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Comparative efficacy of botanical extracts against rice sheath blight (*Thanatephorus cucumeris*)

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ABSTRACT : Aqueous leaf extracts of five wildly growing plants *viz*., artimesia (*Artimesia indica*), cannabis (*Cannabis sativa*), datura (*Datura stramonium*), nettle (*Urtica dioica*) and lavender (*Levendulla officinalis*) were evaluated *in-vitro* and *in-vivo* against rice sheath blight (*Thanatephorus cucumeris*) under Kashmir conditions. The *in-vitro* evaluation of aqueous leaf extracts of these botanicals through poisoned food technique at five different concentrations *viz*., 10, 20, 30, 40 and 50 per cent revealed that all the botanicals tested at all the test concentrations significantly inhibited the mycelial growth and sclerotial germination of *T. cucumeris.* Artimesia was most efficacious and resulted in highest inhibition of mycelial growth and inhibition of sclerotial germination of 94.16 and 60.60 per cent followed by datura with 87.44 and 57.33 per cent, respectively. Nettle and lavender resulted in inhibition of mycelial growth of 85.39 and 83.32 per cent and inhibition of sclerotial germination of 56.73 and 49.06 per cent, respectively. Among the tested botanicals, cannabis was least effective and resulted in inhibition of mycelial growth and inhibition of sclerotial germination of 79.43 and 30.86 per cent, respectively. Three foliar sprays of aqueous leaf extracts of each botanical at 50 per cent concentration, separately applied at tillering, booting and post flowering stages of rice cv K-448 (Jhelum) during *Kharif* 2005 and 2006, revealed that artimesia was most effective in reducing the mean disease incidence and intensity to 20.50 and 7.07 per cent from 39.75 and 18.65 per cent in control, respectively. Datura and lavender resulted in mean disease incidence of 28.50 and 31.25 per cent and disease intensity 10.51 and 12.69 per cent, respectively. Nettle and cannabis were least effective and resulted in mean disease incidence of 34.00 and 35.75 per cent and disease intensity of 14.65 and 16.95 per cent, respectively. Artimesia resulted in highest mean grain yield (6.10 t/ha), followed by datura (5.90 t/ha) and lavender (5.65 t/ha) while nettle and cannabis resulted in lowest mean grain yield of 5.35 and 5.30 t/ha, respectively, as against 5.05 t/ha in check. Artimesia resulted in highest increase in grain yield (20.79%) followed by datura (16.83%) and lavender (11.88%), while nettle and cannabis resulted in lowest increase in grain yield of 5.94 and 4.95% yield over control, respectively.

Key Words: Botanicals, *in-vitro*, *in-vivo* management, rice, sheath blight, *Thanatephorus cucumeris.*