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## Hydrochemical characterization and spatial distribution of fluoride in groundwater of Delhi state, India

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### ABSTRACT

The Fluoride (F) concentration along with other hydrochemical parameters of Delhi groundwater was analysed to characterize F pollution and its relation with other ions. Groundwater quality varied from fresh to saline with neutral to alkaline pH. The F concentration varied from 0.20-5.12 (0.89±0.89) mg L<sup>-1</sup> and the concentration increased from eastern to western part of the study area. Out of total analysed samples, 24.3% contained F level lower than 0.5 mg L<sup>-1</sup>, 55.4% from 0.5 to 1.0 mg L<sup>-1</sup>, 9.5% from 1.0 to 1.5 mg L<sup>-1</sup> and only 10.8% contained >1.5 mg L<sup>-1</sup>. The molar ratio of different ions present in the groundwater system has identified the dominant reaction pattern occurring within the system. F was independent on other quality parameters except for pH. Positive correlation between F and pH indicated that alkaline condition improved solubility of F.