

# The Biowat - Meghalaya

#### Introduction:

The Biowat (Biomedical Waste Treatment) is a low-cost waste treating plant for biomedical liquid waste generated in a PHC at Nartiang, Meghalaya. Earlier, the biomedical liquid waste of the PHC was discharged unsafely in the nearby stream, against the Bio- Medical Waste Management Rules, 2016. The low-cost Biowat plant created at the PHC helped in preventing the local environment.



## Implementation of the practice

Under this initiative biomedical liquid waste is first segregated from the other wastage and it is treated with the following four stages before disposal:

Stage 1: Intermittent/demand operated slow sand filtration
The first stage addresses the colour, turbidity issues. The liquid waste is backwashed into the sand filters.

Stage 2: Chlorine Disinfection

Chlorine demand of the biowaste batch is determined and biomedical waste is dosed with bleaching powder.

Stage 3: Carbon Adsorption

At this stage addresses colour, odour, chemical, detergents, and other pollutants issues backwashed into the sand filters.

Stage 4: De-chlorination with Vitamin-C (ascorbic acid)
In the last stage free chlorine residuals are neutralized by treating the waste with Vitamin-C before discharge is backwashed into the sand filters.



#### Results

• The BIOWAT has been constantly achieving discharge parameters of the effluent:



o Free Chlorine: omg/L

o pH: 7-7.5

o Fish survival: >96 hours: 100%

o Turbidity: <5 NTU

- Other benefits:
  - o simple operation and maintenance
  - o efficient chlorine removal
  - o zero consumption of energy for daily operation
  - o low start-up and running cost

### **Lessons Learnt**

The low-cost plant with a set-up expense of INR 2.5 Lakh and annual maintenance cost INR 10,000 has been effective in managing hazardous biomedical wastage with simple operation a

### Conclusion

The low-cost and easy maintenance plant makes this initiative highly scalable across other PHC's and CHCs in the country.

# **Further Readings:**

https://cdn.s3waas.gov.in/s384f7e69969dea92a925508f7c1f9579a/uploads/2020/06/20200624 34.pdf.