Effects of Tall Fescue Endophyte Infestation on Relative Abundance of Small Mammals

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Abstract

Small mammal populations were characterized nine times during six sampling periods on six plots in five different fields of tall fescue (*Festuca arundinacea* Schreb.) to determine differences in their abundance and species composition associated with the presence or absence of the endophytic fungus *Acremonium coenophialum* Morgan-Jones & Gams. No differences were found in species richness (n = 4 for both types) between endophyte-free (E^-) plots and endophyte-infested (E^+) plots. Capture success, number of individuals, total captures, and recapture rates were more for E^- plots than for E^+ plots. All four species [eastern harvest mice (*Reithrodontomys humulis* Giglioli), short-tailed shrews (*Blarina brevicauda* Gray), pine voles (*Microtus pinetorum* McMurtrie), and cotton rats (*Sigmodon hispidus* Say & Ord)] were captured more often in E^- than in E^+ plots. The diminished population densities of small mammals demonstrate the potential of E^+ tall fescue as a permanent ground cover for waste disposal sites, orchards, tree farms, irrigation ditch banks, golf courses, and other residential, commercial, and industrial situations where burrowing activities of mammals may create human health hazards or financial burdens.