



WPI

Working Waste

The overuse of synthetic fertilizers on WPI's landscapes is destroying soil health

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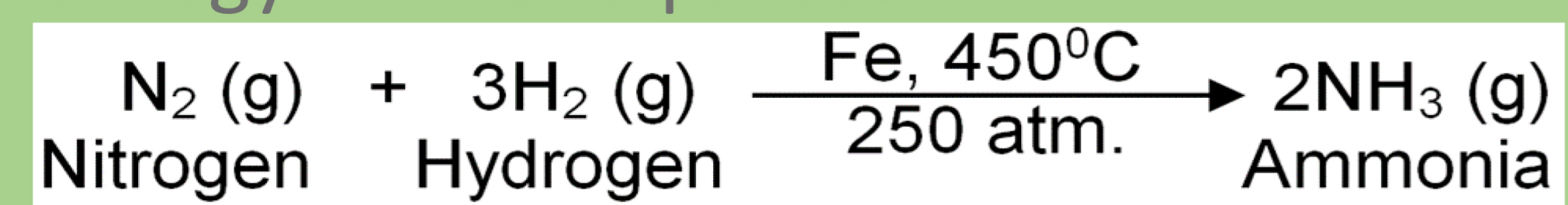


Problems

Synthetic Fertilizers

Both the creation and the overuse of nitrogen-based fertilizers impact the environment:

-Production of synthetic fertilizer is a significant contributor to climate change, because of enormous amount of energy that is required.



Nutrient leeching from overuse of synthetic fertilizer causes dangerous algae blooms to be formed in neighboring waterways

