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Parameters that influence the mole drain (pipeless) formation in vertislos of M.P.

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ABSTRACT : A 75 hp tractor operated mole plough was used in the formation at 2 m, 4 m, 6 m and 8 m spacing at an average depth of 0.4 m, 0.5 m and 0.6 m from ground surface at farmer's fields in Hoshangabad district of Madhya Pradesh in vertisols. The average length of each lateral was 50 m and the tractor was operated at a speed of 0.80 kmph. Mole drains can be formed in Vertisols at different treatment when the average soil moisture content is between 22.7 - 26 % and average clay content is 52.31% at moling depth. The bulk density was not affected under control (no mole drain formation) in all the stages. While in case of mole drain creation, a considerable reduction in bulk densities was observed due to presence of macropores developed by the moling . The highest reduction in bulk density was recorded under treatment S_1D_1 (2 m spacing x 0.4 m depth) among all the treatments. Finally it may be concluded that the mole drains are best option for the water logged and heavy soils and it is the most appropriate, profitable and productive practice for soybean under vertisols of Madhya Pradesh.

KEY WORDS : Drainage, Mole drains, Mole drainage system, Vertisols

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