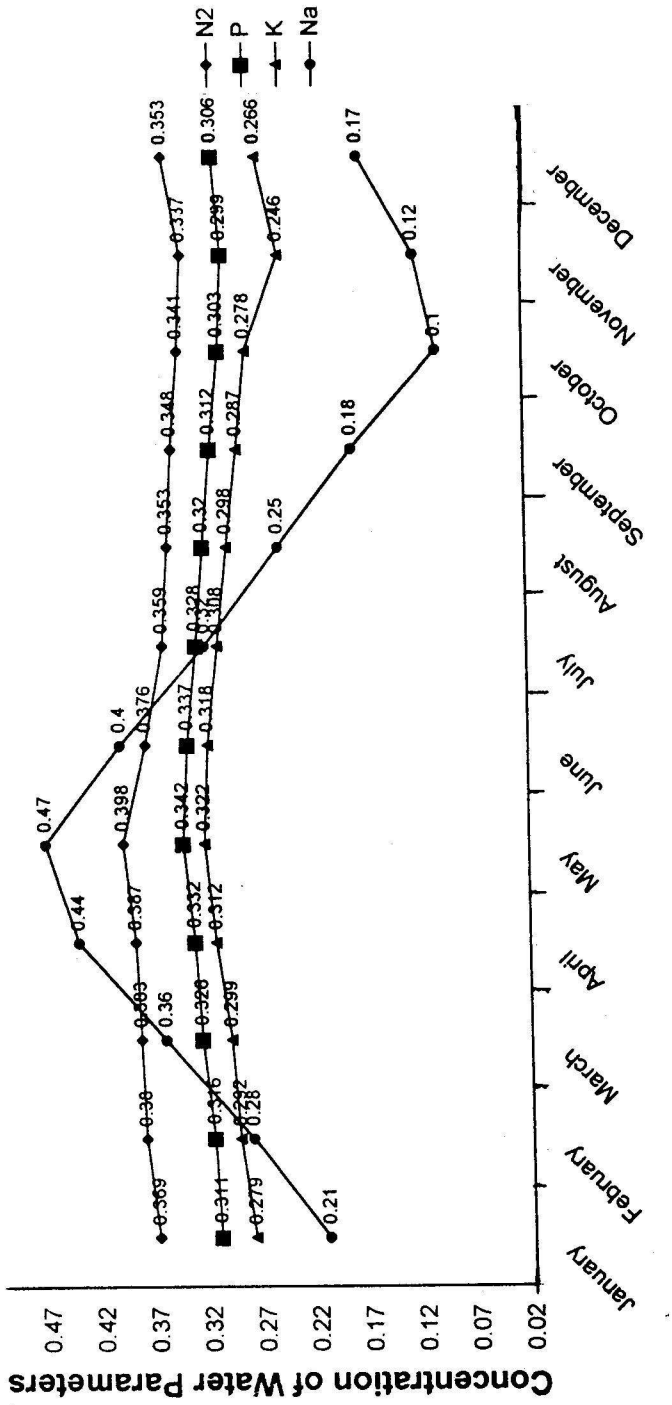

Fig. 5. Monthwise concentration variation of Ingredients of Waste Water Out Flow in East Zone of Mariyahun (Municipal area) Area Year 1999

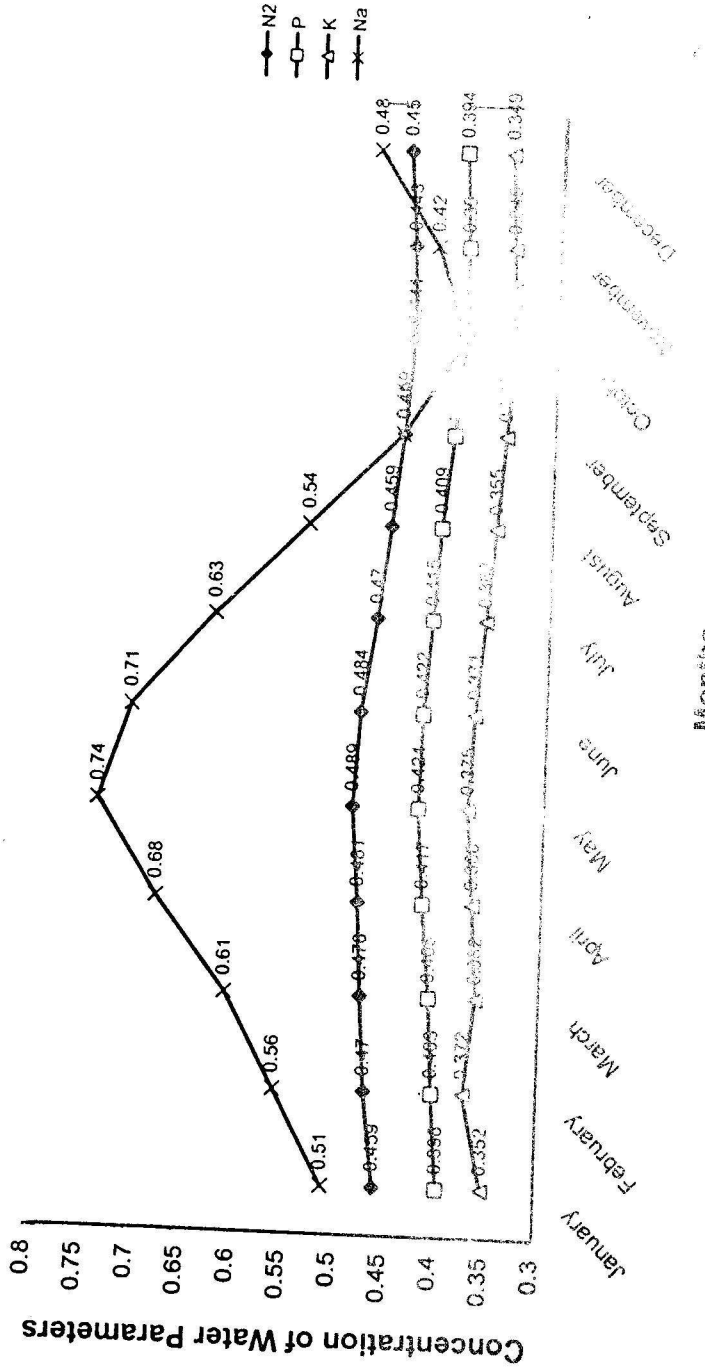

Fig. 6. Monthwise concentration variation of Ingredients of Waste Water Out Flow in East Zone of Mariyahun (Municipal area) Area Year 2000

board. In 2000 the N_2, P and K drained in the east zone of the municipal board amount to Rs. 2474.16 kg equivalent to Rs. 5332.25, 2161.53 kg equivalent to Rs. 885306.0 and 1903.48 kg equivalent to Rs. 9863.80 respectively. In this year the nutrients contribute to 41.12% of the total income of the municipal board. The values may be compared from the national and U.P. State[3] consumption ratio of N, P, K during the relevant year.

In addition to it the crop yield including grain and fodder along with the percent germination and food quality[4] have a raised value due to the use of drain water for the irrigation purposes.

The observations are found highly significant because of relatively small economy in proportion to very large population, scarce resources and a large Ag sector which is roughly 29% of G. D. P. with sub level nutrients[5]. Growth in India is greatly affected by its agricultural sector which needs to be healthy for the overall growth of the nation. No doubt, there will be long term effects of drain water on crop production and soil properties as observed by some investigators[6-10].

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