

Understanding anaerobic biodegradability of organic menstrual care products: technical feasibility and sector receptivity

"We are so grateful for this research. This is a great first step in working out better disposal systems for menstrual waste." - Kimberley Dobney, Turn and Flow

AIM:

Turn is a product service system (PSS) to recycle organic menstrual care products and to stop them being sent to landfill, being incinerated or being flushed. This is a complex and stigmatised topic hence Turn will also be raising public awareness on the impact of traditional menstrual care products (on the planet and the body) and encouraging the use of organic products as an alternative.

This proposal brings together engineers and social scientists to prove the feasibility of value recovery from organic menstrual care products. The focus is on elucidating technical viability by investigating products biodegradability and potential for biogas formation in anaerobic digesters (AD); as well as informing sector receptivity towards this new feedstock by conducting semi-structured interviews with key AD practitioners. The Environment Agency will be included in the interviews in order to comprehensively understand the regulatory limitations for accepting used organic menstrual care products in existing AD sites. This proposal will start a collaboration between Turn and Cranfield University.

RESULTS:

- Biodegradability of MMPs labelled as organic was found to be low compared with other organic feedstocks. Biogas potential was observed to be higher for wet AD than dry AD processes, although the difficulties of treating a solid waste with high water absorbing capacity as MMP in wet ADs means that dry AD is comparatively more practical even if results in more limited biogas yields.
- 59% of the survey participants stated to be aware of organic and biodegradable MMPs, although only 17% stated to use them. The vast majority of respondents (82%) indicated that they would be willing to try using organic and biodegradable period products at home.
- Collection of soiled MMP with black bins at household level will classify them within the "mixed municipal waste" category, diverting them to the treatment processes currently available, including AD for some UK areas. Separate collection of these products in commercial premises will result in a classification as "offensive municipal waste" with their further acceptance in AD sites restricted by the operating permits of each facility.



"I am very happy to have delivered this project. Menstrual management is still a taboo in many scenarios and sustainable treatment of menstrual waste needs to gain much more attention. Current disposal routes are predominantly based on landfilling or incineration, with a significant amount of menstrual waste reaching the water bodies and polluting the environment. Turn's ambition to increase awareness about poor practices and identify opportunities to recover value from menstrual waste has potential to make a significant impact."

- Dr Yadira Bajón Fernández, Cranfield University