

# **An Assessment of community attitude on human excreta use and products produced from human excreta plots**

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## **Abstract**

The use of human excreta is not a new practice; the Chinese have been composting human excreta for a thousand years and the Japanese introduced excreta use in the 13<sup>th</sup> century. Today in China they are using human excreta by first using a mixture of urine and faeces for biogas generation the bi-products from this process is used directly as basal fertilizer and top dressing (Winblad 2000) In Zimbabwe and other African countries the human excreta has been used subconsciously, observations of abnormal rapid crop growth behind sleeping quarters where people urinate at night have been made (Guzha 2000) In highly developed countries such as Sweden the use of excreta in agriculture has gained some new impetus. A number of ecological villages have been established by people interested in leading environmentally friendly life styles (Drangert, 1998). The major challenge facing the use of human excreta in agriculture is the attitudes, beliefs associated with the use of nutrients for crop production.

The objective of the study was to assess community attitude on human excreta use and products produced from human excreta plots. Baseline surveys were done with questionnaires based on a random sampling. A total sample size of 5% of the study population was taken giving above 90% confidence.

The study revealed that community attitude on using human excreta is largely positive with 76.7% indicating that they would eat produce from ecosan and 78.1% indicated that they are willingly to use human excreta as a crop nutrient. The study recommended that belief myth and taboos associated with human excreta use be dealt with through participatory ecological sanitation hygiene education (PESHE). It was also recommended that local authorities and government adopts human excreta use in agriculture as an alternative excreta management option.

**Key words** community attitudes, ecosan practices, beliefs, myth and taboos

## **1.0 Introduction**

The use of human excreta as manure and fertilizer in crop production is increasing becoming popular due to the rapid increase in the prices of commercial fertilizers. Most communal farmers are unable to purchase commercial fertilizers and are having to cultivate without crop nutrients resulting in poor crop yields and sub-economic production. The major hindrances towards the use of human excreta in crop production are the taboos, myth and to some extent negative attitudes with respect to excreta use for production. In experimental work done in Mazoe catchment in Zimbabwe early ecological sanitation innovators almost lost their local market due to negative attitudes and misinformation about their practices. Efforts should be made to establish what people think about the use of human excreta in crop production before a new project is introduced. The findings of such an assessment will help to inform the project on the likelihood of success or failure that might be encountered. It will also indicate issues myth, taboos and realities that implementers and practitioners will have to deal with when promoting the use of human excreta for production.

The study was carried out in Upper Manyame Catchment with a special focus on Marondera district Chiota communal lands. The area consists of poor sandy granite soils which have been worked on for many years. The main economic activities are horticultural production with most of the produces being send to Mbare musika market in Harare. At any one time the soils would be used to produce one crop or another, this means the soils are highly overexploited in terms of nutrient content. Alternative nutrient supplements need to be promoted such as the use of human excreta in production. Whilst this has been shown as a viable option issues related to community attitudes with respect should be dealt with as part of the holistic ecosan promotion strategy it was the aim of this study to investigate the attitudes with a view of working out a strategy to deal with them in the promotion of ecological sanitation.

## **2.0 Methodology**

Surveys using questionnaires and focus group discussion FGDs were employed for gathering baseline data. A random sample was taken by selecting every fifth household in the study area. The sample size of the study represented a 5% of the study population. People who participated in the FGDs were those who were not interviewed during key informant interviews. About 12 people were in each FGD and a total of four groups engaged in the discussion. Leading questions related to attitudes and beliefs were given to each group for discussion.

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Consensus and disagreements were noted and recorded on prescribed form and later quantified. Ecological sanitation education was carried out using participatory approaches to introduce the concept to participants. Participants involved in ecological sanitation and those interested were invited to a workshop where technical presentations on eco-san were made. Participants were also given an opportunity to share their experiences in ecosan during group discussions and also in plenary. The PESHE workshop concluded with a field day where participants showcased their trials using human excreta.

### 3.0 Results and discussions

#### 3.1 Attitudes and beliefs

Traditional uses of human excreta were investigated with a view of establishing whether both urine and faecal matter have been used for any other purposes in the past. The idea was to try and link the traditional practices with ecological sanitation. Table 3.1 is a record of the farmer's response to the question of traditional uses of human excreta.

