

## Pothole Formation and Occurrence in Black Vertisols of Central and Western India

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**Abstract** Soil cracks are a unique feature of black vertisols. Evaporation loss is inevitable from lateral exposure of surface and sub-surface cracks. On the other hand, these cracks provide increased opportunity for soils to recharge during the rainy season. In this process, water that drains into larger size cracks moves down the soil profile and eventually results in pothole formation due to the existence of a network of sub-surface cracks. An investigation was done to evaluate pothole characteristics under different land use systems in black vertisols of central and western regions of India. In both the regions, the potholes had smaller volume in arable land than in non-arable uncultivated land. The size and volume of potholes in central India were greater compared to that in western India, where the highest volume of potholes was registered under perennial vegetation followed by agriculture–horticulture system, uncultivated fallow fields and arable lands. However, cultivated fields had less a incidence/occurrence of potholes than uncultivated fields. Similarly, the marginal land in western India registered the highest volume of potholes than other land use systems. The study gives insight to some of the researchable issues and strategies to minimize soil slumping in black vertisols, characterization of soil properties within and adjacent to potholes as well as soil and nutrient loss through potholes.