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Microbiological Characteristics of River Ganga In Between Khankhal to Bhogpur

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Abstract: The Present Study indicates the microbiological characteristic of water quality, monitoring, its techniques of standard plate count S P C bacteriological as the human population increases people to express their desire for a better standard of living and as economic activities continue to expand in scale and diversity, the demand for freshwater resources continue to grow .Due to sewage inflow caused a severe and persistent microbial pollution in the urban tanks of the city. A regular monitoring of water bodies with the required number of environmental parameters including that bacteria logical growth.

Keyword: Bacteria Standard Plate Count.

INTRODUCTION

The main objective of this study was to measure the level of contamination in Ganga river using several different techniques in Ecolife bacterial identification and confirmatory or isolation faecal coliforms are a group of gram negative, facultative, anaerobic, aerobic, rod, spiral shaped, bacteria that ferment lactose to produce acid and gas within 48 hrs at 45˚C, E Coli bacteria is an excellent indicator of faecal contamination on Moreover, faecal, coliforms that grow and ferment lactose at elevated incubation temperature. Coliform and faecal coliforms are established indicator organism are reliable and a very sensitive method for detection of faecal contamination in water due to sewage disposal or through other means.
As well as faecal coliforms in various water sources like municipal, surface water.

MATERIAL AND METHOD

Place of work, the study was conducted at the Department of Zoology Kanya Gurukul Haridwar, India.
This study covers stress up to 5 km on the study site.
Collection of samples. 15 sample of water 250 ml were collected ascetically in a sterile glass bottle from Ganga River.
Standard plate count (S P C) on a solid medium on the counting of an organism depend upon the fact that living cells will produce sufficient progeny to form a colony visible to naked eyes.
Since bacteria occurring in water are single cell pairs groups or even dense clumps, not every individual cell will develop into a separate colony on incubation results expressed in cell forming unit (CFU) per ml.

N.A.M. (Nutrient Agar Medium)
Preparation of serial dilution: 5 or 6 cultures tubes each containing 9 ml disliked water, were sterilized after plugging the sample were vigorously shaken and 1 ml was transfers to the first culture tube.
Now 1 ml water from the first tube was again transferred to the 2nd test tube and so on the dilution were 1:10, 1:100, and 1:1000 and so on. MPN (Most Probable Number) The bacteriological quality of water is based on testing for bacterial species of known excreted origin particularly organism of the Coliform group, It included all the aerobic and facultative and aerobic, gram negative on spouting bacilli that produce acid and gas from the fermentation of lactose.

