

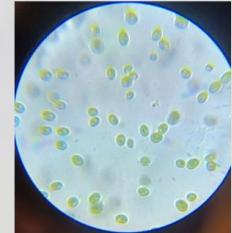
Microalgae for utilization of molasses spent wash effluent

- ❑ A Sustainable, Circular & Clean-Tech option for value recovery from Spent-wash
- ❑ A process developed at lab, demonstrated at pilot-scale and now ready for commercial SCALE-UP
- ❑ Pilot demos conducted on molasses spent-wash
- ❑ Microalgae has huge potential in agriculture as crop growth bio-stimulant
- ❑ Microalgae can also be used as a natural and nutritious feed in aquaculture

Microalgae growing well on spent-wash at pilot-plant



Molasses spent-wash



Microalgae cells love it!!



Treated effluent (Left) and
Treated effluent post processing
through RO (Right)



High protein-vitamin-PUFA-minerals algae for
use as **Aquafeed & Crop Growth Stimulant**



Microalgae growing well on
spent-wash at pilot-plant

Techno-Economics for Investment in Spent-wash utilization project

Financials for the full-scale Plant

Plant Capacity	800 KLD
Effluent COD	1,20,000 mg/L
Land required	160 acres
Capital Investment	₹127 Crores
Operating Expenses	₹77 Crores/ year
Revenue from microalgae-based products (@₹60/Litre)	₹380 Crores/ year
Payback on investment	<1 year

Purpose of the DEMO plant will be to validate the product and set-up the market, before putting up a full-scale plant

Financials for a DEMO Plant

Plant Capacity	5 KLD
Effluent COD	1,20,000 mg/L
Land required	1.2 acres
Capital Investment	₹3.8 Crores
Operating Expenses	₹1.1 Crores/ year
Revenue from microalgae-based products (@₹60/Litre)	₹2.8 Crores/ year
Payback on investment	2-3 years

* Market price of microalgae-based biostimulant is ~450-900/Litre

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