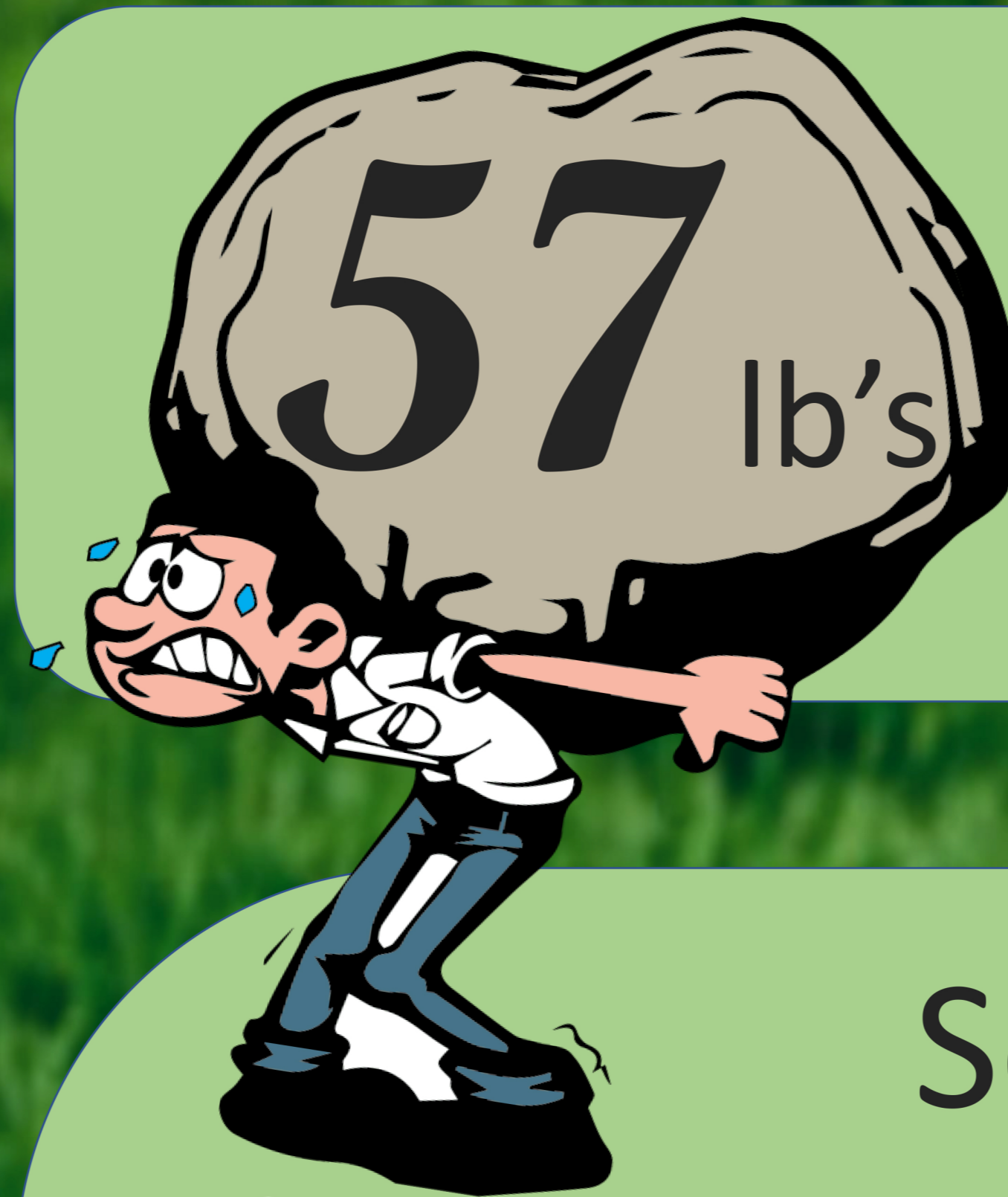
Food Waste

A lot of usable food is put into landfills instead of being used in a positive way to help the world

Ugly yet still usable food is just tossed away and sent off to rot in landfills



Food decomposed in uncontrolled ways releases various greenhouse gases into the atmosphere