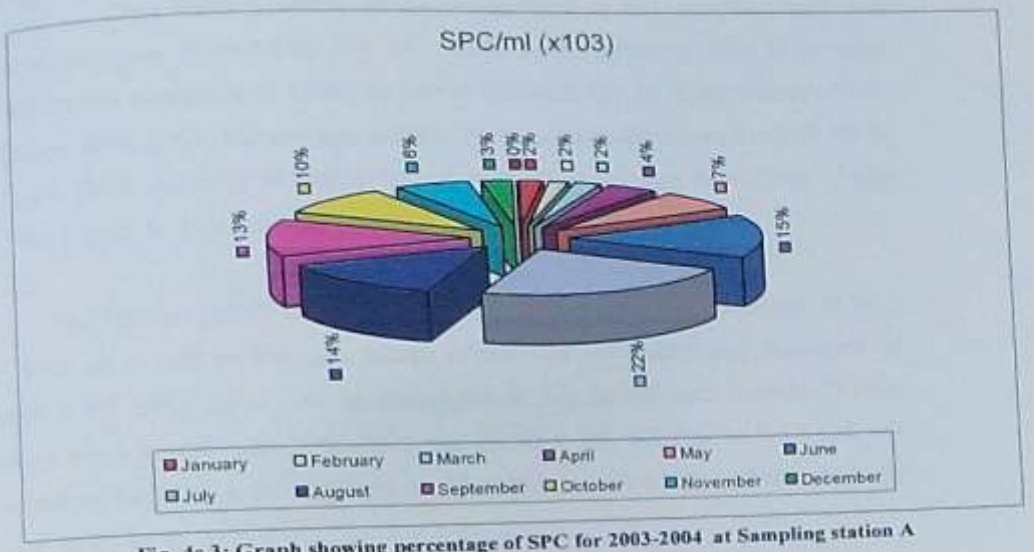

Fig. 4c.3: Graph showing percentage of SPC for 2003-2004 at Sampling station A

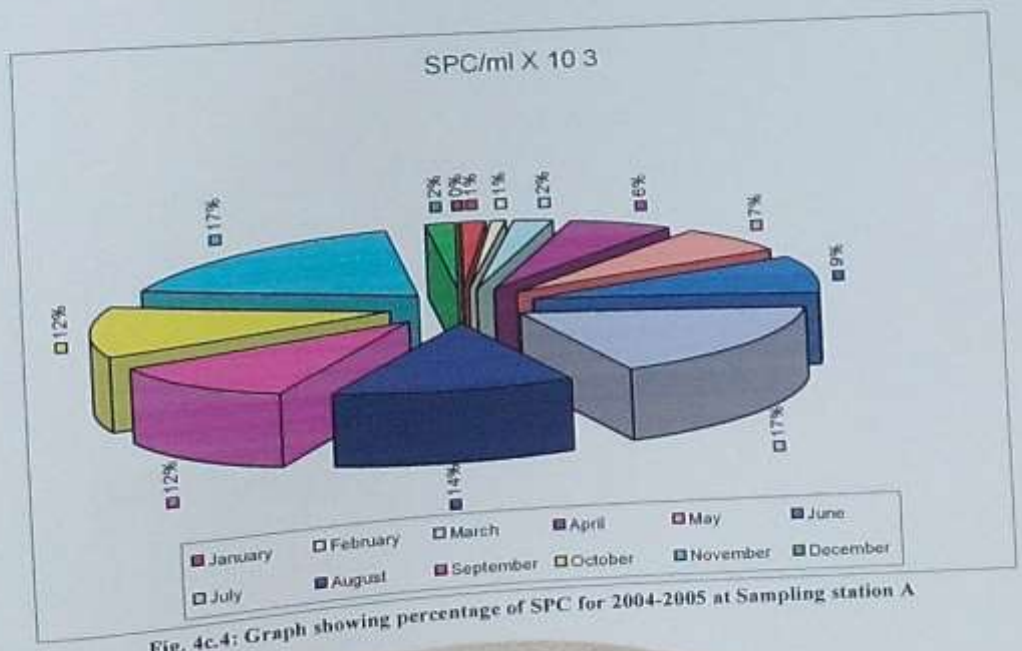

Fig. 4c.4: Graph showing percentage of SPC for 2004-2005 at Sampling station A

