

C617423 : MAJOR ENVIRONMENTAL ENGINEERING

KEY WORD: CHITOSAN/COAGULATION/PROTEIN/MUNGBEAN VERMICELLI CHANCHAI

SANGPAKDEEJIT : PROTEIN RECOVERY FROM MUMGBEAN VERMICELLI WASTEWATER
USING CHITOSAN AS COAGULANT. THESIS ADVISOR:ASSIST.PROF. ORATHAI
CHAIVALPARIT,M.S. THESIS COADVISOR:ASSO.PROF. WONGPAN LIMPASANEE,
M.Eng. 152 PP. ISBN 974-635-375-6

This research made to study the most suitable conditions in regaining protein from wastewater,by using chitosan to determine its ability of being a coagulant by the jartest method. In this process, the pH of wastewater,sampled from two sources-a wash of green gram flour and of green gram noodles, has been altered to six different levele-2.5, 3.0, 3.5, 4.0, 4.5 and 5.0; and then each has been tested on 12 levels of concentration of chitosan i.e.0, 20, 40, 60,80 100, 150, 200, 300, 350, and 400 mg/l

The research has proved that the use of chitosan as coagulant is well capable of reduction of COD and regaining of protein at pH 4.5, particularly from the wash of green gram flour, as the concentration of the protein is high with an appropriate level of 100 mg/litre of chitosan, TKN; COD; solid substances; constant solid substances and dehydrated substances could be reduced by 90.1, 90.7, 87.5, 83.3 and 87.9 per cent respectively, have chemical cost 1.81 baht per sludge 1.0 kg, compared to those of 61.4, 45.8, 33.5. 23.0 and 36.5 per cent from the wash of green gram noodle under the same pH level but 150 mg/l of chitosan To a certain extent, the quality of water after precipitation is not satisfactory. From the wash of green gram flour, existing amounts of TKN ;COD; solid substances; constant solid substances and dehydrated substances in water are 2761, 34991, 37826, 5274, and 32552 mg/l respectively and 373, 10198, 25810, 6680 and 19130 mg/l have chemical cost 24.50 baht per sludge 1.0 kg from the wash of green gram noodle. Calciumphosphate not have relation to improve sedimentation efficiency.

ภาควิชา.....วิศวกรรมสิ่งแวดล้อม.....

ลายมือชื่อนิสิต ชาณุชัย พงษ์ศักดิ์ ๗๗

สาขาวิชา.....วิศวกรรมสุขาภิบาล.....

ลายมือชื่ออาจารย์ที่ปรึกษา Mr. Sangpa

ปีการศึกษา.....2539.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม Mr. Sangpa