351/11/9/13

Name of the Scholar:-.....Mohd. Waseem.....
Name of the Supervisor:-.....Prof. Weqar Ahmad Siddiqui.....
Department:- .....Applied Sciences & Humanities, Faculty of Engineering &
.....Technology, Jamia Millia Islamia, New Delhi.....
Thesis Title:-..... Determination of Physico-chemical & Biological.....
.....Parameters for Surface and Ground Water Quality .....
.....in and around the town of Shamli.....
.....In Muzaffarnager District.....

The chapter Ground Water Hydrology In rural Parts of Muzaffarnager District, Uttar Pradesh, India. The study has led us to conclude that the ground that ground water samples of the studied site are acceptable for drinking purposes It has been observed that the amounts of almost all the indicative physicochemical parameters fall within the permissible limits of drinking of BIS. Studies on heavy metals indicate that the amount of Zn in all the samples is below the permissible limit, however other important heavy metals present accordingly with the permissible limit. It is concluded therefore that the ground water of the entire sampling site is safe for drinking and other domestic purposes.

This chapter "A Comparative Study of Sugar Mill Treated and Untreated Effluent-A Case Study" The sugar industry situated at shamli, Muzaffarnager western Utter Pradesh is one of the good factory as it has own distillery unit in its own premises for waste which is generated from the sugar factory. Even though the mill takes care to avoid pollution, additional measures for environmental protection initiated by the sugar industry with some modification in effluent treatment plant are necessary.
Thus the sugar industry effluent which is untreated exhibits high COD, BOD, TDS, contents and low contents of DO which is toxic to plants, so it is not permissible for irrigation. Treated effluent of sugar industry which is well balanced of chemicals if it is diluted with other fresh water, will be suitable for irrigation purposes. The treated effluents of sugar industry are not highly polluted and they satisfy the BIS Indian standard values.

The chapter Determination of Heavy Metals in Vegetables Irrigated with Hindon River water western UP India. Concluded that heavy metal deposition are associated a wide range of sources such as small scale industries (including battery coating industries); brick kiln, vehicular emissions, re-suspended road dust and diesel generator sets can all be important contributors to the contamination found in vegetables. Additional potential sources of heavy metals in field locations in urban and per urban areas including irrigation water contaminated by industrial effluent leading to contaminated soil and vegetables. To avoid entrance of metals into the food chain, municipal or industrial waste

should not be drained into rivers and farmlands without prior treatment. A part from treating the discharge that enters into the farms, it is also imperative to utilize alternative measures of cleaning up the already contaminated substances. Although there is a general tolerable level of metal in vegetable from Hindon river site at the movement, there are exceptional case of metal build up such as Cadmium and Lead in feature. The daily intake of these metals at present is much less than concentrations that affect health; the situation could however change in the future depending on the dietary pattern of the community and the volume of contaminants added to the ecosystems. Data showed that genotypic differences in tolerance and co tolerance to heavy metals are well known in some species and ecotypes of natural vegetation. Perhaps the most important conclusion that may be drawn from the findings of the study, is that since vegetable tend to absorb and accumulate parts of the plant and in view of their important role in the food chain, it is recommended that these type of plants should not be cultivated in the field irrigated by urban and industrial waste water or water contaminated by heavy metals.

Study of Fluoride level in the Ground Water of Western Uttar Pradesh (India)

Based on the concentration of fluoride prescribed for drinking water standard (ISI, 2000), the investigation are classified into three category : low < 1.00 mg/l; moderate F^- with 1.2- 1.8 mg/l and High F^- 2.00-3.2 mg/L (Table-1). Fluoride level in water is normally controlled by the calcium and magnesium salts. Higher the values of calcium and magnesium, higher will be the presence of Fluoride ions. Rivers and lakes generally contain fluoride levels less than 0.5mg per liter, but ground water, particularly in volcanic or mountains areas can contain as much as 50 mg per liter. [10] When fluoride content exceeds 2.0 ppm, then brownish spots varying from small to large in size, can be seen on numerous teeth in the great majority of the members of the exposed community. When the fluoride contents more than 2.5 ppm the enamel loses its smoothness: signs of serious dental hyper-fluorosis. The symptoms of intoxication appeared in immigrants one to four year after their arrival. The finding that it takes one to four year for symptoms to manifest themselves is at variance of 30-40 years in an endemic area was required for a definite picture of skeletal fluorosis to develop. An exceptionally high content of water fluoride (2 -5 ppm), excessive heat (45°C) and a poor state of nutrition, the diet being deficient in Ca & vitamin-C may be possible factor responsible for the early development of skeletal fluorosis Utter Pradesh.

Though the government is committed for the supply of safe drinking and potable water, the plans are yet to prove themselves practical. Many NG Os have come up in different part of country to provide fluorine free water in rural areas. Different de-fluorination techniques of ground water. Herbal and simple technique with the use of Soda lime, Bleaching powder and alum is recommended for the de-fluorination of ground water in the study area.