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STUDY OF CHLORIDE PRESENT IN THE POND WATER SAMPLE OF SANPADA, NAVI MUMBAI

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ABSTRACT:

The Pond water samples were collected from, Sanpada, Navi Mumbai and analysed every month throughout the year. So, we have studied levels of chloride in pond water sample from Sanpada, Navi Mumbai. Average concentration of Chloride 21.52 mg/lit in June to average concentration of chloride 30.16 mg/lit in November.

Key words: Pond water sample, Pollutants, chlorides.

INTRODUCTION:

Water pollution is the biggest problem in the World. Due to tremendous increase in the growth of population, Industrialization and urbanisation we are facing the problems of water pollution. Due to interference of human's activities in pond like washing clothes, washing animals, cars etc. adversely affected on pond water and water is polluted. To minimise the concentration of chlorides in pond water samples we selected pond water sample for study purpose . In the present study, the level of chloride were studied in the pond water sample of sanpada, Navi Mumbai. The pond water samples were collected from different six sites for the study purpose. Pond water sample collected in the glass bottles by following standard procedure. Samples were taken from sanpada, Navi Mumbai 1.Vashi lake 2. Nmmc fountain 3. Palm Beach lake 4.chinchpokali Talav 4.Sarsola pond 5.Nerul lake 6. Seawood lake. The samples were collected every month for six months and analysed in laboratory for the levels of chlorides.

EXPERIMENTAL METHODOLOGY:

For determination of chloride Chloride concentration in the water is determined by several methods viz argenometric or Mohr's method. Mercuric method and potentiometric method. In the present study, argentometric method was considered suitable for the determination of chloride ions. In neutral or alkaline solution , potassium chromate indicates the end point of titration of chloride AgNo3 reacts with chloride ions to form very slightly soluble white ppt precipitate of silver chloride. After all the chloride is removed, the indicator changes its colour to reddish brown of silver chromate. Ag+ + Cl- ------ Agcl (white ppt) 2Ag + + CrO4 -------Ag2CrO4 (Reddish brown PPt) Reagents a) Standard silver nitrate solution – (0.02N). Dissolve

3.4 g of dried AgNO3 (A.R.) in distilled water to make 1 litre of solution in an amber coloured bottle and kept in dark, away from light.

For the present study pond Water sample from six stations for every month (30ml) was taken in a conical flask and 2ml K2Cr2O7 was added to it. The solution was titrated against 0.02 N AgNO3. End point was taken when persistent red ring appeared, concentration of chloride (Cl-) ions was determined using the following formula. Chloride mg/lit = N x ml of AgNO3x35.5x1000 ml of sample used Where, N= Normality of AgNO3

RESULTS AND DISCUSSION:

In pond water sample concentration of chlorides ranged from minimum 14.20 mg/lit in November (Station - 1, Vashi lake) to maximum 80.20. mg/lit in November (station -4 , Sarsola Pond) (Table No - 1). Average concentration of Chloride 21.52 mg/lit in June to average concentration of chloride 30.16 mg/lit in November.

We studied the Season wise concentration of chlorides minimum 15.54 mg/lit in summer season , 23.73 mg/lit in Rainy season and 14.70 mg/lit in winter season and maximum in summer season 122.35 mg/lit, in Rainy season 38.90 mg/lit and 90.70 mg/lit in Winter season (Table No : 2 , Stations 1,2,1 (Vashi lake, Nmmc fountain, Vashi lake.) and Stations 6, 4, 6) (Seawood lake, Srsola Pond , Seawood lake.). Higher values of chloride observed in summer season in the present study. Thus, high chloride level, polluting surface waters i.e. Originates from an industrial effluent. Human's activities etc.

Table -1: Level of Chlorides (mg/lit) in Pond Water Sample

Stations	June	July	August	September	October	November
1	15.60	26.95	26.70	16.34	17.21	14.20
2	15.62	19.85	26.75	15.20	16.21	24.15
3	20.30	21.30	45.44	21.34	20.30	34.08
4	61.50	45.44	28.40	20.35	22.34	80.20
5	20.70	28.41	30.42	30.32	32.31	70.10
6	40.80	29.81	30.85	29.51	31.50	31.24

