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RESEARCH PAPER

Effect of urea modified hydroxyapatite nano fertilizer on nitrogen release pattern in red soil

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Abstract : A laboratory incubation study was conducted during 2018 at College of Agriculture V.C. Farm, Mandya using CRD design with eight treatments and three replication. Treatments included were T_1:100% Nitrogen-Urea (NU), T_2 to T_4: NU: UHA @ 75:25, 50:50 and 25:75 per cent, respectively and T_5 to T_7: UHA @ 50, 75 and 100%, respectively, T_8: Absolute control. Results revealed that application of 100 per cent N through nano UHA increased the content of ammonical-N at 5 DAI (653.3 µg g^{-1}) but the content decreased at 10 DAI (583.3 µg g^{-1}) and increased to 716.7 µg g^{-1} at 15 DAI and maintained it upto 20 DAI while, it decreased at 45 DAI. The nitrate –N release was highest (596.7 µg g^{-1}) at 10 DAI in T_7 treatment and maintained it upto 20 DAI and decreased at 45 DAI. Similar pattern was observed with the application of 75 and 50 per cent N-UHA treatments (T_6 and T_5, respectively). The amount of release of ammonical and nitrate N was proportional to the amount N added through UHA at any sampling interval.

Key Words : UHA: Urea modified hydroxyapatite nano fertilizer, Tomato, NU: Nano urea, DAI: Days after incubation, Nitrate –N and Ammonical – N.

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