

Textile wastewater treatment using a mixed culture of *Microbacterium barkeri* KCCM 10507 and *Paenibacillus amylolyticus* KCCM 10508 in pilot plant

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Textile wastewater was tested to enhance the removal efficiency of PVA, COD, color, TN, and TP using a mixed culture of above two strains in pilot plant. Especially, aeration tank was divided four divisions, and each tank was prepared as plug flow type in order to enhance the sedimentation rate of sludge and aeration capacity. The characteristics of wastewater was COD 900 mg/L, color 1,300 PtCo unit, temperature 40°C, and pH 9, respectively. As a result, biodegradability of above analysis items was 99, 77.9, 37.5, 42.1, and 61.5%, respectively, and these values were obtained in 15 ton/day of treatment capacity. This is very high treatment efficiency than other research reported from now on. According to above result, the mixed culture of two strains has excellent ability to remove PVA as well as COD burdens. Furthermore, they also showed the good efficiency of color, TN, and TP removal. The reason of high efficiency obtained seemed to be that temperature and pH was changed to optimum condition for microbial growth, and then microbial activity was enhanced. It was shown that the mixed culture has very good ability to remove PVA, COD, color, TN, and TP. And it was concluded that it can be possible to actual application for textile wastewater treatment.