Incineration of Faecal Matter for Treatment and Sanitation

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Abstract

Incineration of faeces offers a treatment method that is useful in reducing the final quantities of faeces and toilet paper. It is also useful as a sanitation method for faeces. The aim of this work was to increase the knowledge about incineration as a treatment and sanitation method for faeces. The faecal matter used in this study contained ash used as additive material during the collection phase. The incinerated faeces/ash mixture had an ash content of 86%. It caught fire when the temperatures reached 800°C and beyond and after this, temperatures in the range of 800 to 1000 °C were recorded. The mass reduction was 15 - 36% and the organic matter was reduced by 78 - 99%. The plant nutrient content was reduced, total nitrogen by 90 - 94% and available phosphorus by 70 - 94%. Incinerating material with a dry matter (DM) of less than 90% resulted in a strong smell. When the DM was higher, the smell lessened. The reduction in mass of excreta and the possibility to re-use ashes as additives in toilets can be advantages of incineration of faeces.

Key words: dry sanitation, ecological sanitation, faeces, incineration, nutrients, temperature

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