

**Selection of synthetic sludge simulant for the Bill and  
Melinda  
Gates Foundation's Reinvent the Toilet Fair: India  
2014**

**Pollution Research Group, University of KwaZulu-Natal, South  
Africa**

Proposed simulant recipe

<b>Recipe 9 FINAL SYNTHETIC SLUDGE RECIPE</b>					
<b><i>Ingredients</i></b>	<b><i>% Wet Mass</i></b>	<b><i>Mass for 1 kg</i></b>	<b><i>Mass for 500g</i></b>	<b><i>Mass for 250g</i></b>	<b><i>% Dry Mass</i></b>
Instant yeast	7.3	72.80	36.40	18.20	32.49
Water	77.6	776.10	388.05	194.03	
Psyllium	2.4	24.30	12.15	6.08	10.84
Peanut oil	3.9	38.80	19.40	9.70	17.31
Miso	2.4	24.30	12.15	6.08	10.84
PEG	2.7	27.20	12.15	6.08	12.14
Inorganic Calcium phosphate	2.4	24.30	12.15	6.08	10.84
Cellulose half cotton linters/ half tissue - shredded	1.2	12.40	6.20	3.10	5.53
Total Mass	100.0	1000.20	500.10	250.05	100.00

Photos of synthetic sludge

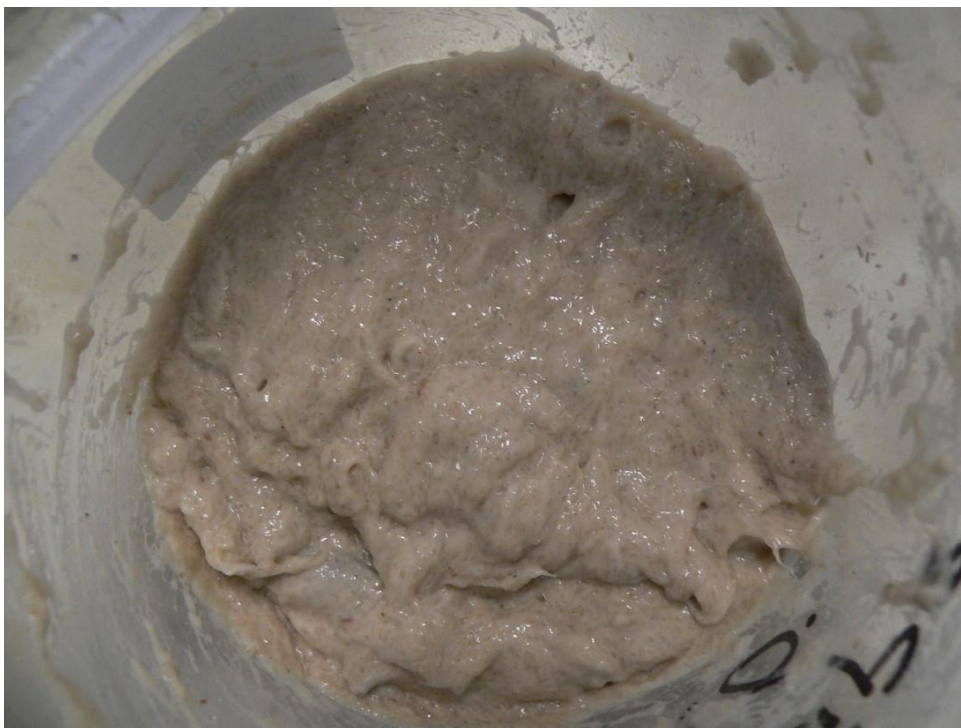
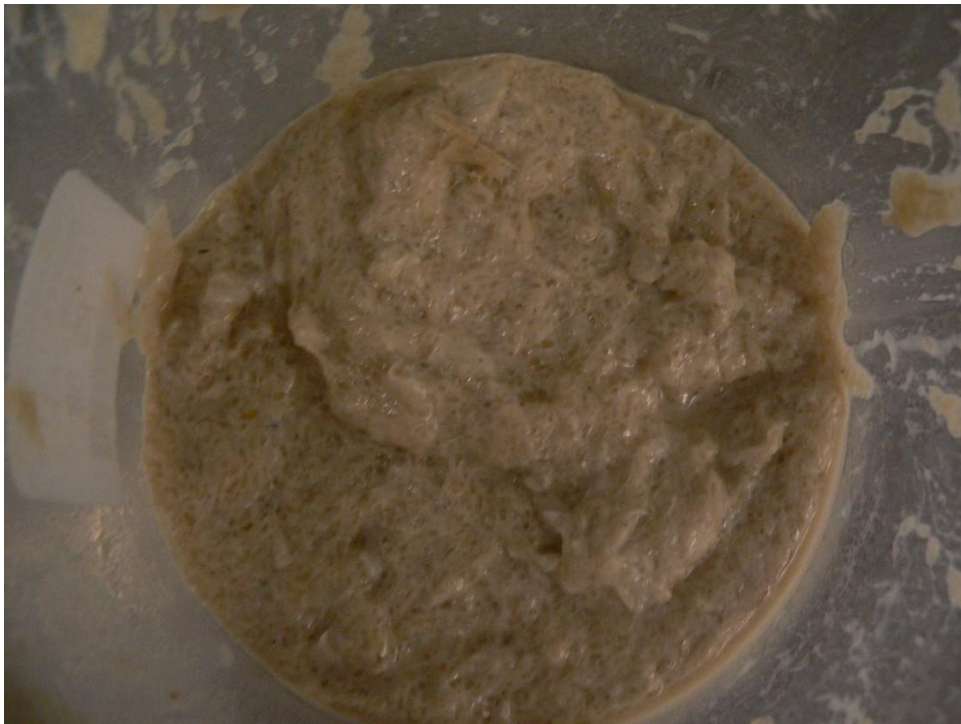


