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Effect of particle size and soil texture on soil carbon mineralization

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Legume leaves were a good source of nutrients in many agro-ecosystems, thus reducing dependency on commercial fertilizers. Therefore many researches have been conducted to understand the pattern of legume leaf decomposition and its release of nutrients. A study on *Gliricidia* leaves decomposition was conducted under laboratory conditions to elucidate the effect of the particle size ($S_1 \leq 0.5$ mm, $S_2 = 4$ mm) and texture of soil ($T_1 =$ Sandy clay loam, $T_2 =$ loamy sand) on microbial respiration after incorporation in to the soil. The early stages of the incubation was found to be significantly influenced by the particle size of the *Gliricidia* leaves and later stage was not affected by it. Carbon mineralization of the soil was found to be reached to the peak at day 14 followed by gradual reductions in all the treatments except control treatments as incubation progressed. First 35 days of incubation was significantly influenced by particle size of the *Gliricidia* leaves and thereafter it was not affected by particle size. Carbon mineralization was significantly influenced by the texture of soil throughout the incubation period except at 7, 42 and 56 days of incubation. Hence Loamy sand soil was given significantly higher carbon mineralization than Sandy clay loam soil throughout the incubation period except above days.

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