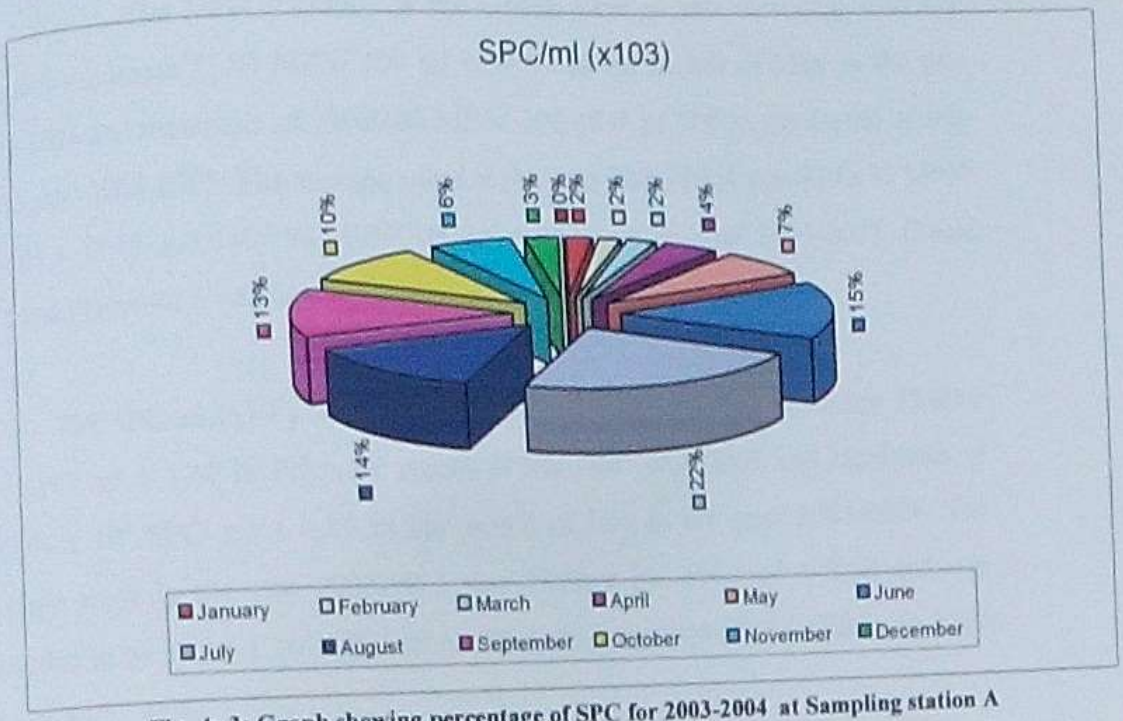

Fig. 4c.3: Graph showing percentage of SPC for 2003-2004 at Sampling station A

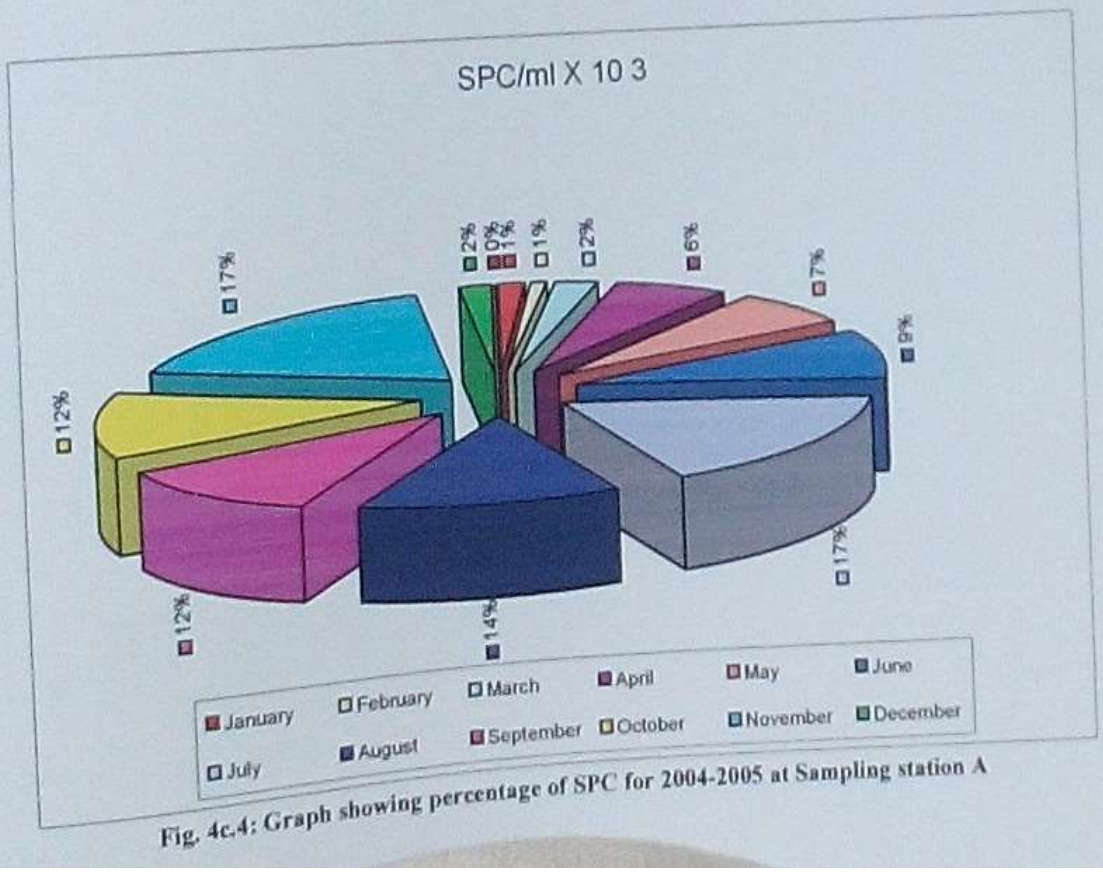

Fig. 4c.4: Graph showing percentage of SPC for 2004-2005 at Sampling station A