Table 3.1 Traditional uses of human Excreta

<i>Responses</i>	<i>Frequency</i>	<i>%</i>
Does not have any traditional use	45	70.3
Have medicinal functions	19	29.7
Total	64	100

Investigation on the traditional uses of human excreta was of particular interest because through ecosan value was to be given to excreta. It was found that, traditionally human excreta had no use as indicated by 70.3% of the households. A few respondents said urine had medicinal properties or could be used as a pesticide (29.7%). It was indicated by some interviewees that human excreta is associated with witchcraft, defecating on someone's property is seen as a taboo, faeces should be disposed of as far as possible from the household and should never be tempered with. An enemy can use your faeces to bewitch you therefore one should be careful on how and where they dispose their faecal matter. Urine has been used traditionally as medicine in the treatment of athlete, sore eyes, impotence, burns, runyoka (illness caused by having sex with someone's wife); urine has also been used as a love potion. None of the respondents have indicated using human excreta deliberately for agricultural production. Ecological sanitation therefore was therefore a new concept in the project area.

The following is a tabulation of the findings and responses given by respondents when asked about their knowledge of excreta use in agriculture the households gave the following responses

Table 3.2 Knowledge of excreta use in agriculture

<i>Responses</i>	<i>Frequency</i>	<i>%</i>
We do not know anything	42	65.6
Human excreta produces fertilizer and manure	11	17.2
Crops grow well when fertilized with human excreta	8	12.5
We have seen human excreta being used as manure	3	4.7
Total	64	100

Responses to this question were of critical importance to the introduction of ecological sanitation in the community the following were the findings. The highest percentage of households said they knew nothing (65.6%), 17.2% said human excreta produces fertilizer and manure, 12.5% said crops grow well when fertilized with human manure, 4.7% said they had seen it somewhere.

Follow up questions were directed to 32 households who did not have any experience with regard to excreta use and the table 3.3 below records responses to the follow up question

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Table 3.3 presumed effects of urine on crops

<i>Responses</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Urine will burn crops	8	25.6
Crops will grow very well	8	24.4
Do not know what will happen	16	50
<b>Total</b>	<b>32</b>	<b>100</b>

While 50% (32 households) had no experience with regards to plants grown where people urinate, a significant proportion (25%) said crops grow well, 23.4% said urine burns crops. As a follow up to knowledge on traditional uses of human excreta we asked the respondents if they ate wild cucumbers and guavas.

The table 3.4 below is a record of the findings with respect to the community attitude towards wild guavas and cucumbers. The assumption behind the question which gave us the responses below was that the seed of wild cucumber and guavas are spread by either the birds or through human excreta

Table 3.4 Community Attitudes towards bush guava and cucumber

<i>Responses</i>	<i>Frequency</i>	<i>Percentages</i>
<i>Eat wild guavas and cucumbers</i>	<i>56</i>	<i>85.9</i>
<i>Do not eat wild these wild fruits</i>	<i>8</i>	<i>14.1</i>
<b>Total</b>	<b>64</b>	<b>100</b>

Communities were further asked why they would eat wild fruits the idea was to verify whether they regard wild fruits and produce associated with human excreta is considered ordinary. The table 3.5 below is a summary of the responses of the reason why communities would eat such produces. The assumption behind the question which gave us the responses below was that the seed of wild cucumber and guavas are spread by either the birds or through human excreta

Table 3.5 Reasons for eating wild guavas and cucumbers

<i>Responses</i>	<i>Frequency</i>	<i>Percentages</i>
Because it is ordinary fruit	32	57.8
There is no danger in eating the fruits	24	42.2
<b>Total</b>	<b>56</b>	<b>100</b>

More than half of the people (79.7%) felt there was no problem in eating crops grown using human urine as a fertilizer. Only 12.5% said they would not eat because they associate the crops with human faeces and it is unhygienic. 57.8% of the households thought crops would grow well if fertilized with human excreta, 25% had no idea on the effect of urine on crops while a less significant proportion (3.1%) thought this would spread disease, 56 households representing 85.9% of the sample said they eat the wild fruits while 14.1% said they do not eat the fruits. Of the 56 households who said they eat the wild fruit, 57.8% said because it is ordinary fruit, while 29.7% said there is no danger in eating the wild fruits.

