

Sugar Waste to Fertiliser

Why in news?

\n\n

CSIR lab has developed a solution to separate hazardous pollutant from organic matter in sugarcane distillery process.

\n\n

What are the concerns with sugarcane distillery process?

\n\n

\n

- For every litre of alcohol produced from fermentation of sugarcane molasses, distilleries generate 10-15 litres of wastewater effluent or “spent-wash”.

\n

- Molasses-based distilleries in India churning out 2.5-2.6 billion litres of alcohol discharge 30-35 billion litres of this hazardous residual liquid annually.

\n

- This Spent-wash if disposed untreated can contaminate surface and ground water

\n

- Distilleries in India currently manage their spent-wash mainly by converting it into manure by mixing the wastewater with press-mud, a residue from sugar mills.

\n

- However, press-mud is available only during the 150-160 days when the mills are running, forcing the distilleries to limit their operations to the crushing season.

\n

\n\n

What is the recent development of CSIR lab?

\n\n

\n

- The Central Salt & Marine Chemicals Research Institute (CSMCRI) will

recovery of potash salts from the “lean” spent-wash, which then undergoes evaporation to yield recycled water and residues.

\n

- The residues are further mixed with the organics recovered in the first stage.
- The technology separates complex organic compounds from spent-wash through a coagulation process.
- This generates valuable organic matter (which can be converted into animal feed formulations), potassium nitrate (fertiliser) and reclaimed water (reusable in the molasses fermentation process).
- The process yields 10 tonnes of complex organics, 2.5 tonnes of potassium nitrate and 75,000-80,000 litres of recycled water from every one lakh litres of spent-wash.

\n

\n\n

What is the significance of this development?

\n\n

\n

- The recent technology will help distilleries comply with the Central Pollution Control Board’s mandated zero liquid discharge (ZLD) action plans.
- It would also meet up to a tenth of India’s potassium-based fertiliser requirements, now entirely met through imports.
- This will encourage more distilleries to come up and produce ethanol for blending with petrol, cutting the country’s oil import bill and bringing sugarcane growers better returns.

\n

\n\n

\n\n

Source: Indian Express

\n