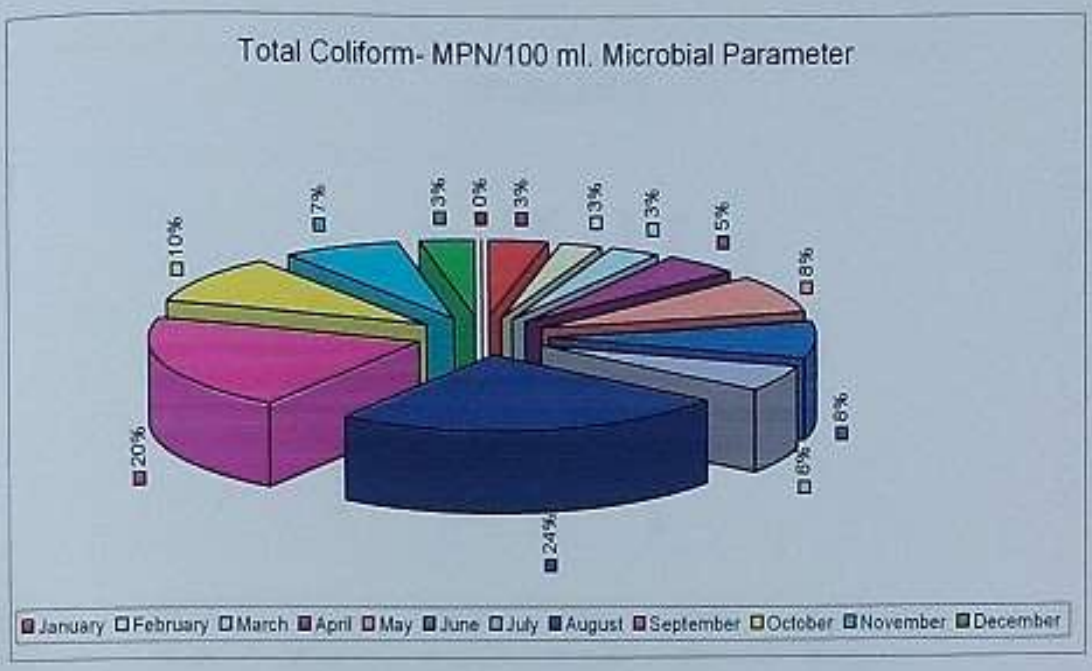

Fig. 4c.1: Graph showing percentage of total coli form for 2003-2004 at Sampling station A

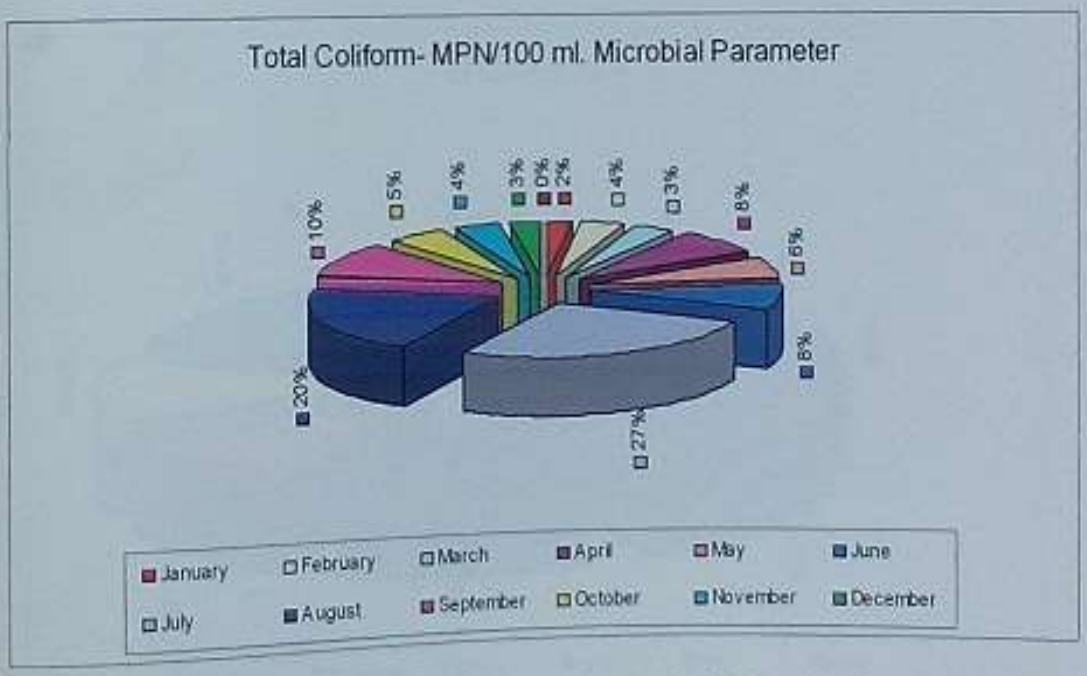

Fig. 4c.2: Graph showing percentage of total coli form for 2004-2005 at Sampling station A

