



## **Arsenic contamination in food chain: Thread to food security**

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The supply of good quality food is a necessity for economic and social health welfare of urban and rural population. Over the last several decades groundwater contamination in developing countries has assumed dangerous levels as a result millions of people are at risk. This is so particularly with respect to arsenic that has registered high concentration in groundwater in countries like India and Bangladesh. The arsenic content in groundwater varies from 10 to 780  $\mu\text{g/L}$ , which is far above the levels for drinking water standards prescribed by World Health Organization (WHO).

Currently arsenic has entered in food chain due to irrigation with arsenic contaminated water. In the present study reports the arsenic contamination in groundwater that is being used for irrigating paddy in Manipur and West Bengal. The arsenic content in irrigation water is 475  $\mu\text{g/L}$  and 780  $\mu\text{g/L}$  in Manipur and West Bengal, respectively. In order to assess the effect of such waters on the rice crop, we collected rice plant from Manipur and determined the arsenic content in roots, stem, and grain. The arsenic content in grain varies from 110 to 190 mg/kg while the limit of arsenic intake by humans is 10 mg/kg (WHO). This problem is not confine to the area, it spread global level, and rice being cultivated in these regions is export to the other countries like USA, Middle East and Europe and will be thread to global food security.