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자연생태계에서 합성세제가 생분해되는 양상

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자연생태계에서 합성세제가 생분해되는 양상을 알아보기 위하여 시판되고 있는 합성세제를 대상으로 하여 음이온 계면활성 성분의 생분해 양상을 조사하였다. 음이온 계면활성 성분은 MBAS(methylene blue active substance)법을 이용하여 조사하였으며, 미생물원으로는 activated sludge와 강물을 사용했고 배양온도는 25℃와 15℃에서, 계면활성 성분의 농도는 5ppm과 30ppm인 조건에서 실험을 수행하였다. 그 결과 자연환경과 가까운 조건인 강물로 15℃에서 실험하였을 때 생분해도가 더 낮은 것으로 측정되었으며 따라서 합성세제의 생분해도 측정은 이와 같은 조건에서 이뤄지는 것이 바람직하겠다.

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High abundance of sulfate-reducing bacteria in Lake Soyang
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In order to know the extent of sulfate-reducing bacteria(SRB) and methane-producing bacteria(MPB)'s contribution to the degradation of organic material and nutrient recycling in sediment, the distribution and activity of these two microorganisms were studied monthly in 1994 at two sites, one is littoral and the other profundal, in Lake Soyang.

In the seasonal distribution of two microorganisms, SRB were $1.07 \times 10^3 - 2.42 \times 10^5$ cells/g-dry weight at Saggulri site, $2.40 \times 10^5 - 1.29 \times 10^6$ cells/g-dry weight at Dam site and MPB were $0.52 \times 10^3 - 5.88 \times 10^3$ at Sanggulri and $1.44 \times 10^3 - 6.89 \times 10^3$ cells/g-dry weight at Dam site. In these results, the distribution of sulfate-reducing bacteria is much higher than other lakes. These remarkably high distributions are due to the higher concentration of sulfate ion, the determinative factor of distribution of these microorganisms, than other lakes. The relations of the bacteria and chlorophyll a suggest that the effective environmental factor on sulfate-reducing bacteria is the concentration of the organic materials. The activity of SRB for the degradation of organic matters was higher than MPB by factor of 146.

Conclusively SRB superior to MPB in the distribution and the activity are more important anaerobic bacteria in Lake Soyang.