

# Use of Human Excreta in Agriculture

farmers practices and their perception  
of health risks

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# Introduction

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- ❑ Applying human excreta to agricultural fields has been a long time ago in VN.
- ❑ Despite the potential health risk, the practice is still wide spread.
- ❑ 85% farming households had used latrine wastes as fertilizer (Phuc et al. 2005)
- ❑ In agriculture: Human excreta are
  - It is cheap fertilizers
  - Good for soil structures
  - Reduced imported chemical fertilizers
  - Nutrition recycling in different types of integrated farming systems

# Objectives

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- ❑ To describe the current use and handling of human excreta as fertilizer
- ❑ The farmers' perceptions of health risks and hygiene related to the use of latrine waste as fertilizer
- ❑ The study findings are discussed in relation to the new guidelines for use of human excreta in agriculture.

# Methodology

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- ❑ Study areas: 5 communes in Nghe an
- ❑ Total 471 hhs were selected
- ❑ The Respondents: head of hhs or adult people
- ❑ Key persons: Communal people's committee, women's union, farmer's association and health station.



# Methodology

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- ❑ Questionnaires
- ❑ Participate observations
- ❑ Key informant interviews
- ❑ Focus group discussions
- ❑ In-depth interviews



# Findings

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1. Latrine types
2. Farmer's practices
3. Annual frequency
4. Farmer's perception



# Latrine types

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- ❑ 56% hhs used a Double vault Composting (DVC),
- ❑ 35% hhs used a Single Vault (SV),
- ❑ 5% used a temporary (shallow hole/pit),
- ❑ 4% used a septic tank/pour flush.



# Farmer's practices

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- ❑ 92% hhs used of Human excreta (HE) as fertilizer
- ❑ 94% hhs compost HE before used
- ❑ 50% hhs storage HE inside the latrine
- ❑ 8% hhs storage HE both inside and outside the latrine
- ❑ 38% hhs storage HE outside the latrine



# Farmer's practices

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- ❑ All 471 hhs put kitchen ash into the latrine vault after each defecation.
- ❑ 63% hhs added lime to the latrine
  - 24% after each visit,
  - 45% weekly,
  - 31% monthly or less frequently
- ❑ 99% hhs composting HE outside the latrine added kitchen ash, and 55% hhs added also lime,



# Human excreta used for annual crop of the year

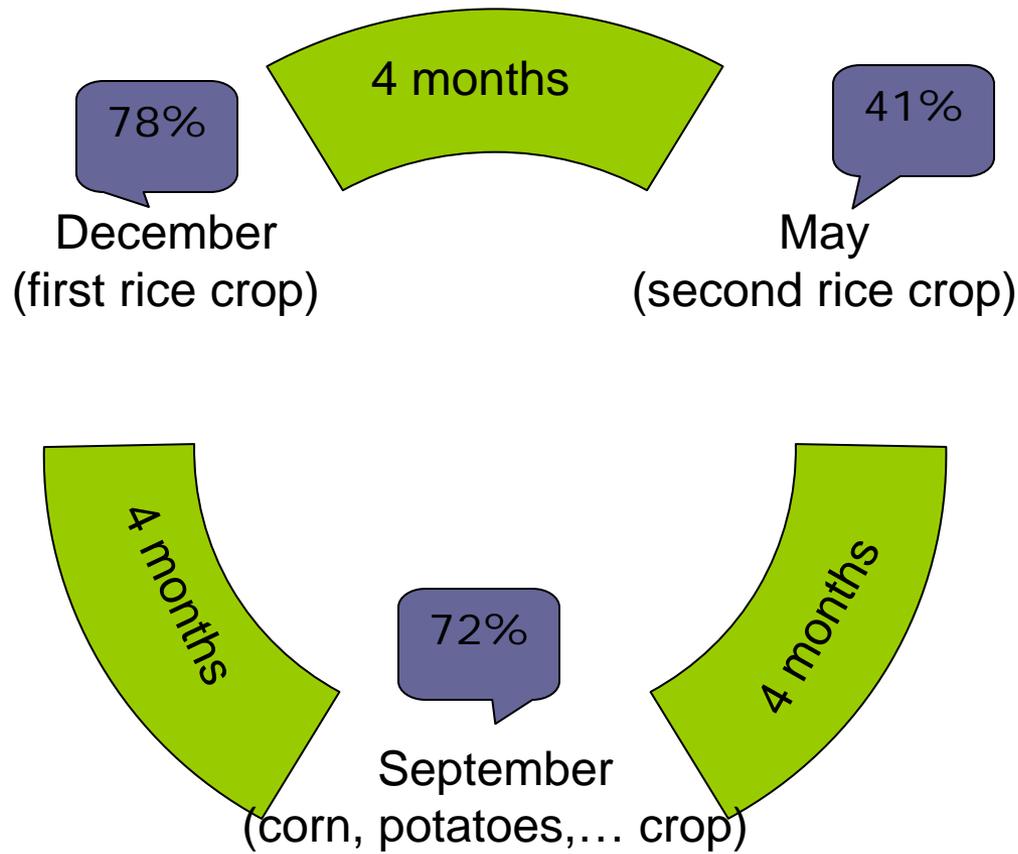
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- ❑ 78% hhs applied composted HE for rice is first crop (December-January)
- ❑ 41% hhs applied composted HE for rice is second crop (May-June)
- ❑ 72% hhs applied composted HE for corn, potatoes are third crop (August-September)



# Annual frequency of human excreta application on crops

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## Annual frequency of human excreta application on crops

Human excreta used as fertilizer for	Number of hhs	Percentages
Only first crop in January	35	7%
Only second crop in June	3	0.6%
Only third crop in September	74	16%
Both first and second crop (January and June)	80	17%
Both first and third crop (January and September)	156	33%
Both second and third crop in June and September	21	5%
All 3 crops	90	19%
At least 1 crop per year	459	98%
At least 2 crops per year	347	74%
Only 2 crops per year	257	57%

# Farmer's perception

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- Composting done to achieve hygienic product and improve fertilizer product but depends upon type of latrine available
- Human excreta regarded the "dirtiest" fertilizer due to bad smell but praised for its nutritious values
- Human excreta and chemical fertilizer compared to eastern and western medicine



# Farmer's perception

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- Perceived risk clearly associated with smell, secondly texture, thirdly color
- Protective practices given minimal attention and then only when handling excreta with smell
- Other peoples waste and smell from others excreta regarded a health risk



# Protecting the “inside”

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- Nghe An-farmers - sometimes wear mask and boots when handling fresh excreta
- In the fields few wear any protection since excreta does not smell
- Women used more protective measures but seen as reducing work output
- Women seen as more vulnerable



# Summary

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- ❑ 74% hhs at least once per year will have only 3-4 months available for composting excreta
- ❑ They not meet the new Vietnamese guidelines
- ❑ Kitchen ash or lime are moisture absorption
- ❑ Health risk perception associated with smell
- ❑ Diseases enters through mouth or nose
- ❑ Unpractical protective measures
- ❑ Cleanliness is about clean appearance/visible dirt
- ❑ Production given first priority above hygiene
- ❑ Organic waste seen as valubal input to production
- ❑ Large degree of gender difference in exposure and use of protective measures



# Recommendations

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- ❑ Change latrine type to a non-reuse system;
- ❑ Only use human excreta as fertilizer for every second crop or only once per year,
- ❑ Use additives that increase pH to obtain a more rapid pathogen die-off inside the vault.

# Acknowledgement

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Thank you for your attention

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