

Effect of Maturity Stage of Nutmeg (*Myristica fragrans*) on Its Antifungal Activity against the Growth of *Aspergillus niger* and *Fusarium oxysporum*

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Spices have a great potential to be developed as new and safe antimicrobial agents. The present study tested the antifungal activity of methanol, ethanol, chloroform, hot water extract of nutmeg (*Myristica Fragrans*) seed, mace and fruit peel at different concentration levels (5%, 10% and 20%) against *Aspergillus niger* and *Fusarium oxysporum*. The plant materials were selected at three maturity stages of two months, four months and fully mature stage. The agar dilution technique was used and the effect of different concentrations of plant extracts on radial growth of reference fungi was evaluated. Inhibition percentage was calculated by using the equation of: Inhibition % = [(C-T) / C] X 100, where, C: diameter of the control colony and T: diameter of treated colony. Maximum inhibition of 100% against *F. oxysporum* was found at 10% and 20% concentrations of ethanol and methanol extracts of fully matured seed and mace extracts except fruit peel. There was a clear increase of antifungal activity of all extracts plant materials against *F. oxysporum* with their increasing maturity. Maximum inhibition of 100% against *A. niger* was found at 10% and 20% concentrations of ethanol and methanol extracts of fully matured mace. However, seed extracts showed favorable condition for growth of *A. niger* with increasing maturity while mace and peel showed increasing inhibitory action with increasing maturity. It was found that mace samples showed encouraging results indicating potential use for management of *F. oxysporum* and *A. niger* by showing the highest inhibition at all concentration levels especially at the fully maturity stage.

Keywords: antifungal activity, *Aspergillus niger*, *Fusarium oxysporum*, maturity stage, nutmeg