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Evaluation of Neem seed and ginger rhizome extracts in control of postharvest tuber rot fungi of Irish potato in Yola

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This laboratory study was conducted to evaluate the efficacy of two plant extracts (neem *Azadirachta indica* seeds and ginger-*Zingiber officinale* rhizomes) on postharvest tuber rot fungi of Irish potato in Yola, Adamawa State. Four fungal species associated with Irish potato tuber rot were isolated and identified in the study, namely; *Aspergillus niger*, *Aspergillus flavus*, *Fusarium oxysporum* and *Penicillium* spp. On which three different concentrations of the plant extracts were used (20%, 30% and 40%). Based on frequency of occurrence, it was found that *Aspergillus niger* had the highest frequency, followed by *Aspergillus flavus* and *Fusarium oxysporum*, while *Penicillium* spp. had the least occurrence. The results obtained revealed that growth inhibition of the rot causing organisms varied with extract type, extract concentrations and the fungal pathogen. At 20% concentration, neem extract proved more effective in inhibiting the growth of *Aspergillus flavus* (48%) and *Fusarium oxysporum* (32.3%), while the growth of *Penicillium* spp. had 76.7% inhibition. At 40% concentration, the mycelia growth of *Penicillium* spp. was inhibited (46.7), and the mycelia growth of both *Aspergillus flavus* and *Fusarium oxysporum* were 76% and 51.6% respectively. For *Zingiber officinale* extract, the mycelia growth of all the isolates were inhibited at the highest concentration (40%), *Aspergillus flavus* (40%), *Fusarium oxysporum* (11.1%) and *Penicillium* spp. (43.3). From these results, it is clear that neem seed extracts could serve as an alternative to the use of synthetic chemicals in controlling post-harvest tuber rot fungi of Irish potato.

Biography

Hycenth Nahunnaro holds a Doctor of Pathology (PhD) in Plant Pathology. He has been involved in teaching and research in College of Agriculture, Jalingo and Mubi between 1989 and 1992. He is currently working as a senior Lecturer with Modibbo Adama University of Technology, Yola and Head of Crop Protection Department. He served twice as Departmental Postgraduate Coordinator in 2008-2011 and 2013 to date in addition to membership of several University of Committees. He is a member of Plant Protection Society of Nigeria (PPSN), Agricultural Society of Nigeria (ASN) and Entomological Society of Nigeria (ESN). He has attended several National Conferences and has published 34 local and international papers.

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