



Field visit to Pivot faecal sludge treatment plant, in Kigali, Rwanda

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Context

- The whole city of Kigali, in Rwanda, relies on on-site sanitation facilities.
- Most of the faecal sludge from these facilities is untreated.
- A faecal sludge treatment plant was built and has been operated by Pivot.
- The plant treats faecal sludge from mostly septic tanks, and occasionally from pit latrines.
- The faecal sludge is turned into a biofuel after dewatering and drying.
- The part of sludge being treated in Kigali is low, but the setup of Pivot treatment plant reflects efforts to improve the situation.
- Pivot is actually working in the up-scale of the plant in order to have a higher capacity of sludge to treat.



Dr. Santiago Septien Stringel, research staff from the Pollution Research Group, visited the faecal sludge plant from Pivot, in Kigali, Rwanda, after a field trip in Uganda.

In the treatment plant, everything starts when faecal sludge is discharged into a holding tank.



From there, the treatment starts with the addition of flocculent.



Flocculent solution preparation



Mixing tank of faecal sludge with flocculent



Inlet of flocculent solution and manual mixing

The sludge is then sent to a machine for mechanical dewatering.



Inlet of faecal sludge into the mechanical dewatering machine



Mechanical dewatering machine

Then after, faecal sludge undergoes further dewatering in a tank through settling.



Outlet of the mechanical dewatering machine



Baffled settling tank for further dewatering

At the outlet of the tank, the dewatered sludge is collected by a truck and sent to a solar greenhouse-type dryer.



Collection point of dewatered faecal sludge at the outlet of the settling tank



Discharge of dewatered faecal sludge inside the greenhouse

In the greenhouse, the sludge is kept for a couple of weeks for the removal of part of its moisture.



Exterior of the greenhouses



Interior of the greenhouses



Manual spreading of faecal sludge



Faecal sludge spread

The partially dried is sludge is then treated into a rotary drum drier to achieve low moisture content.



Furnace to provide the heat for drying through cardboard combustion



Rotary drum drier (convective drying from the gases of combustion)



Cyclone to recover the dried material



Storage of dried faecal sludge

The final product is sold
in the market as a
biofuel.



References

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