
SCREENING OF PECTINASE PRODUCING BACTERIA FOR ITS APPLICATION IN WASTEWATER TREATMENT OF *CANNA EDULIS*. KER PROCESSING

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SUMMARY

Today, more and more starch processed from (*Canna edulis*) has been expanded in Vietnam, which contributes significantly to the rural economy and employment. However, the growth of craft villages and their production capacity, especially the huge amount of solid waste and wastewater had been associated with severe environmental pollution. Because of the significant local impacts, some studies have been carried out. Nevertheless, the major obstacle in the operation of aerobic activated sludge system is the presence of foam on the surface of aeration and settling tanks. Foaming phenomena on the surface of settling or aeration tanks may be caused by the aeration and pectin content in wastewater. The presence of foam in systems can decrease the efficiency of the treatment process and increase the treatment efficiency. In addition, the large amount of foam can result in a multitude of operational problems such as blockage of pipes, a reduction in oxygen transfer, and possibly damaged mechanical equipment. Besides that, a considerable fraction of the active biomass can be trapped in thick foam layers and therefore be excluded from the intended biological processes. The present study deals with the screening and identification of indigenous bacteria strains for the hydrolysis of pectin in wastewater. The screening was done by plating method, and the N3 strain was screened with high pectinase activity at 29.4 U/ml. The features of the strain was identified by biochemical physiological and 16S-RNA technique leading to the result that N3 strain was 99% homology with *Bacillus mojavensis* IFO 15718. Furthermore, the wastewater treatment ability of N3 strain was tested and showed that it could not only decrease the amount of foaming on the surface but also gain high COD removal efficiency at 85.6%.

Keywords: *Bacillus mojavensis*, *Canna edulis*, craft village wastewater treatment, pectinase.

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