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Research Article

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

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Summary

The dynamics of Fe fractions in the selective treatments were studied by collecting the surface soil samples (0-15 cm) from 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 (12^{th} year) after completion of crop cycle. The selected treatments were T_1- 50 % NPK of RD in groundnut-wheat sequence, T_2 - 100 % N P K of RD in groundnut-wheat sequence, T_3 -150 % N P K of RD in groundnut-wheat sequence, T_4 - 100 % N P K of RD in groundnut-wheat sequence + $ZnSO_4$ @ 50 kg/ha once in three year to groundnut only (*i.e.* '99, 02, 05 etc), T_5 - N P K as per soil test, T_6 - 100 % N P of RD in groundnut-wheat sequence, T_7 - 100 % N of RD in groundnut-wheat sequence, T_8 - 50 % N P K of RD in groundnut-wheat sequence + FYM @ 10 t/ha groundnut and 100 % N P K to wheat, T_9 - Only FYM @ 25 t/ha to groundnut only, T_{10} - 50 % N P K of RD in groundnut-wheat sequence + *Rhizobium* + PSM to groundnut and 100 % N P K to wheat, T_{11} - 100 % N P K of RD in groundnut-wheat sequence (P as S S P) and T_{12} - Control. On a long run, after 12 year the values of water soluble-Fe, exchangeable-Fe, DTPA available-Fe and reducible-Fe were found significantly higher under T_9, while application of chemical fertilizer registered mostly a decline in long term after 12 year. The total-Fe, residual-Fe, per cent available-Fe and available total-Fe were affected significantly at 12^{th} year, but Y x T interaction was found non significant and T_9 recorded the highest values, in the Fe-form.

Key words : LTFE's soil, Fe fraction, Water soluble-Fe, Exchangeable-Fe, DTPA available- Fe, Total- Fe, Per cent available-Fe)

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