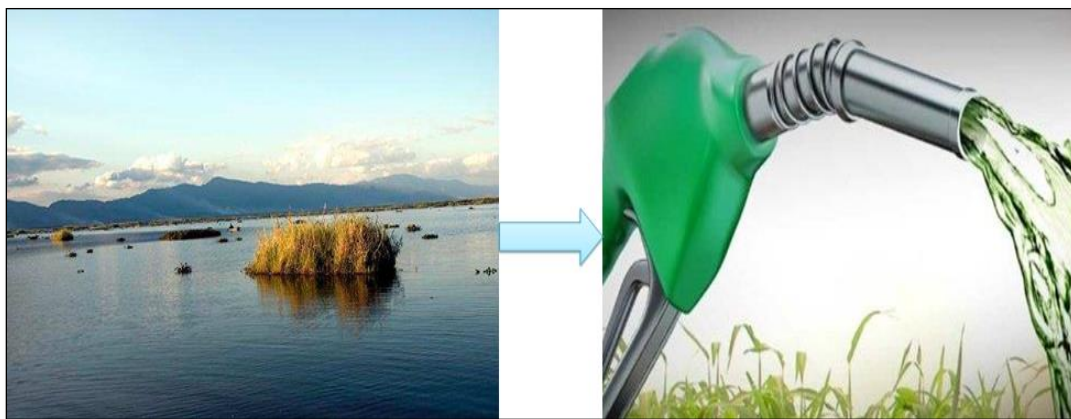


Development of Pre-treatment Technology for Invasive *Para grass* Biomass from Loktak Lake



Rising demand of energy coupled with depletion of fossil fuels is a matter of concern at present. Therefore, situation demands creation of alternate sources of energy. At present, biofuels from lignocellulosic biomass (LB) is one of promising alternative to meet the increasing demand for energy. The renewable LB is a potential source of fermentable sugars, and easy availability, abundance and non-food status make it viable, and inexpensive source for bioenergy production. However, recalcitrant nature of LB makes bioethanol production from it a difficult process. Cell wall polymers such as lignin hinder the production of monomer sugars. The structure modification of the polymer with pre-treatment process *i.e.*, lignin removal from LB, helps in production of more fermentable sugars (monomer sugars).

Researchers at Institute of Bioresources and Sustainable Development (IBSD), Imphal has developed a pre-treatment technology for biomass processing for bioethanol production from Loktak Lake. The process involves fermentation of Para grass (*Brachiaria mutica*) which is a vigorous, semi-prostrate perennial grass with creeping stolons which can grow up to 5 meters long.

The Loktak Lake is the largest freshwater lake in north eastern India and it is famous for floating vegetation called phumdis. However, water pollution has changed natural flora of phumdis, and now, the phumdis are dominated by invasive grasses. This invasive grass poses a serious threat to the ecology of the lake. The commercial application of *Para grass* for bioethanol production by converting the weed biomass to bioethanol appears as a potential application of the weed.

Thus, the use of Para grass as biorefinery feedstock offers a potential strategy to address the sustainable utilization of this invasive grass thereby keeping a check on its growth in the Loktak Lake.

Dr. Bilqeesa Bhat
Project Scientist,
bhat.bilqeesa3000@gmail.com