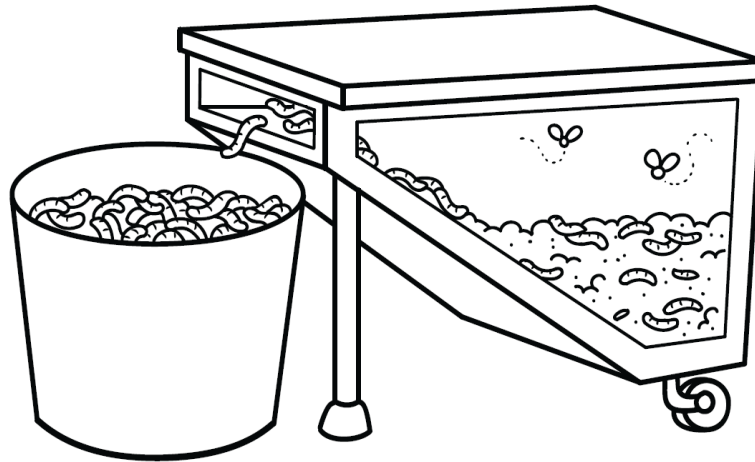




Black Soldier Fly Larvae



Container used to grow black soldier fly larvae (Credit: CAWST)



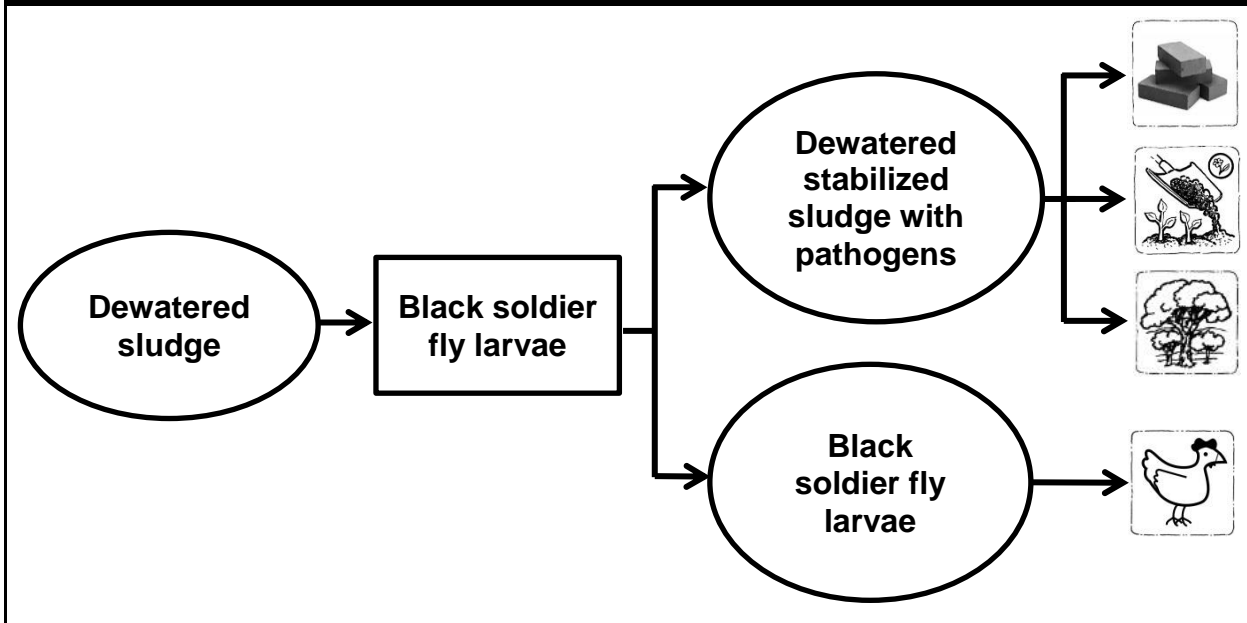
Black soldier fly larvae
(Credit: www.michaelcmichaeldo.com)





Pilot scale treatment facility in Indonesia (Credit: Bram Dortmans)

- **Design:** Black soldier fly larvae eat faecal sludge, and in doing so they reduce the volume and stabilize the sludge. Black soldier fly larvae are rich in fat and protein. They are fed to livestock as a source of protein. A black soldier fly does not need to eat once it can fly - in fact it does not have a mouth. Therefore, they are not a vector and do not spread pathogens.
- **Operation:** Black soldier fly larvae treatment is done in batches or semi-continuously. Faecal sludge is placed in a container with black soldier fly eggs or larvae. Other organic waste streams can be added as well to be co-treated. The larvae are harvested periodically to feed to livestock.
- **Time and energy required:** Larvae digest faecal sludge in days. The technology needs low amounts of energy.

Treatment Technology Description



| | | |
|------------------------------|---|--|
| Treatment Objectives | Pathogen Inactivation | Low |
| | Dewatering | Low |
| | Stabilization/ Nutrient Management | Yes |
| Pathogen Inactivation |  | <ul style="list-style-type: none"> • Some pathogens are inactivated through storage. • Some pathogens are inactivated through other mechanisms, but it is not well understood and more research is needed. • Helminth eggs are not inactivated. |
| Level of Development |  | <ul style="list-style-type: none"> • Black soldier fly larvae treatment for faecal sludge is in the pilot stage. Research is ongoing. |

References

Strande, L., Ronteltap, M. & Brdjanovic, D. (2014). *Faecal sludge management: Systems approach for implementation and operation*. London, UK: IWA Publishing. Retrieved from www.sandec.ch/fsm_book