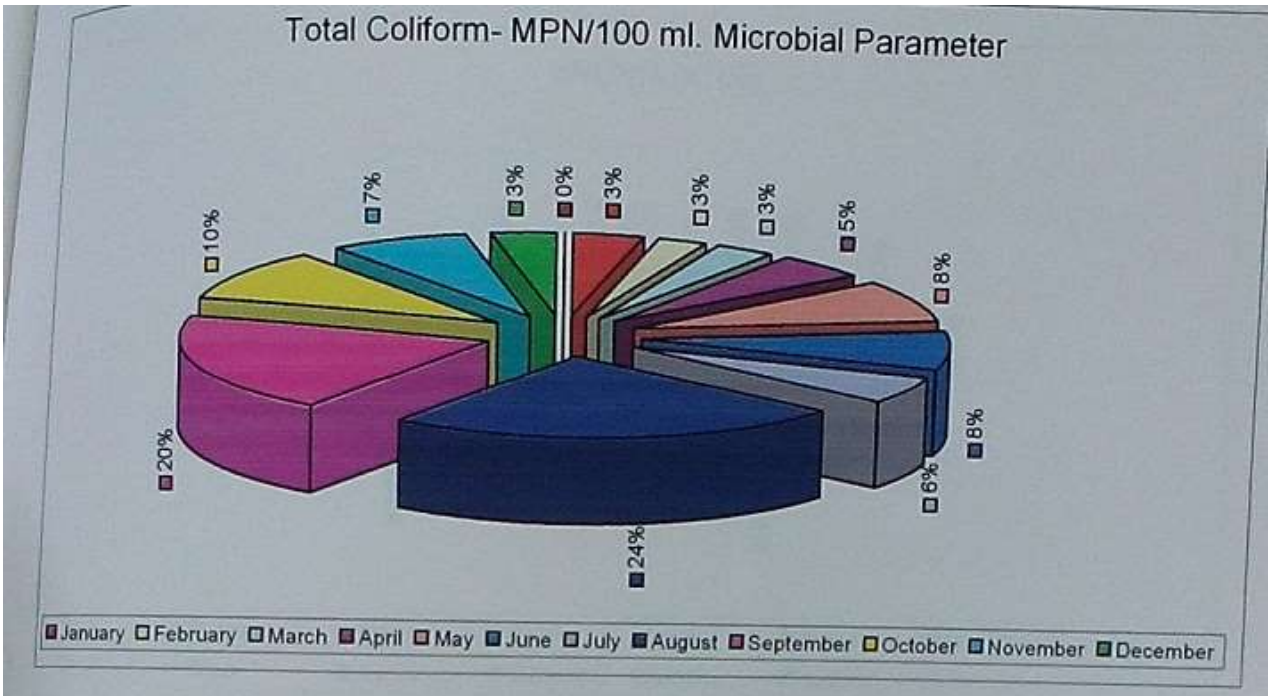

Fig. 4c.1: Graph showing percentage of total coli form for 2003-2004 at Sampling station A

