

FLUORIDE ACCUMULATION BY VEGETATION IN THE FLUORIDE AFFECTED AREA OF TALUPULA, ANANTAPUR DISTRICT, ANDHRA PRADESH, SOUTH INDIA

A Nagaraju,^a E Balaji,^a A Thejaswi,^b
Tirupati and Warangal, Andhra Pradesh, India

SUMMARY: This study considers the fluoride uptake by certain plants, viz., *Heliathus annuas*, *Arachis hypogaea*, *Morus alba*, *Lychopersicon esculantum*, and *Phaseolus vulgaris* and their associated soils in the fluoride-contaminated region of Talupula, in Anantapur district, an endemic fluorosis region of Andhra Pradesh, South India (14°14'N, 78°16'E). High concentrations of fluoride were found in the leaves of plants in the region with 61.50 ppm of fluoride in *Arachis hypogaea* and 29.40 ppm in *Morus alba*. Plants grown in fluoride-contaminated soils may accumulate considerable amounts of fluoride. Furthermore, although only a few studies on the fluoride intake by vegetation are available, the accumulation of fluoride in plants appears to be very dependent on the species. In general, roots accumulate more fluoride than shoots, leaves, and fruits. While the risk to human health from the development of fluorosis is usually related to the intake of fluoride from drinking water, the consumption of foodstuffs with a high fluoride concentration will increase the risk.

Keywords: Andhra Pradesh; *Arachis hypogaea*; Fluoride uptake by plants; *Heliathus annuas*; India; *Lychopersicon esculantum*; *Morus alba*; *Phaseolus vulgaris*; Talupula, Anantapur district.

^aDepartment of Geology, S V University, Tirupati – 517 502, Andhra Pradesh, India. ^bEnvironmental Sciences, Kakatiya University, Warangal – 506 009, Andhra Pradesh, India. For correspondence: A Nagaraju, Department of Geology, S V University, Tirupati – 517 502, Andhra Pradesh, India; E-mail: arveti9@gmail.com