

Impact of Urea Integration with Different Organic Manures on Evolved CO_2 -C in Sandy Regosol

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A laboratory incubation study was conducted to study the impact of urea integration with different organic manures on evolved CO_2 -C in sandy regosol. There were six treatments replicated thrice and arranged in completely randomized design. It includes sole application of different organic manures such as farmyard manure (FYM), compost and paddy straw at equal nitrogen level and nitrogen at 10 tons/ha of farmyard manure was considered as reference. All treatments were combined with urea to maintain the C: N ratio to the level of 15:1. The evolved CO_2 -C was measured at 2 weeks interval up to 10th week of incubation.

The results revealed that among the sole application of organic sources, evolved CO_2 -C was higher in paddy straw amended soil at all stages of incubation. This may be due to its higher carbon content. Least amount of evolved CO_2 -C was recorded in soil received compost. This may be due to its lower readily hydrolysable carbon content than fresh organic manure. Results obtained from organic manure urea combination indicated that the paddy straw with urea amended soil released highest amount of CO_2 -C and was followed by FYM with urea at all stages. Soil received integrated nitrogen treatment registered superior evolved CO_2 -C than their sole application. This may be due to the result of proliferation of microbial community in those treatments.