

Efficiency of *Typha latifolia* as the vegetation component for constructed wetlands in the treatment of rice mill wastewater under different strengths of Chemical Oxygen Demand (COD)

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Abstract: *A study was carried out to check the efficiency of common cattail (Typha latifolia) on the treatment of wastewater from rice mills with different Chemical Oxygen Demand (COD) strengths for 3 months. Waste water samples from a rice mill at the Eravur, Batticaloa District, Sri Lanka were collected and different COD strength of wastewater samples such as 2000, 4000, 6000, 8000, and 10000 mg/l were prepared according to the raw wastewater's COD strength, by adding glucose to increase the concentration of wastewater or dilute the wastewater by adding required amount of water. Prepared wastewaters with different COD strength were fed to the different treatments containing Typha latifolia as a wetland crop. The plants were planted in broad plastic basins with a soil depth of one foot with the retention time of one day.*

Results obtained in this study showed different performances: Treatment of irrigating Typha latifolia using wastewater with COD- 8000 mg/l strength showed a good purifying efficiency particularly the COD removal efficiency is about 96.1% and this treatment showed good tiller production. The best results for neutralizing pH was obtained in the treatment of COD-10,000 mg/l, high TSS removal efficiency was observed in the treatment of COD-2000 mg/l.

Key words: Chemical Oxygen Demand, conductivity, effluent, tillering ability, *Typha latifolia*