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Post tsunami effects on vegetation

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The great Asian tsunami on December 26, 2004 killed over a quarter of million people in an enormous area around the Indian Ocean. Subsequent to the massive destruction, a remarkable growth of vegetation was observed, on the coastal sand that received tsunami waves, specially a number of fruit bearing plants full of oversized succulent fruits such as papaya (*Carica papaya L*), pumpkin (*Cucurbita mixima Duchesne),* Bitter gourd (*Memodica Charantia L*), Luffa (*Luffa acutangula L).*Cucumber (*Cucumis sativus L*) etc and green leaves such as sarana (*Trianthema decandra L*). After tsunami in several tsunami affected areas the papaya trees have invaded the whole of the landscape. The remarkable growth was suspected to be due to either mineral nutrient enrichment or acquired pH and salinity by tsunami waves. Therefore, the objectives of this study were to determine the general characteristics of soil in tsunami- affected area which shows this growth to find out the cause of excessive growth of vegetables and to check if toxic metals were present in the oversized fruits to determine whether the sea sediment has brought in harmful contaminants. Soil samples were collected from tsunami affected Ambalangoda area in 89-103 km in Galle-Colombo highway and were analyzed for Phosphorus, Calcium, pH, Electrical Conductivity, Cation exchange capacity. Reference samples also collected from the same area but unaffected by tsunami. Papaya samples were collected from the same area and were analyzed for Aluminium and heavy metals. The pH of soil from the study site indicated neutral and slight basic values. When compare to reference samples it indicates increase of pH in tsunami affected soils. Comparison of electrical conductivity between soil samples collected from tsunami affected and unaffected areas indicates that there is a significant increase in soil conductivity due to the tsunami flooding. Phosphorous and Calcium content of soil showed slight increase with compare to reference samples after the tsunami. Analysis of fruits showed absence of Cd, Pb, and Hg. The expanded uncertainty (k=2, 95%) of analyzed parameters such as Cd, Pb, Al, Hg , Calcium, Phosphorous, pH & conductivity is 3.0%, 6.0%, 6.0%, 7%, 1%, 10%, 2% & 3%.

Key words : tsunami, nutrient, toxic metals, sea sediment, pH
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