

Tests were conducted both in the laboratory and greenhouse to investigate the effects of Neem Kernel cake powder (NKCP) on growth, sporulation and pathogenicity of *fusarium oxysporum fsp lycopersici* (F.o.l). Tests were also done in the greenhouse to investigate effects of NKCP on f.o.l when applied (i) by dipping tomato seedlings in NKCP solution and (ii) as a soil amendment. A completely randomized block design with six or four replicates was used.

Potato dextrose agar (PDA) amended with 50g/l, 30g/l, 20g/l, 10g/l and 5g/l concentrations of NKCP extracts contained in petri dishes, was inoculated with 5 mm-diameter plugs of F.o.l to investigate the effects of NKCP on mycelial growth and sporulation. Similar concentrations were mixed with 5% sucrose in microscope cavity slides and about 80 spores of F.o.l were added to investigate the effects of NKCP on spore germination. Tomato seedlings were inoculated with F.o.l from non-amended and 50g/l of NKCP amended PDA to investigate the effect of NKCP on pathogenicity of F.o.l.

Twenty eight day - old tomato seedlings were dipped in 50g/l o NKCP extract for 3, 6 or 9 hours before transplanting into 18cm diameter - pots containing sterile soil which had been inoculated with two - 14mm diameter mycelial plugs per planting hole, to investigate the effect of duration of dipping on development of fusarium wilt disease. In another experiment, 28 day-old tomato seedlings were transplanted into pots containing sterile soil which had been inoculated with two - 14mm mycelial plugs and amended with 1.75g, 3.5g and 7g of NKCP per planting hole, to determine efficacy of NKCP against tomato fusarium wilt when used as soil amendment.

Concentrations of NKCP of 50g/l and 5g/l had the highest and the lowest inhibition percent (1%) respectively on mycelial radial growth, sporulation and spore germination.

There was significant effect of NKCP on pathogenicity of F.o.l.. This was evidenced by wilt index of 1.19 and 1.60 associated with 50g/l of NKCP amended and non-amended PDA media, which were significantly ( $p=0.01$ ) different, respectively.

Tomato seedlings dipped in 50g/l of NKCP for 9hrs had significantly ( $p=0.01$ ) better plant performance than those plants dipped for 3hrs throughout the growing period. Plant performance determined by stem diameter, shoot height for the first two weeks however, was relatively poor for those seedlings dipped for 9hrs than those dipped for 6hrs. However, the plants dipped for 9hrs improved in their performance in the rest of the growing period. Disease severity was reduced as the duration of dipping seedlings in 50g/l of NKCP extract increased.

Tomato plants from soil amended with NKCP performed significantly ( $p=0.01$ ) better than from non-amended soil throughout the growing season. Plant Tomato plants from soil amended with 7g of NKCP had significant ( $p=0.01$ ) better plant performance compared to plants from soil amended with 1.75g of NKCP throughout the growing season. Disease severity based on wilt index and length of discoloured vascular tissue was significantly high for tomato plants in soil amended with 1.75g and lowest in soil amended with 7g of NKCP.