

D1-16 Report on biorefinery waste water collection strategy

It is estimated that straw-based biochemical Biorefineries generate up to 13.4 volumes of wastewater per volume ethanol produced. The wastewater (stillage) contains a high COD level, which would cause severe pollution if released into the environment without treatment. A more sustainable solution probably involves anaerobic digestion to provide energy for the biorefinery. For small-scale operations, the residual lignin solids may be recycled to the soil as compost. For larger operations combustion of the compost to provide extra process heat may be a more favourable option due to the logistic difficulty in handling large volumes of waste. On the other hand, it has been found that the stillage bears close resemblance to sewage sludge and farm slurries which may be readily co-treated. This provides options for operators to take advantage of economy of scale, load balancing, facilitated waste treatment, etc.

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