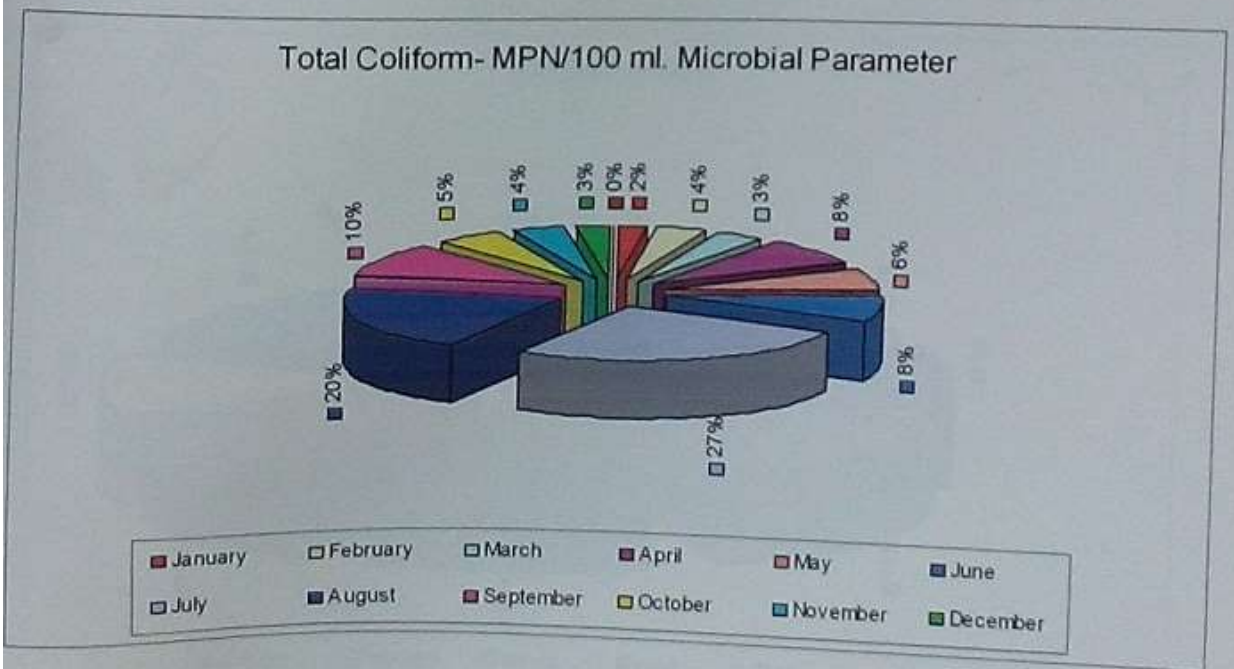

Fig. 4c.2: Graph showing percentage of total coli form for 2004-2005 at Sampling station A

Presumptive Test, Confirmatory Test (by Mac Conkey's Broth, Brilliant Green Lactose Bile (BGLB) broth is used.Serial dilution of the sample of river water was prepared. Dilution above than 1:1000 is required, 5 fermentation tubes for each dilution were filled with 9 ml of broth and one Durham's vial was put in inverts condition incubated at 35-37˚C Gas production in Durham's tube show positive (± ve) or tiny bubble be negative tubes were included for further 24 hours to confirm the test.
Confirmative test for this Brilliant green lactose broth 9B G L B) is used.

Fermentation tubes with 10 ml/BGLB broth and inverted Durham's tube were prepared. The number of tubes should be equal to all ± ve tube in the presumptive test Positive were shaken gently. One lapful of liquid was transferred to the tubes having BGLB with the help of inoculation loop. These tubes were inoculation loop. The tubes were incubated at 35-37˚C for 48 hours. The tubes were recorded as positive, which showed the gas production. The number of positive tubes was put in MPN Table and then in the formula calculate MPN/100ml.
Calculation: MPN/100ml =MPN Table value × 10 /starting value

RESULTS AND DISCUSSION

The S P C/ml (× 10The S P C/ml (× 10^3) of sampling station were recorded. Minimum 10.00 × 10^3 S P C /ml ± 1.00 in February month of the year 2004-2005.and maximum of 200.00× 10^3 S P C/ml ± 3.00 in the month of July in the year 2004-2005. The average value in the year 2003-2004was 63.77× 10^3 S P C /ml ± 2.01 and was recorded to be 97.42 × 10^3 S P C /ml ± 2.45 in the year 2004-2005.(Tables 4C .1 and figure 4C.3 -4C.4)
The MPN(/100 ml of the Ganga river at the sampling spot was recorded minimum 700.00 MPN/100 ml ± 15.00 in the month of January in the year 2004-2005 and maximum of 8600.00 MPN/100 ml ± 72.00 in the month of July in the year 2004-2005. The average value in the year 2003-2004 was 2698.83 MPN/100 ml ± 45.33 and 2658.33 MPN/100 ml ±29.83 in the year 2004-2005, Table 4C.1 and FIGURE 4C.1-4C.2

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