



University of Zabol

Graduate school

Faculty of Agriculture

Department of Plant Protection

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of Master of Science (M.Sc.) in the field of Plant Pathology

Title

**Evaluation of resistance of some indigenous and non-
indigenous luffa cultivars to *Pythium aphanidermatum***

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Abstract

***Luffa cylindrica* is a tropical plant belonging to *Cucurbitaceae* with various cultivars. In this research, resistance of eight indigenous and non-indigenous cultivars against *Pythium aphanidermatum* is evaluated. Seeds of various cultivars planted in pots and seedlings were inoculated with pathogen. After inoculation, yellows and damping-off symptoms were recorded on various cultivars. Then disease index (DI) and area under disease progress curve (AUDPC) were measured for each cultivar. The experiments were conducted in a completely randomized design. SPSS (v.24) software is used for analysis of data and compare of means carried out with Duncan's multiple range test at the 5% probability level. Pathogen was re-isolated from seedlings with symptoms. In order to molecular confirmation of isolate, DNA was extracted and amplification of *ITS-rDNA* region done using Polymerase Chain Reaction (PCR) method with ITS1/ITS4 primers. Results showed that there is significant correlation between type of cultivar and seedling death (damping-off). Type of cultivar as the predictor variable, predict 54.2% of changes of the main variable (damping-off). In other words, type of cultivar is 54.2% effective on seedling death caused by *P. aphanidermatum*. Northern large and Long luffa cultivars with 66.6% and 50% disease index were sensitive and other cultivars including Northern white seed, Northern black seed, Afghani, Touri, Angled and Brasilian with 9.7%, 9.7%, 15.6%, 15%, 18.75% and 19.4% disease index respectively, placed into resistant group. Furthermore, according to measurement of AUDPC, Northern white seed and Northern black seed cultivars showed the lowest level, Afghani, Touri, Angled and Brasilian cultivars showed average level, Northern large and Long luffa cultivars showed the highest level of area under disease progress curve. Because of least amount of disease index and AUDPC in Northern white seed and Northern black seed cultivars, planting of these cultivars recommended for better management of disease.**

Key words: susceptibility, resistance, disease index, area under disease progress curve, *Cucurbitaceae*