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N mineralization of soil as affected by different mixtures of vermicompost and coir dust

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A mixture of vermicompost and coir dust sounds better performance than using them alone. The current study assessed the effect of different mixtures of vermicompost and coir dust on soil N mineralization under laboratory conditions.

Different percentages of vermicompost and coir dust were used in making four different mixtures [100 % vermicompost (T1), 75 % vermicompost: 25 % coir dust (T_2), 50 % vermicompost: 50 % coir dust (T_3), 25 % vermicompost: 75 % coir dust (T_4)] and incorporated to the soil. The control consisted soil without vermicompost or coir dust. NH_4^+-N and NO_3-N contents were determined at 3, 7, 14, 21, 28, 35, 42, 49, 56, 63 and 70 days after treatment application using standard methods. A Completely Randomized Design (CRD) was used for the experiment with four replicates. Data were statistically analyzed using SAS package.

The variation in soil NH^+_4-N during the first 3 days of incubation was significantly different ($P \geq 0.05$) in treatment T1, T2 and T3. No distinct relationships were found after day 3 of incubation and NH^+_4-N contents were highly varied throughout the incubation. However, control (T5) was found to be significantly differed ($P \geq 0.05$) from other treatments towards the end of the incubation. Furthermore, it was observed that NH^+_4-N contents were increased at the initial stage of the incubation followed by gradual reductions. Treatment T2 was found to exhibit the highest NH^+_4-N contents followed by treatment T1 and T3. Despite the highly varied NO_3-N contents observed at the initial stages of the incubation, NO_3-N contents were found to be increased for all the treatments at day 49 onwards. The highest NO_3-N contents were observed in T1 followed by T2 and T3. However, repeated application of T1 had to be done to ensure better performance.

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