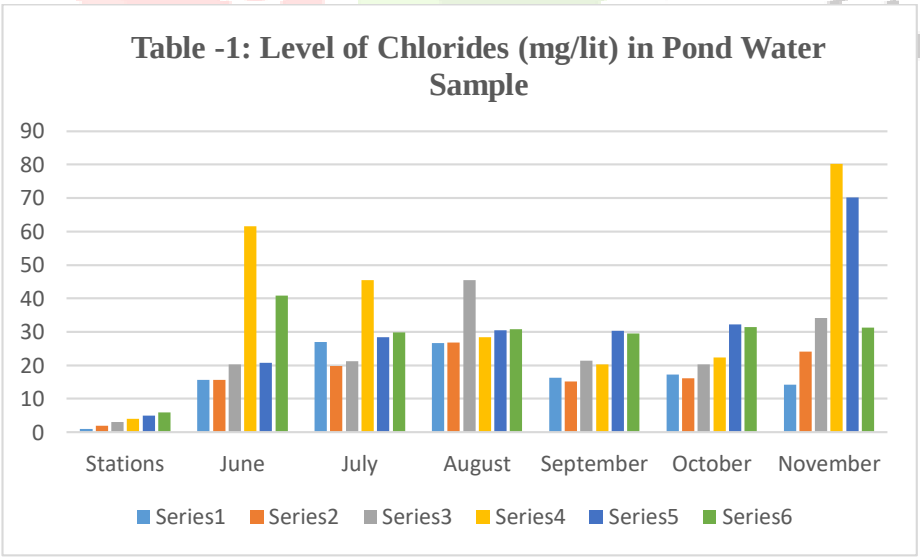


Fig. 1: Chloride (mg/lit) in Pond Water Sample

Average	21.52	28.27	27.81	24.08	25.83	30.16
S.D.	14.91	9.61	6.43	4.97	5.54	22.10

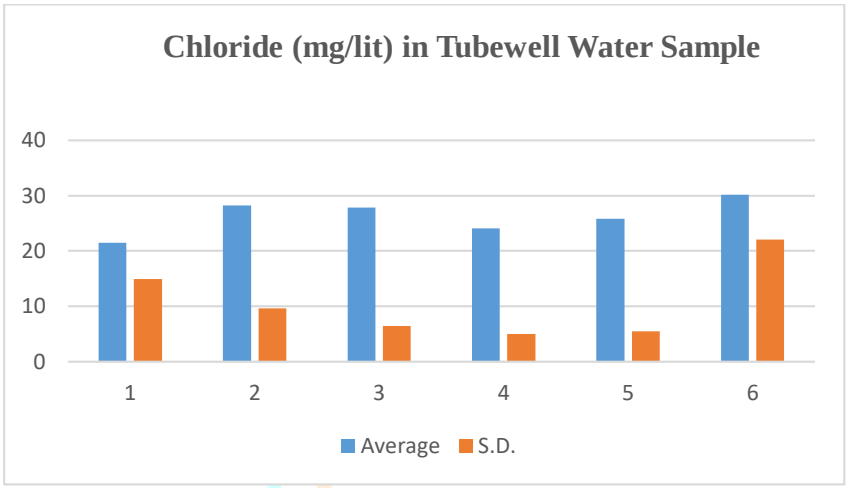
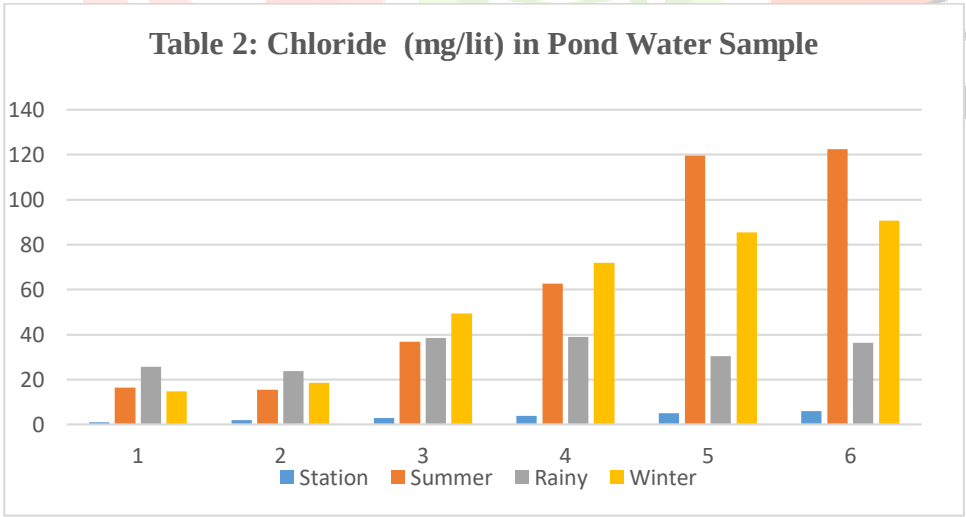


Table 2: Chloride (mg/lit) in Pond Water Sample

Station	Summer	Rainy	Winter
1	16.50	25.63	14.70
2	15.54	23.73	18.71
3	36.80	38.45	49.37
4	62.71	38.90	72.06
5	119.65	30.45	85.54
6	122.35	36.40	90.70



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