

## Treatment of distillery spent wash

The Central Pollution Control Board at its 147<sup>th</sup> Meeting held on 23<sup>rd</sup> May, 2008 considered the problems associated with distilleries due to the currently used treatment methods of composting, ferti-irrigation and one time land application of spent wash vis-à-vis advanced technologies including evaporation, concentration, incineration of concentrated spent wash for power generation. The Board considered and approved the following recommendations for achieving zero discharge.

- A Proposals for establishing standalone distilleries involving composting, ferti-irrigation and one time land application of spent wash may not be considered by SPC/PCC and MoEF.
- B Proposals for establishing distilleries attached with sugar units may be considered if they follow one of the following options:
  - Bio-methanation followed by bio-composting; or
  - Re-boiler/Evaporation/Concentration followed by incineration of concentrated spent wash in boiler (for power generation)
- C The proposals of existing stand alone distilleries for increase of production/expansion based on composting, ferti-irrigation and one time land application of spent wash may not be considered henceforth by SPCB/PCC/MoEF.
- D The existing distilleries (both stand alone and those attached with sugar units) that are not complying with the required environmental standards may be asked to switch over to emerging technologies from the existing technologies of composting, ferti-irrigation and one time land application of spent wash in a time bound manner.

While recommending the above, the following aspects were duly taken into account:

- i. Difficulties of standalone distilleries to get the requisite amount of press mud, specially where sugar industry does not exist.
- ii. For ferti-irrigation, waste water is required to be treated up to BOD of 100 mg/l and TDS of 2100 mg/l. Besides, large amounts of land at the rate of 9 Ha per KL of alcohol are required.
- iii. Ferti-irrigation, composting and land application options did not work in rainy season.

Distilleries attached to sugar mills installed improved technologies for concentration of spent wash by installing R.O/multiple effect evaporators etc for achieving 50% reduction in volume of spent wash. The requirement of press mud as well as the land for making compost also gets substantially reduced, strictly adhering to the protocol for making bio compost.

The CPCB in its draft guidelines for co-processing of distillery spent wash concentrate in cement industry made the following observations:

- a) The adverse effect of spent wash disposal via bio compost is magnified during the rainy season.
- b) Concentration of spent wash in multiple effect evaporators and its subsequent incineration is not found technically and economically feasible in majority of cases. Incineration of concentrated spent wash in sugar mill boilers creates major problems due to scaling and frequent shut down of boilers for maintenance etc.

The guidelines given by the CPCB for co-processing of concentrated spent wash in cement kilns require certain modifications in the cement kilns. The protocol to be followed for trial run for co-processing has been detailed. As per CPCB, the bio compost contains 2.5% nitrogen, 1.8% phosphorous and 3% potassium. Based on the total production of bio compost produced, the requirement of nitrogen on an all India basis is met up to 6.24% phosphorous, 9.06% and potassium 51.06%. Moreover, the above fertilizer is produced from organic matter substituting the imported chemical fertilizers which are highly subsidized.

The transportation of spent wash from the distillery to the cement factory also require careful handling in tankers specially designed for this purpose.

The co-processing plants shall be designed, equipped built and operated in such a way as to prevent emission into the air giving rise to significant ground level air pollution; in particular exhaust gases shall be discharged in a controlled fashion by means of a stack, the height of which is calculated in such a way as to safeguard human health and environment.

\*\*\*\*\*