

# Investigation of Antimicrobial Activities Possessing Soil Fungi from Yangon University Campus against *Staphylococcus aureus*

Yin Kyay Khin <sup>1</sup>, Phyto Wai Khaing <sup>2</sup>, Thaung Htike Oo <sup>3</sup> and Aye Yamin Khant <sup>4</sup>

## Abstract

In this study, 14 fungi isolated from seven different soil samples were collected from Yangon University Campus. The soil no.1 is sandy clay loam texture and pH 6.28 collected at Convocation Road. The soil no.2 is sandy clay loam texture and pH 6.14 collected at Dagon Street. The soil no.3 is loam texture and pH 6.17 collected at Judson Street. The soil no.4 is clay loam texture and pH 6.20 collected at Thaton Street. The soil no.5 is sandy clay loam texture and pH 6.17 collected at Thiri Hostel. The soil no.6 is sandy loam texture and pH 6.24 collected at Sagaing Street. The soil no.7 is sandy loam texture and pH 6.13 collected at Chancellor Road. The isolation of fungi was carried out by chemical treatment dilution method. One fungus Y-01 was isolated from the soil no.1. Two fungi Y-02 and Y-03 were isolated from the soil no.2. Two fungi Y-04 and Y-05 were isolated from the soil no.3. Three fungi Y-06, Y-07 and Y-08 were isolated from the soil no.4. One fungus Y-09 was isolated from the soil no.5. Three fungi Y-10, Y-11 and Y-12 were isolated from the soil no.6. Two fungi Y-13 and Y-14 were isolated from the soil no.7. Then antimicrobial activities of fungi were tested by paper disc diffusion assay method. The fungal extracts were tested for antimicrobial activity against six test organisms such as *Bacillus pumilus*, *Pseudomonas fluorescens*, *Agrobacterium tumefaciens*, *Escherichia coli*, *Staphylococcus aureus* and *Saccharomyces cerevisiae*. In the screening, the isolated fungus Y-10, exhibited the highest activity against *Staphylococcus aureus*. Therefore, this fungus Y-10 was selected for the further investigations. In the study of test for starch hydrolyzing activities of 14 fungi, it was found that eight fungi (Y-01, Y-02, Y-04, Y-08, Y-09, Y-11, Y-13 and Y-14) showed starch hydrolyzing activities. Fermentation process, size of inoculum 15%- and 48-hours ages of culture showed the highest antimicrobial activities against *Staphylococcus aureus*. In the studies of paper chromatography, it was found that water saturated n-butanol was the best solvent for the extraction of antibacterial metabolite.

**Key word:** isolation, fungi, antimicrobial.

- 
1. Demonstrators, Department of Biology, Yangon University of Education
  2. Demonstrators, Department of Biology, Yangon University of Education
  3. Demonstrators, Department of Biology, Yangon University of Education
  4. Demonstrators, Department of Biology, Yangon University of Education