INTEGRATED APPROACH FOR THE MANAGEMENT OF PURPLE BLOTCH DISEASE OF ONION

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Extended Summary

An interrated experiment was conducted in the farm of Sher-e-Bangla Agricultural University, Dhaka, Bangladesh, during the period from December, 2009 to March, 2010 winter season to evaluate the efficacy of fungicides, organic soil amendment and plant extract against purple blotch complex of onion. The field experiment was laid out using onion variety 'Taherpuri' collected from Manikgonj, Dhaka to evaluate the eighteen different treatments combination of fungicides, poultry manure and neem seed extract with different spray schedules The unit plot size was (2 × 1.5) $m^2$and the spacing was 15×20 cm. The experiment was laid out in Randomized Completely Block Design with four replication. The treatment combinations were T_1 ($PoFoSo$) = Soil not amended with poultry manure + seedlings dipped in plain water only + no fungicidal spraying (Control), T_2 ($PFoSo$) = Soil amended with poultry manure + seedlings dipped in plain water only + no fungicidal spraying, T_3 (PoF_1S_7) = Soil not amended with poultry manure + seedlings dipped in Rovral solution + foliar spray with Rovral at seven days interval, T_4 (PoF_2S_7) = Soil not amended with poultry manure + seedlings dipped in Bavistin solution + foliar spray with Bavistin at seven days interval, T_5 (PoF_3S_7) = Soil not amended with poultry manure + seedlings dipped in Ridomil Gold solution + foliar spray with Ridomil Gold at seven days interval, T_6 (PF_1S_7) = Soil amended with poultry manure + seedlings dipped in Rovral solution + foliar spray with Rovral at seven days interval, T_7 (PF_2S_7) = Soil amended with poultry manure + seedlings dipped in Bavistin solution + foliar spray with Bavistin at seven days interval, T_8 (PF_3S_7) = Soil amended with poultry manure + seedlings dipped in Ridomil Gold solution + foliar spray with Ridomil Gold at seven days interval, T_9 (PoF_1S_{15}) = Soil not amended with poultry manure + seedlings dipped in Rovral solution + foliar spray with Rovral at fifteen days interval, T_{10} (PoF_2S_{15}) = Soil not amended with poultry manure + seedlings dipped in Bavistin solution + foliar spray with Bavistin at fifteen days interval, T_{11} (PoF_3S_{15}) = Soil not amended with poultry manure + seedlings dipped in Ridomil Gold solution + Foliar spray with Ridomil Gold at fifteen days interval, T_{12} (PF_1S_{15}) = Soil amended with poultry manure + seedlings dipped in Rovral solution + foliar spray with Rovral at fifteen

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days interval, T_{13} (PF_2S_{15}) = Soil amended with poultry manure + seedlings dipped in Bavistin solution + foliar spray with Bavistin at fifteen days interval, T_{14} (PF_3S_{15}) = Soil amended with poultry manure + seedlings dipped in Ridomil Gold solution + foliar spray with Ridomil Gold at fifteen days interval, T_{15} ($PoNS_7$) = Soil not amended with poultry manure + seedlings dipped in neem seed extract + foliar spray with neem seed extract at seven days interval, T_{16} (PNS_7) = Soil amended with poultry manure + seedlings dipped in neem seed extract + foliar spray with neem seed extract at seven days interval, T_{17} ($PoNS_{15}$) = Soil not amended with poultry manure+ seedlings dipped in neem seed extract + foliar spray with neem seed extract at fifteen days interval and T_{18} (PNS_{15}) = Soil amended with poultry manure + seedlings dipped in neem seed extract + foliar spray with neem seed extract at fifteen days interval. Data were collected on % plant infection, %leaf infection, % leaf area diseased and yield. A positive and significant effect of fungicides, poultry manure and neem seed extract was found in respect of disease incidence and disease severity and yield of onion. The highest performance in reducing disease incidence and disease severity of purple blotch complex of onion was found by the application of treatment PDF_1S_7 where soil was amended with poultry manure and onion seedlings were dipped in Rovral 50WP solution followed by foliar spraying with the same fungicide at seven days interval. The highest onion bulb yield (5.063t/ha) was also recorded in case of application of treatment PDF_1S_7. Neem seed extract also showed better performance in combination with poultry manure in reduction of disease incidence and severity as well as increasing yield. On the basis of present findings it may be concluded that the onion growers may be suggested to apply Rovral 50 WP (0.2 %) solution for dipping onion seedling along with use of poultry manure for soil amendment followed by spraying with Rovral 50 WP (0.2 %) with 15 days intervals in controlling purple blotch complex of onion.