

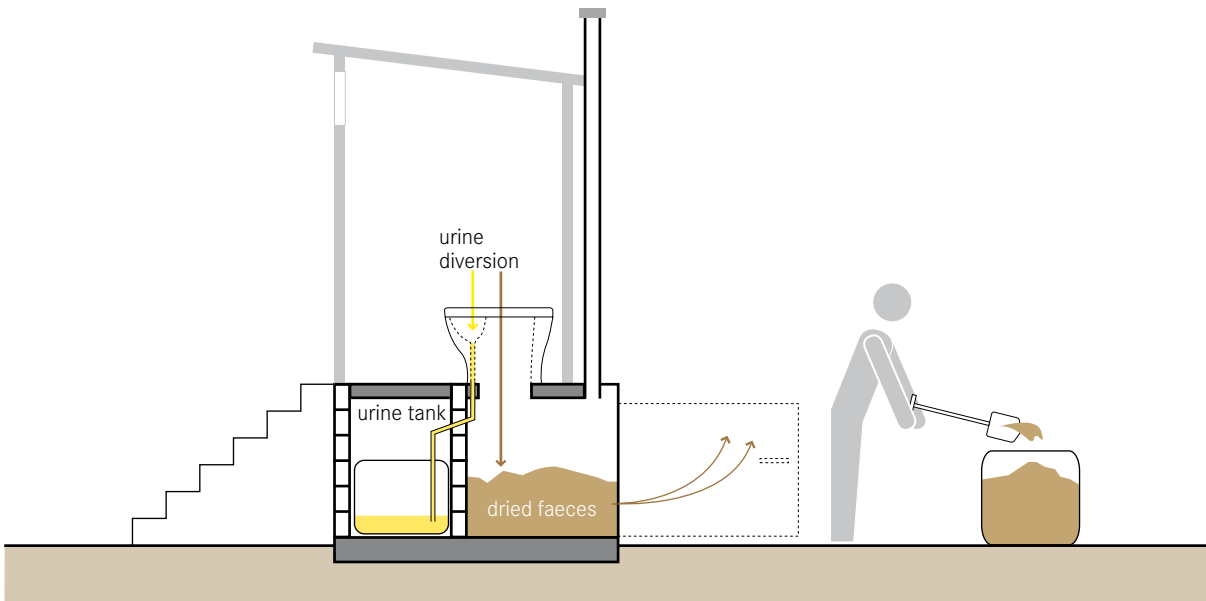


Application Level:	Management Level:	Inputs:  Dried Faeces
<input checked="" type="checkbox"/> Household	<input checked="" type="checkbox"/> Household	Outputs:  Biomass
<input checked="" type="checkbox"/> Neighbourhood	<input checked="" type="checkbox"/> Shared	
<input type="checkbox"/> City	<input checked="" type="checkbox"/> Public	



When faeces are stored in the absence of moisture (i.e., urine), they dehydrate into a crumbly, white-beige, coarse, flaky material or powder. The moisture naturally present in the faeces evaporates and/or is absorbed by the drying material (e.g., ash, sawdust, lime) that is added to them. Dried faeces can be used as a soil conditioner.

Dehydration is different from composting because the organic material present is not degraded or transformed; only the moisture is removed. Faeces will reduce in volume by about 75% after dehydration. Completely dry faeces are a crumbly, powdery substance. The shells and carcasses of worms and insects in the faeces also dehydrate and become part of the dried material. The material is rich in carbon and nutrients, but may still contain protozoan cysts or oocysts (spores that can survive extreme environmental conditions and be re-animated under favourable conditions) and other pathogens. The degree of pathogen inactivation will depend on the temperature, the pH (using ash or lime raises the pH) and storage time. It is generally accepted that faeces should be stored between 6 to 24 months, although pathogens may

still exist after this time (refer to WHO guidelines for specific guidance).

The material can be mixed into soil for agriculture (depending on acceptance) or safely mixed into soil or buried elsewhere. Extended storage is also an option if there is no immediate use for the material (see D.12).

Design Considerations Faeces that are dried and kept at between 2 and 20 °C should be stored for 1.5 to 2 years before being used at the household or regional level. At higher temperatures (i.e., >20 °C average), storage over 1 year is recommended to inactivate *Ascaris* eggs (a type of parasitic worm). A shorter storage time of 6 months is required if the faeces have a pH above 9 (i.e., adding ash or lime increases the pH). WHO guidelines concerning the use of excreta in agriculture should be consulted beforehand.

Appropriateness Dried faeces are not as useful as a soil amendment as composted faeces. However, they can help to replenish poor soil and to boost the carbon and water-storing properties of soil, while posing low risk of pathogen transmission.

Health Aspects/Acceptance The handling and use of dried faeces may not be acceptable to some people. However, because dehydrated faeces should be dry, crumbly, and odour free, using them might be easier to accept than manure or sludge. Dry faeces are a hostile environment for organisms and they do not survive long in it. If water or urine is mixed with the drying faeces, however, odours and organisms may become problematic because bacteria easily survive and multiply in wet faeces. Warm, moist environments are conducive to anaerobic processes, which can generate offensive odours.

Dehydrated faeces should not be applied to crops less than one month before they are harvested. This waiting period is especially important for crops that are consumed raw.

Operation & Maintenance When removing dehydrated faeces from dehydration vaults, care must be taken to prevent the powder from blowing and being inhaled. Workers should wear appropriate protective clothing.

Faeces should be kept as dry as possible. If by accident, water or urine enters and mixes with drying faeces, more ash, lime or dry soil should be added to help absorb the moisture. Prevention is the best way to keep faeces dry.

Pros & Cons

- + Can improve the structure and water-holding capacity of soil
- + Low risk of pathogen transmission
- + Low costs
- Labour intensive
- Pathogens may exist in a dormant stage (cysts and oocysts) which may become infectious if moisture is added
- Does not replace fertilizer (N, P, K)
- Social acceptance may be low in some areas

References & Further Reading

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