

SOIL ORGANIC MATTER AND WET AGGREGATE STABILITY IN
TSUNAMI AFFECTED SOILS IN HAMBANTOTA DISTRICT,
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Seawater intrusion occurred due the recent tsunami disaster badly affected on agricultural lands causing failure in crop production. Apart from elevating salinity level, addition of sodium ion with sea water creates dispersion of soil particles, destroying it's aggregates or the structure, prompting immediate need of rehabilitating the affected lands in order to sustain the productivity. Therefore the objective of the present study was to assess the impact of tsunami on Soil Organic Matter (SOM) and wet aggregate stability of the affected soils in Hambantota district.

Random soil samples were drawn from top 15cm soil depth, two weeks after tsunami and analysed for SOM, wet aggregate stability (measured as Mean Weight Diameter or MWD) and aggregate distribution. Soil samples taken from a nearest unaffected field on the same soil type were used as the reference to compare the affected and unaffected soils.

The average SOM contents of 0.27% and 1.06% respectively for the tsunami-affected soils and the reference unaffected soil revealed a greater reduction of SOM as a consequence of seawater intrusion. It could be explained the results that removal of SOM by means of soil erosion and/or deposition of large amounts of sand dunes. According to the results, the highest MWD was observed from unaffected soil, while the lowest values found in affected soils. Furthermore, it can be seen a positive correlation between SOM and wet aggregate stability indicating an urgent need to improve soil management practices that increase SOM levels, and as a result, increase the soil aggregate stability in order to ensure sustained crop production in affected soils in Hambantota district.

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