

# WHO Guidelines for the Safe Use of Excreta and Greywater. (Planned 2005).

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World Health Organization

With support from Sida, Norad, GTZ, Dutch  
Government

# Why Guidelines on Excreta and Greywater?

- WHO will issue a series of guidelines (GL) based on an update of the health GL from 1989 with different focus on wastewater and excreta reuse.
- The focus differs and WHO recognise the Issue of source-separation as a special and valid approach.

# Safe Use of Excreta

## WHO Philosophy

Guidelines are:

- **Based on scientific consensus and best available evidence,**
- **Based on a risk/benefit approach developed around good practices and a multiple-barrier approach**
- **Meant to be adapted to local social, economic, and environmental factors**
- **The Guidelines strive to maximize overall public health benefits and the beneficial use of scarce resources**



## **Key Issues :**

# **Safe Use of Excreta and Greywater**

## **Better Methodologies for Evaluating Risk**

Previous guidelines were based on actual risks using epidemiological evidence

Updated guidelines will use all available evidence including Quantitative Microbial Risk Assessment

Data on new pathogens will be used to develop health targets



# Guidelines for safe use of excreta and greywater

- Guidelines household centered
- Resource reuse (optional)
- Based on practical/technical evidences with multiple barriers.
- Exposure assessment – key issue
- User perceptions:
  1. Limit smell and flies
  2. Cleaner surrounding
  3. Privacy
  4. less gastrointestinal disease

# Treatment as a barrier – reduction efficiency.

*Effects of sewage sludge treatment on pathogens expressed as  $\log_{10}$ -reduction (from US EPA 1999).*

PSRP Treatment	Bacteria	Viruses	Parasites (protozoa & helminthes)
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Anaerobic Digest.	0.5-4	0.5-2	0.5
Aerobic Digest.	0.5-4	0.5-2	0.5
Composting	2-4	2-4	2-4
Air Drying	0.5-4	0.5-4	0.5-4
Lime stabilization	0.5-4	4	0.5

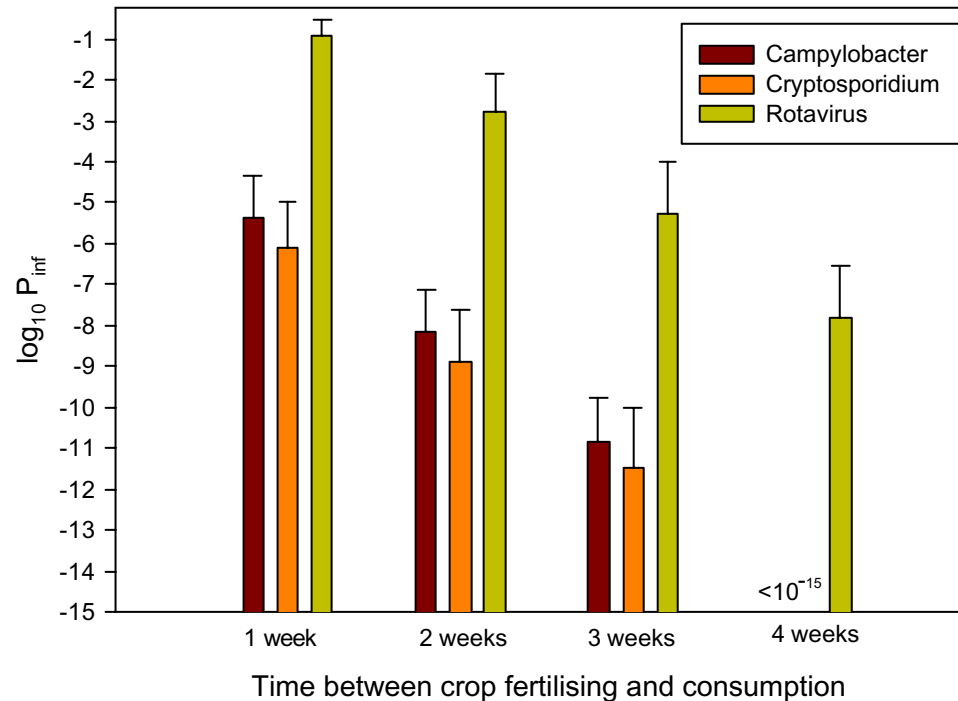
2/25/2005

# Treatment as a barrier – reduction efficiency.

*Reduction in dry latrines, storage time 6 months, pH value around 9 or more. Based on added organisms, at time 0. Reduction given as  $\log_{10}$  values.*

Parameters	Reduction efficiency	Remark
Bacteria (coliforms)	> 6 log	Chinese exp
Bacteria (fecal enterococci)	4-6 log	Extrapolations/Mexico
Bacteriophages (index virus)	5->6 log	Chinese exp Vietnamese exp Mexican extrapol
Ascaris ova (index parasite)	100% reduction of viability	Vietnamese exp Chinese exp <sub>7</sub>

## Risk from ingestion of 100 g crop



- Inactivation will continue in the field
- Risk dependent on time between fertilising and consumption

# WHO Guidelines for the safe use of excreta and grey water.

Core and Support Team (Currently drafting).

- Regional consultations.
- Individual and Organizational inputs.

## CONTENT:

- *Introduction* (incl. objectives, targets, scope, links to MDGs)
- *Background* (population, EIA, GBD, Risk Framework)
- *Excreta & GW as resources* (value, different uses, contaminants, urban agriculture, **Valid examples**)
- *Public Health Aspects* (organisms, epidemiological evidences, health hazards/risk identification, exposure, health effects, comparative assessment - wastewater)
- *Sociocultural aspects* (convenience, aesthetics, collection, application, culture, economics, legal, scale aspects)

# WHO Guidelines for the safe use of excreta and grey water.

## CONTENT (cont.).

- *Environmental Aspects.*
- *Treatments and technical options.* (Collection, storage and treatment options; urine, feces, greywater /separate and in combinations/, use in agriculture and horticulture).
- *Health Risks and Impact Assessment.*
- *Targets and Health Protection.* (incl barriers, quality aspects, guideline values)
- *Planning and Implementation /Risk Management/.* (practises, planning, implementation, surveillance .....

# WHO Guidelines for the safe use of excreta and grey water. TIMELINE

- 2004. Background Preparation
- Aug . Preparatory Meeting
- Jan 05. Draft version for consultations and inputs.
- Feb-April Consultations and external inputs
- April/May Official consultation Geneva
- May – Sept Revisions/Editing
- End of 2005 Publishing

# Input

- Consultations and regional input an essential part for balanced Guidelines
  - Regional case studies
  - Acceptability and constraints (not anecdotal)
  - Epidemiological evidences/Risk Impact Studies
  - Comparative assessments WW/Manure
  - System analysis of risks and benefits
  - Assessment of acceptability and behaviour in different settings/regions

# WHO Guidelines for the safe use of excreta and grey water. AIMS for the future

- The guidelines a starting point for:
- Country-based system studies including risk/epi based approaches. (2005-2008)
- Comparative assessments with uses of WW/others
- Follow-up and implementation studies of WHO Guidelines site- or country based (2006-2008)