

# ISOLATION AND SELECTION OF STRAINS OF AEROBIC BACTERIA APPLICABLE TO TREATMENT CUM EXPLOITATION OF WASTEWATER FROM CATTLE SLAUGHTER

Tran Thi Thu Lan, Nguyen Van Cach, Le Thi Huong

## Summary

Wastewater from cattle slaughters is normally contaminated by high organic components, about 70 -80%, includes: protein, cellulose, fat, ... in which protein are dominated. The appropriate and effective treatment method for this type of wastewater is using biological method. Aim to develop technical solution for treatment and exploit pollution resources in wastewater W2E (Wastewater to Energy), priority isolation and selection of indigenous aerobic microorganism which has capable of rapid transform dissolved organic pollutants in wastewater to building biomass (as fast and as much as possible) and more favorable for characteristic of creating deposited flocculation (to match with the goal to separate and collect activated sludge in biological processing stage). From 8 wastewater samples of cattle slaughters in Hanoi, we isolated 26 strains of bacteria capable of assimilating diverse substrates. Preliminary selection obtained 05 strains of bacteria which capable of high biosynthesis protease as well as decomposition of starch and cellulose are C1, C2, C3, C4, C8 and good at accumulating biomass. Determining the biochemical characteristics of the strain: bacillus, gram – positive, capable to growing well on a variety of different substrates. Strain C1 produced large biomass and high capable of flocculation. C1 produced maximum biomass at 22 hours with value of OD was 5.14 at a wavelength of 600 nm. Treating COD performance of strain C1 reached highest at 94% after 30 hours. Identification of microorganism by 16S sequencing rDNA method and sorting plant showed that C1 had 99.93% similarity with strain *Bacillus mojavensis* so that this strain named *Bacillus mojavensis* C1. This strain is completely meet the objectives of the research, meet agent role in the process of slaughtering wastewater treatment and safe for environment.

**Keywords:** *Bacterial isolation, wastewater from cattle slaughter, protein decomposed microorganism, Bacillus mojavensis.*