SCREENING OF CLUSTER ONION *(Allium cepa* L. var. *aggregatum)* LINES FOR ANTHRACNOSE AND FUNGAL BULB ROT DISEASES

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Cluster onion *(Allium cepa* L. var. aggregatum) is belongs to the family Alliaceous crop addition to the big onion. It is considered as an important cash crop in Sri Lanka with high vulnerability to the pest and diseases. Among them, onion anthracnose and fungal bulb rot can be considered as the major diseases in the onion cultivation of Sri Lanka. The availability of disease tolerant varieties is important to reduce the yield loss of onion cultivation. Therefore, an experiment was conducted during the 2020/2021 *Maha* season in Field Crops Research and Development Institute, *Mahailluppallama*, Sri Lanka to identify disease tolerant cluster onion varieties. Two onion varieties; ANKCLO-1 and ANKCLO-2 with three checked varieties; Vethalan, Thelulla selection, and MICLO-1 were screened using field and pot experiments. Pathogens were inoculated artificially as suspensions and favorable conditions for the disease's development were maintained. Disease severity index of onion anthracnose and disease incidence of fungal bulb rot were calculated. According to the results, all the tested cluster onion lines were susceptible for anthracnose and bulb rot. The severity of anthracnose was not significantly different ($p>0.05$) among the tested varieties. However, the tested line ANKCLO-2 expressed a low level of disease severity (87%) compared to the Thelulla selection (100%), which can be develop for field tolerance against anthracnose. Both tested lines; ANKCLO-1 and ANKCLO-2 showed significantly ($p<0.05$) lower disease incidence of fungal bulb rot; 70% and 60% respectively compared with the susceptible check line Thelulla selection (DI-100%) while other tested lines were also showed tolerance for the fungal bulb rot. Finally, ANKCLO-2 can be selected as highly tolerance cluster onion verity compared to ANKCLO-1 for anthracnose and fungal bulb rot in onion cultivation.

Keywords: ANKCLO-1, Fungal bulb rot, Onion, Screening, Severity