



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

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Abstract : Surfaces soil samples (0-15 cm) were collected to study the dynamics of Zn fractions in the selective treatments of the LTFE's conducted on groundnut-wheat sequence at Instructional Farm, Junagadh Agricultural University, Junagadh during the year 1999 (Initial year), 2010-11 (12th year) after completion of crop cycle. The selected treatments were T₁- 50 % NPK of recommended doses in groundnut-wheat sequence, T₂- 100 % N P K of recommended doses in groundnut -wheat sequence, T₃-150 % N P K of recommended doses in groundnut -wheat sequence, T₄ - 100 % N P K of recommended doses 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 recommended doses in groundnut -wheat sequence, T₇ - 100 % N of recommended doses in groundnut -wheat sequence, T₈ - 50 % N P K of recommended doses in groundnut -wheat sequence + FYM @ 10 t/ha groundnut and 100 % N P K to wheat, T₉ - FYM @ 25 t/ha to groundnut only, T₁₀ - 50 % N P K of recommended doses in groundnut -wheat sequence + *Rhizobium* + PSM to groundnut and 100 % N P K to wheat, T₁₁ - 100 % N P K of recommended doses in groundnut -wheat sequence (P as S S P) and T₁₂ - Control. The water soluble Zn was present in negligible quantity. Exchangeable forms of Zn differed significantly at 12th year. Potassium enhanced the utilization of exchangeable form of Zn. The application of FYM recorded the highest value of DTPA-Zn at 12th year. Total Zn content differed significantly in T₉ (34.55 ppm), while residual form of Zn was found non significant at 12th year. The Y x T interaction were found significant after 12th year in DTPA-Zn, reducible-Zn, per cent available and total available-Zn.

Key Words : LTFE soils, Zn fractions, Water soluble-Zn, Exchangeable-Zn, DTPA-Zn, Total available-Zn, Per cent available-Zn

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