Figure 17. Synthetic sludge 9 (SS9)



Figure 18. Synthetic sludge 10 (SS10)

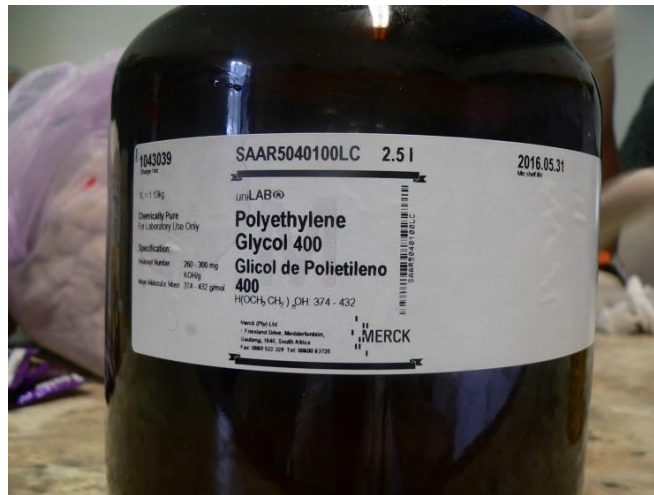
Appendix 3: List of ingredients

<p>Instant yeast</p>	 Three packets of Anchor Instant Yeast are shown side-by-side. Each packet is purple and features the brand name 'Anchor Instant Yeast' at the top. Below the name is an image of various baked goods like bread, rolls, and pastries. At the bottom of each packet, there is a circular logo that says 'FOR A FASTER SOFTER BAKE'.
<p>Psyllium</p>	 A clear plastic bag of Psyllium Husk is shown. The bag is filled with a light-colored, powdery substance. A white label is attached to the front of the bag. The label has a logo at the top that says 'Anchor' and 'PSYLLIUM HUSK' in large letters. Below that, it says 'PSYLLIUM HUSK 100G'. There is a barcode and the number '2 100000 9264 35'. At the bottom of the label, it says 'PACK DATE 18/09/2013' and 'R 22.99'.
<p>Peanut oil</p>	 A clear plastic bottle of Peanut Oil is shown. The bottle is filled with a yellowish liquid. A white label is attached to the front of the bottle. The label has a logo at the top that says 'Anchor' and 'PEANUT OIL (PURE)' in large letters. Below that, it says 'PEANUT OIL (PURE) 150ML'. There is a barcode and the number '2 100000 9264 35'. At the bottom of the label, it says 'PACK DATE 20/09/2013' and 'R 44.99'.

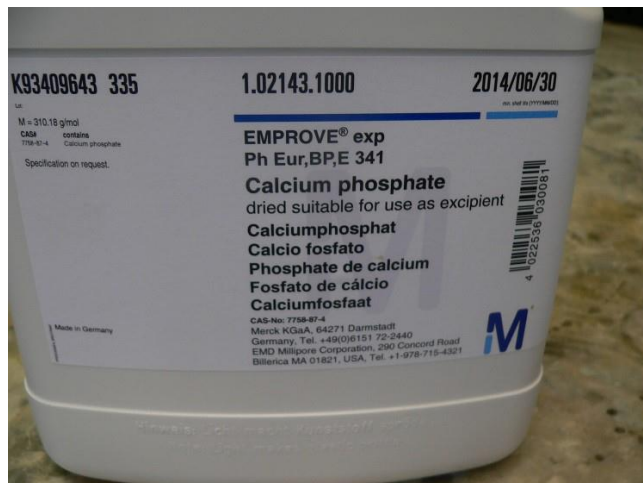
Miso paste



PEG



Inorganic Calcium phosphate



Cellulose – cotton linters from:  
Dano Textile Industries (Pty) Ltd, 1  
Anderson Rd, Box 12, Hammarsdale,  
3700, KZN, South Africa.  
Phone: +27 31 736 7600 Fax: +27 31 736  
7762

Paper – normal paper tissue



