TECHNOLOGIES AVAILABLE FOR SEWAGE TREATMENT FOR REDUCTION OF FECAL COLIFORM

Different treatment technologies like ASP, UASB, ASP-BNR, MBR and WSP etc are adopted for sewage treatment in India. Efficiency of pollutant removal based on different technology and same is tabulated below

S.NO	Parameters	Technology					
		ASP	ASP-BNR	SBR	UASB+ FPU	MBR	WSP
1.0	**Performance after Secondary treatment**						
1.1	Effluent BOD (mg/l)	<20	<10	<10	<30	<5	<40
1.2	Effluent SS (mg/l)	<30	<20	<10	<100	<5	<100
1.3	Faecal coliform removal, Log unit	Upto2<3	Upto3<4	Upto3<4	Upto2<3	Upto5<6	Upto2<3
1.4	T-N removal Efficiency, %	10-20	70-80	70-80	10-20	70-80	10-20
2.0	**Performance after tertiary treatment (Filtration and U.V / Chlorination)**						
2.1	Effluent BOD (mg/l)	<10	<10	<10	<20	<5	<20
2.2	Effluent SS (mg/l)	<5	<5	<5	<10	<5	<10
2.3	Effluent NH_3N (mg/l)	-	<1	<1	-	<1	-
2.4	Effluent Fecal Coliforms, MPN/100 ml	10	10	10	1000	10	1000

There is some pre-requisite for removal of Coliform before application of tertiary treatment. High Dosage of U.V. and Chlorination shall be required in case of UASB, ASP and WSP due to their limitation of removal efficiency of Coliform upto log unit of Upto2<3. High chlorine demand may ultimately result in formation of Trihalomethanes (THMs) compounds. THMs are generally stable and carcinogenic compounds. Similarly, high dose of U.V. will increase the capital cost and decrease their efficiency.

Therefore, it is suggested that treatment plant shall be designed considering the Faecal Coliform removal efficiency, Log unit Upto3<4 so that tertiary system can work efficiently. Above table indicates that technologies like ASP-BNR, SBR, MBBR, MBR have capability to achieve BOD <20, SS<20, Faecal coliofrm removal, Log unit upto 3<4 and T-N removal efficiency upto 70-80%.

STPs receiving Effluent having Fecal Coliform with 4 log concentration work efficiently with tertiary treatment with minimal dosage.

REFERENCE

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