Individuals’ Perception & the Potential of Urine in Agriculture in eThekwini, South Africa.

By

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Outline

1. Background
   - Need For Sanitation
   - Advantages of Urine in Agriculture

2. Aim & Objectives

3. Research Areas
   - Umbumbulu & NMPLC (Ntuzuma & Inanda)

4. Results
   - Farmers & Key Informants
Sanitation Situation - Internationally & Locally

• 2.5 billion people without adequate sanitation (2010 est.).
• 18 million S. Africans don’t have adequate sanitation (2004 est.)
• Municipal backlog of 175000 (2002 est.).
• 75000+ UDDT installed (2011 est.)
• Cholera outbreak - 1.8 million at risk, 4000+ cases, 22 died.
Advantages of Urine in Agriculture

• Urine contains approx. NPK 11:1:2

• Burkina Faso population excretes 125 million USD worth of fertiliser yearly (EcoSan can reduce 20% of P mined).

• (P) is a non-renewable resource, 2030 ‘Peak Phosphorus’.

• 2007 to 2008, phosphate prices increased up to 700%

• Inequality among farmers. EcoSan everyone has = access.
Aim & Objectives of Research

**The aim:** understand the perceptions & knowledge of farmers & key informants about urine in general & in agriculture. To determine if this practice is socially acceptable for food security.

**Objectives:**
* Farmers’ perceptions of urine & its potential use for fertilising crops.
* Farmers’ knowledge of urine as a fertiliser & its potential impact on their crops.
* The perceptions & knowledge of urine as a fertiliser, of the key informants who transmit agricultural knowledge to farmers.
* Possibility of incorporating urine as a fertiliser into the training programmes and among farmers.
Umbumbulu Agri-Hub

(Umbumbulu Agri-Hub; Seedlings; Part of Mr.M. farm)

A public-private partnership. Started in September 2010 by the Newlands Mashu Community Development Foundation for the eThekwini municipality.

*Aims to support small-scale growers through permaculture principles.*
Newlands Mashu Permaculture Learning Centre (NMPLC) by the eThekewini Municipality Agroecology Programme.

* Aims to support, appropriate & sustainable agroecology principles among farmers in eThekewini.

The farmers were interviewed from coop gardens in Ntuzuma & Inada townships.
**Participants Demographics**

<table>
<thead>
<tr>
<th>Pseudonyme</th>
<th>Organisation</th>
<th>Age</th>
<th>Sex</th>
<th>Educational Background</th>
<th>Years or Experience as a farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr.G</td>
<td>Umbumbulu</td>
<td>70</td>
<td>M</td>
<td>Standard 9</td>
<td>9 years, no training</td>
</tr>
<tr>
<td>Ms.S</td>
<td>Umbumbulu</td>
<td>73</td>
<td>F</td>
<td>Teaching - University</td>
<td>46 years, training from nuns in Marian Hill</td>
</tr>
<tr>
<td>Mr.Z</td>
<td>Umbumbulu</td>
<td>61</td>
<td>M</td>
<td>Standard 9</td>
<td>Since he was born, training from mother &amp; now the Agri-Hub</td>
</tr>
<tr>
<td>Mr.L</td>
<td>Umbumbulu</td>
<td>74</td>
<td>M</td>
<td>College</td>
<td>Gardening in primary (1949) &amp; parents were farmers</td>
</tr>
<tr>
<td>Mr.M</td>
<td>Umbumbulu</td>
<td>30</td>
<td>M</td>
<td>National Diploma in Agriculture</td>
<td>Since he was young, his parents were farmers</td>
</tr>
<tr>
<td>Mr.C</td>
<td>NMPLC</td>
<td>57</td>
<td>M</td>
<td>Standard 6</td>
<td>Learnt gardening skills in primary school</td>
</tr>
<tr>
<td>Mr.I</td>
<td>NMPLC</td>
<td>59</td>
<td>M</td>
<td>Standard 9</td>
<td>Since he was young parents were farmers</td>
</tr>
<tr>
<td>Ms.T</td>
<td>NMPLC</td>
<td>36</td>
<td>F</td>
<td>Standard 5</td>
<td>Since she was young parents were farmers</td>
</tr>
<tr>
<td>Mr.Gw</td>
<td>NMPLC</td>
<td>45</td>
<td>M</td>
<td>Standard 8 but not finished</td>
<td>10 years &amp; lots of training in permaculture</td>
</tr>
<tr>
<td>Ms.B</td>
<td>NMPLC</td>
<td>42</td>
<td>F</td>
<td>Grade 12</td>
<td>7 years, gardens at home &amp; training from Dept. of Agriculture</td>
</tr>
<tr>
<td>Ms.Z</td>
<td>NMPLC</td>
<td>52</td>
<td>F</td>
<td>Standard 9 &amp; finishing Standard 10</td>
<td>Since she was young, her parents were farmers</td>
</tr>
<tr>
<td>Ms.M</td>
<td>NMPLC</td>
<td>26</td>
<td>F</td>
<td>Matric &amp; 1 year computer certificate</td>
<td>Gardening training at the library &amp; gardens at home.</td>
</tr>
</tbody>
</table>

*South African Schooling System: Standard 6 is Grade 8*
### Results – Traditional Uses of Urine

<table>
<thead>
<tr>
<th>Urine in Tradition:</th>
<th>Urine Uses (Informants):</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Protection (Evil spirits)</td>
<td>- Gangrene</td>
</tr>
<tr>
<td>- Takes away medicinal properties of plants</td>
<td>- Drink if no access to water</td>
</tr>
<tr>
<td>- Bring bad luck</td>
<td>- Get rid of bad dreams</td>
</tr>
<tr>
<td>- Get rid of bad dreams</td>
<td>- Neutralises bad spirits</td>
</tr>
<tr>
<td>- Keep a partner close to you</td>
<td>- Flu</td>
</tr>
<tr>
<td>- Prevent partner from cheating</td>
<td>- Detoxify</td>
</tr>
<tr>
<td>- Neutralise poison</td>
<td>- Neutralise poison</td>
</tr>
<tr>
<td>- Pink eye</td>
<td>- Pink eye</td>
</tr>
<tr>
<td>- Stomach ailments</td>
<td></td>
</tr>
</tbody>
</table>
Results – Awareness of Urine in Agriculture

Awareness - Farmers:

• 2 Pessimists
• 1 Aware Benefits
• 2 used pit content
• 3 knew of “Prison Potatoes”
• 4 Did not know

Awareness Informants:

• All aware of benefits.
• Not aware of specifics.
• Not using urine nor promoting the idea.
• NMPLC – Sludge
• Umbumbulu - Struvite?
Municipal Sludge
Results – Worries concerning urine reuse

Worries:
- Consumer perception
- Community perception of farmers
- Don’t tell…
- Pathogens & Hormones
  - Smell
  - Quality of the urine (alcohol)
    * Menstrual blood (+Women vs. -Men)
    * Racism
The Way Forward

- Start Slow
  - Demonstrations
    - Education
      - Training
        - Workshops
          - Youth
  * Need for fertiliser?!
Thank you for your patience
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