

## **Isolation and Application of Microbial Strains to Anaerobic Fermentation to Treat Food Wastes**

Jung Kon Kim<sup>1</sup>, Gun Hyung Cho<sup>1</sup>, Hyo Ki Jung<sup>1</sup>, Si Wouk Kim<sup>2</sup>

Department of Biomaterials Engineering<sup>1</sup>, Department of Environment engineering<sup>2</sup>,

Chosun University, Gwangju 501-759, Korea

TEL: +82-62-230-6649, FAX: +82-062-225-6040

### **Abstract**

Pilot scale(2.5 ton) three-stage methane fermentation system has been developed in this lab for the rapid production of methane from food wastes. The primary stage was a semi-anaerobic hydrolysis/acidogenic system, and the secondary one was anaerobic acidogenic system. From the secondary system, five strains (KA1-KA5) responsible for anaerobic fermentation were isolated and characterized. Among them four strains (KA2-KA5) were gram positive, but KA1 was gram negative. Most of them showed rod form, but KA4 was oval. The strain KA4 had the highest ethanol production yield, whereas KA1 had the highest lactic acid production ability.