THE INFLUENCE OF SOIL COMPACTION ON K UPTAKE GROWTH AND YIELD OF CORN

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Increased soil strength resulting from soil compaction is of much concern because it often results in an unfavourable rhizophere for root growth. Field experiments were established in Maha 86/87 in Reddish Brown Earth soils with three levels of added K (K_0 = control, K_{50} = 50 Kg/ha and K_{100} =100 Kg/ha) and three levels of soil compaction (C1=Normal operation C2=Compacted twice with 20 Kg concrete block and C3=compacted 4 times with same concrete block). The crop used was corn (Zea mays L.) and was planted with 60*30 cm spacing in a RCBD design. Plant K uptake, NH_4OAC extractable K, plant height and root dry weights were measured at three week intervals and finally the grain yield.

Soil compaction generally increased the NH_4OAC extractable K levels in in the soil attributing to the restrictions on root penetration. Increa-

sing soil compaction from C1 to C2 and C1 to C3 levels decreased K up take significantly by 30% and 50% respectively, after six weeks of pl ting. Plant height, root dry weight and yields also decreased signi- ficantly due to increased soil compaction. Interaction effects of so compaction and added K were not significant on measured parameters. ever, at a given compaction level increasing levels of added K increa the K uptake prominently.

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