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NOOTRA PANVIROJ : SCREENING OF FUNGAL ISOLATES WHICH
HAVE HIGH CAPABILITY ON ARSENIC REMOVAL. THESIS ADVISORS :
PORNSAWAN BISOOTTIVISETH, Ph.D., VITHAYA MEEVOOTISOM, Ph.D.,
JUWADEE SHIOWATANA, Ph.D., JARUPONG BOON-LONG, Ph.D. 94 P. ISBN
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One hundred and eighty five fungal isolates which could grow in the presence of 70 mg l^{-1} of either arsenite or arsenate were isolated from samples collected from the arsenic-polluted areas in Ron Phibun District, Nakhon Si Thammarat Province and Bannagsta District, Yala Province in southern Thailand. Out of these, one fungal strain (RRMT2-40I) was found to have the best efficiency in removing inorganic arsenic from growth medium (potato dextrose broth). This fungus, identified as *Paecilomyces* sp., removed arsenic and grew well in the growth medium at pH 5.0 and pH 7.0 and at temperature 27°C , reaching the stationary phase in 4 days. The growth of this fungus was slightly affected by inorganic arsenic [both arsenite (III) and arsenate (V)] concentration in the medium at 1000 mg l^{-1} . The arsenic uptake exhibited its peak and turning point at the stationary phase. At this phase arsenic was excreted from the fungal cells. Arsenic removal was dependent on the culture age and viability of the cells. When the selected fungus were killed by autoclaving, arsenic was not taken up or removed by the cells.