B313 Microbial Decomposition of *s*-Triazine Herbicide, Atrazine by the TNT-degrader, *Stenotrophomonas maltophilia*

Myung-Seok Lee and Kye-Heon Oh*
Department of Life Science, Soonchunhyang University

The agricultural use and relative persistence of *s*-triazine herbicides such as atrazine have led to increasing concern about environmental contamination. *Stenotrophomonas maltophilia* capable of utilizing TNT as the sole nitrogen source have been isolated from contaminated soils and the bacterium showed excellent degradability for several *s*-triazine herbicides including atrazine. Complete depletion of atrazine was achieved within 30 hours of incubation. Atrazine was cometabolized in the presence of different supplemented carbons. Among the co-substrates used in this experiment (*e.g.*, glucose, fructose, starch, succinate, acetate), fructose is the best co-substrate as a cometabolite. However, no atrazine degradation was monitored without the supplemented co-substrates in the cultures. The relationships between atrazine degradation by *S. maltophilia* and several relevant physicochemical parameters (*e.g.*, N-sources, yeast extract) were examined. High performance liquid chromatographic methodology was used to measure this substrate and it also resolved unknown intermediates.

B314 **Distribution of Heterotrophic Microorganisms in Acidic Soils near Ulsan Petrochemical Industrial Complex**

Yong-Suk Moon, Kwang-Il Chu*, and Jongseol Kim
Division of Biological Sciences, University of Ulsan

To understand how heterotrophic microbial populations might respond and adapt to acidification of soils, samples were collected from 20 locations in a forest area near Ulsan petrochemical industrial complex and the numbers of heterotrophic microorganisms were measured using the most probable number technique. The pH values of the samples ranged from 3.5 to 4.6 with the average of 3.8 (±0.3), and the organic matter content was between 2.0 and 17.9%(w/w) with the average of 10.2(±4.2)%. When the numbers of heterotrophs growing at pH 7 were measured, they ranged from 1.6×10^7 to 2.4×10^8 cells/g of soil (dry weight) with the median of 5.3×10^7 cells/g of soil. In 16 out of 20 samples, the numbers of heterotrophs growing at pH 4 were lower than those growing at pH 7. However, the median (3.3×10^7 cells/g of soil) at pH 4 was not much different from that at pH 7 and the values ranged from 3.2×10^6 to 6.7×10^8 cells/g of soil. We compared these values with those obtained from samples collected at a rural forest area (average pH of 4.3 ±0.6); in the rural forest soils, while the median value of heterotrophs growing at pH 7 was about one order of magnitude higher than that in soils near the industrial complex, the numbers of heterotrophs growing at pH 4 were rather similar.