

Hedonistic Sustainability: Excrement Explosives

The Details

1. Technology used in our design:

- a. Self-contained biodigester used to convert on-site inputs (urine from composting toilets, green waste from crops or other homogenous sources, wood ash) into potassium nitrate for use in fireworks & explosives or as a fertilizer & soil amendment and methane for cooking & burning
- b. Specific biodigester technology to be determined/developed by our team of civil and environmental engineers based on the site-specific conditions of available on-site inputs

2. List of activities our design would support:

- a. Fireworks and explosives
- b. Crop fertilization
- c. Fuel for cooking and burning

3. List of system inputs:

- a. Urine from composting toilets
- b. Green waste from crops or other homogenous sources
- c. Wood ash from wood burning activities

4. List of system outputs:

- a. Potassium nitrate for use in fireworks and explosives or as a fertilizer and soil amendment
- b. Methane gas for use as a fuel in cooking, heating, and/or artistic expression

5. List of the primary materials used in our design and major dimensions:

- a. Steel and other metals, plastic and other polymers, PVC, and plexiglas or similar for viewports
- b. Approximately 10' x 10' x 15' tall

6. Order-of-magnitude conceptual cost estimate:

- a. Prototype: \$25,000
- b. Scaled-production: \$250,000

7. A short summary of our strategy for on-site prototype development:

- a. Prototype the biodigester to determine/develop the specific biodigester technology needed to convert urine waste from a handful of composting toilets available on-site to create enough cooking gas (methane) and fireworks/explosives (potassium nitrate) to power a small Burn event

8. Environmental impact summary:

- a. Physical impacts to the location where the biodigester is placed; preferably close to the composting toilets
- b. If a component of the biodigester were to be damaged, care would need to be taken to contain the urine and/or methane - a containment system would be developed to complement the biodigester