

Molasses in soil or
water. it reduces

Environment



**ASSIGN
BUSTER**

Molasses based distilleries discharge huge volume of wastewater and are included in the “ Red category” industries as per the Ministry of Environment of Forests(MOEF) because of their high polluting potential . The most crucial environmental issue is the pollution caused by distillery effluent. Distillery spent wash is the unwanted residual liquid waste produced during alcohol production . The untreated or partially treated effluent finds access to waterbodies , despite various standards being imposed on effluent quality. The distillery wastewater has a characteristic objectionable odour which poses a serious threat to the water quality. It has a high pollution load which would result in eutrophication of contaminated water sources. Dark brown colour of MSW is due to the presence of melanoidin pigment. There is a need for developing new technologies to remediate the effluent efficiently and inexpensively.

Potential anaerobic and aerobic microbes as well as physicochemical processes are used as viable remediation technologies to combat environmental. The difficult task in remediating distillery effluent is its colour, comprises of dark brown recalcitrant pigment, melanoidin. It is highly resistant to biological treatments including microbial degradation.

The compounds are toxic to the existing microbial population in soil or water. It reduces sunlight penetration in water bodies, thus leading decrease in both photosynthetic activity and dissolved oxygen concentration affecting aquatic life. Melanoidins are brown, heterogeneous polymer , high molecular weight compounds generated during later stages of the Maillard reaction from reducing sugars and amino acids during food processing and preservation at high temperatures and low water activity. Their

presence is detected in foods that are subjected to some form of non-enzymatic browning, like barley malts, bread crust, bakery products and coffee.

They exist in the wastewater of sugar refineries, requiring treatment to avoid contamination in the waterbodies. Melanoidin-producing reactions take place during malt kilning and then involved in wort boiling.