When asked what they thought would happen if we used human urine and faeces to fertilize crops and the following were the findings as tabulated in table 3.6 below

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Table 3.6 Presumed effects of ecofert and human excreta on crops

<i>Responses</i>	<i>Frequency</i>	<i>Percentage%</i>
Crops grow	37	57.8
Do not know	16	25.0
Taboo	6	9.4
No problem	3	4.7
Causes diseases	2	3.1
Total	64	100

Asked why they would eat crops grown using human excreta the following responses were given as indicated in tables 3.6 and 3.7. The reason behind such a question was to ascertain whether communities regard produces associated with human excreta as normal produces.

Table 3.7 Eating crops fertilized with human excreta

<i>Responses</i>	<i>Frequency</i>	<i>Percentage</i>
Would eat	51	79.7
Would not eat	13	20.3
Total	64	100

A significant proportion (79.7%) said they would eat crops grown with human manure while 20.3% said they would not eat the produce. Of those who said they would not eat 66.7 said they associate the produce with faeces while the remaining 33.3% said it was not hygienic.

Asked whether they would eat produce from human excreta 78.1% said they would eat for the following 59.4% said human manure would be as good as animal manure, 18.8% said they have seen the use of human manure in Harare town, 9.4% were not sure, they preferred to wait until their friends have tried it.

Finally the respondents were asked if they would like to experiment in the use of human excreta and urine as fertilizer the following answers were given. The idea was to insure that who ever enter into the experiment enters it voluntarily. Table 5.7 is a record of the community willingness to participate in the ecological sanitation experiments.

Table 3.8 Willingness to participate in the experiment

<i>Responses</i>	<i>Frequency</i>	<i>%</i>
<i>Willing to participate</i>	<i>50</i>	<i>78.1</i>
<i>Not willing to participate</i>	<i>14</i>	<i>21.9</i>
<i>Total</i>	<i>64</i>	<i>100</i>

About 78.1% said they would like to try while 21.9% said they would not like to try because they felt it was unhygienic or socially unacceptable.

Farmers were asked why they wanted to participate in the experiment and the table 5.8 below summarizes the responses.

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Table 3.9 Reasons for participating in the experiment

<i>Responses</i>	<i>Frequency</i>	<i>Percentage</i>
<i>Fertilizer not available</i>	22	34.4
<i>Just wanted to experiment</i>	11	17.2
<i>Fertilizer was getting expensive</i>	9	14.1
<i>Have experienced it elsewhere</i>	4	6.3
<b>Total</b>	<b>64</b>	<b>100</b>

Basing on the above data people were willing to experiment because manure and fertilizer was not available as alluded to by 34.4% some just wanted to experiment as said by 17.2%, 14.1% sited that fertilizer was getting too expensive for them and 6.3% said they have experiences elsewhere on the use of human excreta and urine. An investigation was attempted on the availability of fertilizer on the market or farmers accessibility to fertilizer that is their ability and willingness to purchase the fertilizer and table 3.10 gives a summary of the findings

Table 3.10 Availability of fertilizer to families

<i>Responses</i>	<i>Frequency</i>	<i>Percentages</i>
<i>Do not get fertilizer</i>	62	96.9
<i>Managed to get enough</i>	2	3.1
<b>Total</b>	<b>64</b>	<b>100</b>

Table 3.10 above show that 96.9% of the households do not always get enough fertilizer because it is expensive (91.9%) or it is not available on the market (7.8%). This may suggest that fertilizer is not readily available on the market creating an opportunity for humanure + ecofert nutrient amendment strategy to be taken up by the farmers.

### Discussions and conclusions

Bearing in mind the limitation the study revealed that traditionally faeces did not have any known function in Chiota communal areas Manyame catchment as alluded to by 70.3% of the study sample, but urine has been used for the treatment of athlete feet and as an important component in the preparation of love portion as was sited by 29.7% of the study. This is an important entry advantage in the promotion of ecological sanitation. Promoters could enter a new community by drawing parallels with traditional uses of urine and its use in agriculture. Whilst 65.6% of the sample indicated that they do not know about the use of human excreta in agriculture 78.1% were prepared to give it a trial and ready to eat produces grown using humanure and ecofert. The fact that 96.9% of the target population did not get fertilizer means that the introduction of ecological sanitation is opportune since humanure and ecofert will fill a gap and need in the community making it easily acceptable. Community attitude on using human excreta is largely positive with 76.7% indicating that they would eat produce from ecosan, 78.1% indicated that they are willingly to use human excreta as a crop nutrient

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