

APPLICATION OF UASBR IN TREATMENT OF DAIRY WASTE WATER

VIVEK R. KASAR (KOKIL)¹ AND R. A. JOSHI²

¹Research scholar, ²Assistant Professor

Dept. of Civil Engineering Vishwakarma Institute of Information Technology,
Pune 411048, India.

Abstract

In developing, agricultural based countries like India, the industrial development moving faster, along with this the water pollution, space limitation like problems also increasing. To resolve such problem in Dairy wastewater treatment plant the Upflow Anaerobic Sludge Blanket Reactor (UASBR) should be used very efficiently. A 38 liter pilot scale UASBR model developed with reflux to control flow of upper sludge to treat the dairy waste water. It was operated for 6hrs- 8hrs after culture developed at different phases like reactor without media and without recycle(batch reactor) at ambient temperature, with media and without recycle (batch reactor), with media and with recycle (Continuous flow reactor), with media, with recycle at mesophilic (35-39^oC) Condition (Continuous flow reactor). After reaching stable operation condition it was observed that the operation gives the significant removal efficiency of different parameters like COD, BOD, TSS, TKN and other parameters. After comparative study between different phases, It was found that the most desired result found in with media and with recycle continuous flow reactor. The COD removal efficiency was found in the range of 75-91%, BOD, TKN, TSS gives the maximum removal efficiency. The model study after analysis of result gives the approximate idea about the usability and its function. The anaerobic treatment results in formation of methane (CH₄) which can be used as an energy source. By vertical development of reactor the required space for the treatment can be minimized.

Keywords : UASBR, Dairy waste water, Different phases for treatment, Comparative study for different phases