



Dynamics of manganese fractions in a calcareous under AICRP-LTFE soils

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Abstract : Surface soil samples (0-15 cm) were collected to study the dynamics of Mn fractions in the selective treatments of the LTFE's conducted on groundnut-wheat crop sequence at Instructional Farm, Junagadh Agricultural University, Junagadh, during the year 1999 (Initial year) and 2010-2011 (12th year) after completion of crop cycle. The selected treatments were T₁ - 50 % NPK of RD in G'nut-Wheat sequence, T₂ - 100 % N P K of RD in groundnut -Wheat sequence, T₃ -150 % N P K of RD in groundnut -Wheat sequence, T₄ - 100 % N P K of RD in groundnut -Wheat sequence + ZnSO₄ @ 50 kg/ha once in three year to groundnut only (*i.e.* '99, 02, 05 etc), T₅ - N P K as per Soil Test, T₆ - 100 % N P of RD in groundnut -Wheat sequence, T₇ - 100 % N of RD in groundnut -Wheat sequence, T₈ - 50 % N P K of RD in groundnut -Wheat sequence + FYM @ 10 t/ha groundnut and 100 % N P K to Wheat, T₉ - Only FYM @ 25 t/ha to groundnut only, T₁₀ - 50 % N P K of RD in groundnut -Wheat sequence + Rhizobium + PSM to groundnut and 100 % N P K to Wheat, T₁₁ - 100 % N P K of RD in groundnut -Wheat sequence (P as S S P) and T₁₂ - Control. The water soluble Mn was found very trace. The FYM application recorded the highest values of DTPA-Mn at 12th year. Overall decline in reducible form of Mn were found, but it was found significant only at 12th year. Overall mean registered decrease in total Mn content on the long run basis. After 12th year residual Mn increase in T₉ whereas in other treatments. Per cent available and exchangeable of Mn found non significant after 12th year. There were overall decreased in total available form of Mn after a long run.

Key Words : Mn fraction, Water soluble-Mn, Exchangeable-Mn, DTPA-Mn, Total available-Mn, LTFE'S soil

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