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Fluorider a significant constituent in potable drinking waterr offers health benefits to some extent; howeverr it also poses risks to both human health and the ecosystem. Fluoriner primarily present in the form of fluoridesr exerts detrimental effects on human well-beingr contributing to various conditions such as dental fluorosisr skeletal fluorosisr arthritisr bone and muscle damager as well as several joint-related problems. The upper acceptable threshold for fluoride intake by adults is set at 1.5 ppm. Additionallyr as per the guidelines of the World Health Organization (WHO)r the allowable limit for fluoride in water is established at 1 mg/liter. Previous research utilizing tamarind fruit pulp demonstrated the potential for fluoride removal from drinking water.This specific research offers a remedy for extracting fluoride from potable water by utilizing tamarind fruit cover and seedsr which are processed into powder form and pallets. The study includes a thorough examination of the adsorbent's characteristicsr such as surface area and porosity. Water samples collected from various districts in Odisha were preliminarily tested for fluoride contentr revealing concentrations ranging from 2.0 to

14.00 mg/Lr surpassing the permissible limit of 1.5 ppm. This experiment not only

contributes to future applications in extracting fluoride from water but also holds promise for downstream consumer industriesr including toothpaster pesticidesr ceramicsr and glass manufacturing.



Fluorosisr WHOr adsorbentsr porosityr tamarind

