

Executive Summary of UGC Minor Research Project

Iron status of women in association with the iron concentration of potable water in the Chandrapur district of Maharashtra

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Executive Summary of the Research Project

To ascertain the correlation between groundwater iron and iron concentration in the blood of women from the Chandrapur district of Maharashtra this study was carried out in 2012-2013. Groundwater sampling by grab method was carried out from 36 sampling locations comprises of hand pumps (34) and dug wells (2) for winter 2012 and summer 2013. Groundwater iron concentration was estimated by Inductive Coupled Plasma (ICP OES, model Dv 7000). From the results it was found that out of these 36 sampling locations, 11 sampling locations from eight talukas of the study area had groundwater iron concentration above the desirable limit of Indian Standards (IS 10500;1991, 0.3 ppm) and these villagers were totally depends upon groundwater as a source of potable water. Lohara village was identified to ascertain the correlation of groundwater iron and iron concentration in women, Venous blood samples (3 mL) was collected from seven women volunteers from the study area from which serum ferritin was assessed by Ferritin-ELISA analysis kit (Orgentic ORG 5FE). Ferritin level was observed in the range of 10.42 ng/mL to 41.23 ng/mL. The serum ferritin level was within the normal range (Females of 20-50 years, 22-112 ng/mL) from the study area. It may be concluded that groundwater iron helps in maintenance of serum ferritin level. The excess iron does not get stored in the body, as it is being excreted through fecal matter thus an equilibrium is maintained.