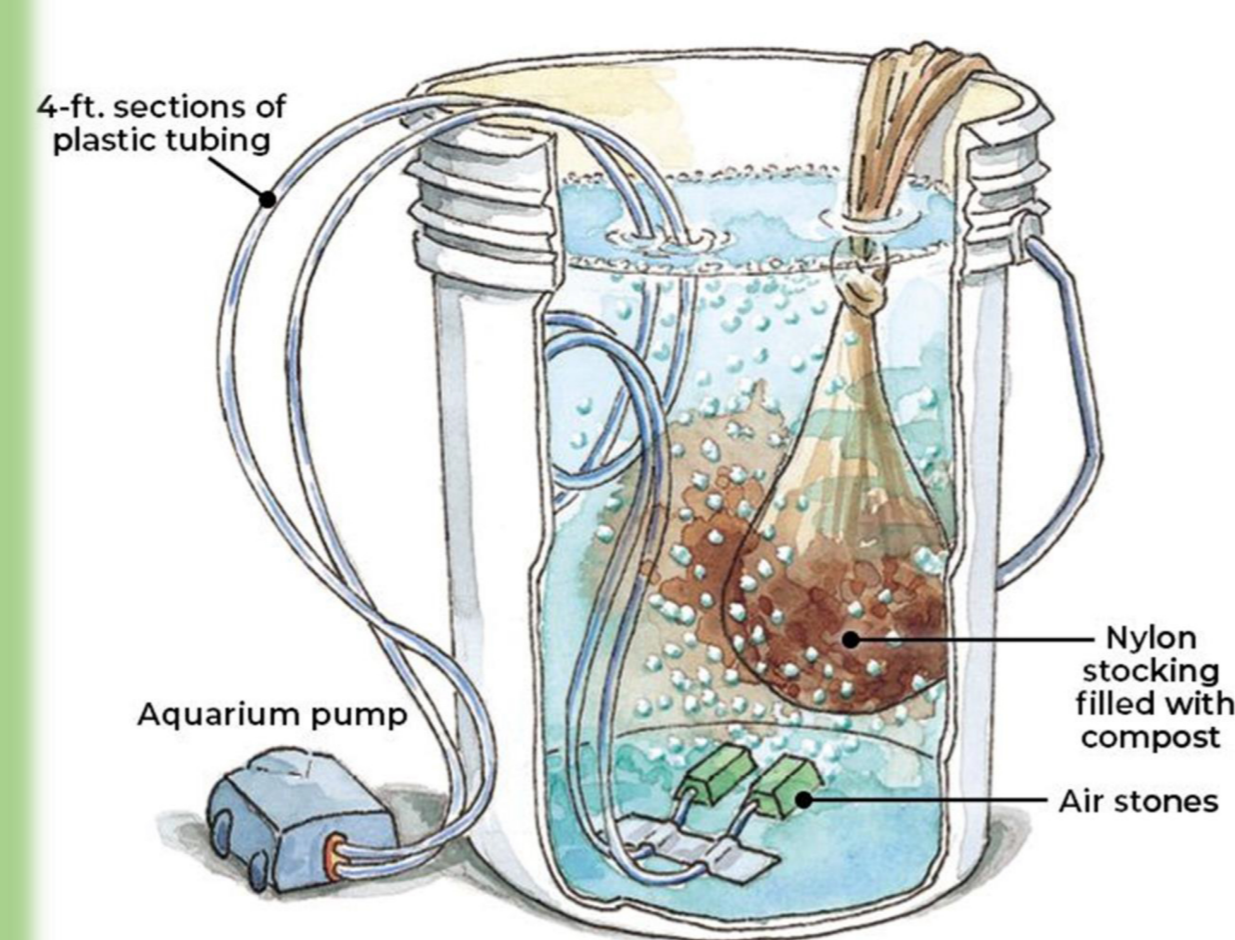


of food are wasted each meal at Morgan

Solution

Compost tea – This consists of the fermentation process in which compost is brewed in water with a constant temperature and a defined period in which microorganisms transform insoluble nutrients into soluble ones that promote the growth of organisms in the tea.

BREWING COMPOST TEA



Why compost tea?

The compost tea method is a relatively quick and cost-effective process. It benefits the plant and soil health while being easy to apply. As an alternative to synthetic fertilizers, compost tea offers more benefits while reducing waste with the possibility of being a profitable business venture.

Methodology

1. Acquire an aerating unit (an aquarium pump will do), and attach the unit to the bottom of a bucket
2. Fill the same bucket with water, where the compost tea will be prepared, and add charcoal to extract the macronutrients
3. Submerge a porous pouch filled with food waste compost/composting material
4. Let the bucket sit for 18 to 72 hours, in a controlled temperature setting between 15°C to 25°C. The closer to 25°C the less harmful bacteria remain
5. Remove the solid material and filter the compost tea so only the liquid remains. This will be the final product used to fertilize the WPI landscapes.

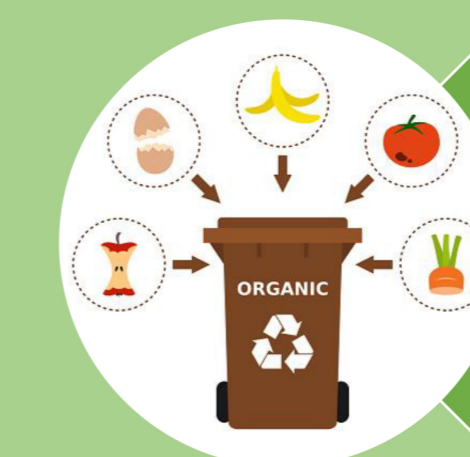
Implementation



Work with WPI to secure a space to create large amounts of compost tea



Work with WPI to figure out how we can implement volunteer student labor into running the project



Work with Chartwells to have them separate meat from vegetable waste

Assessment



Monitor the grass and soil health through lab tests.

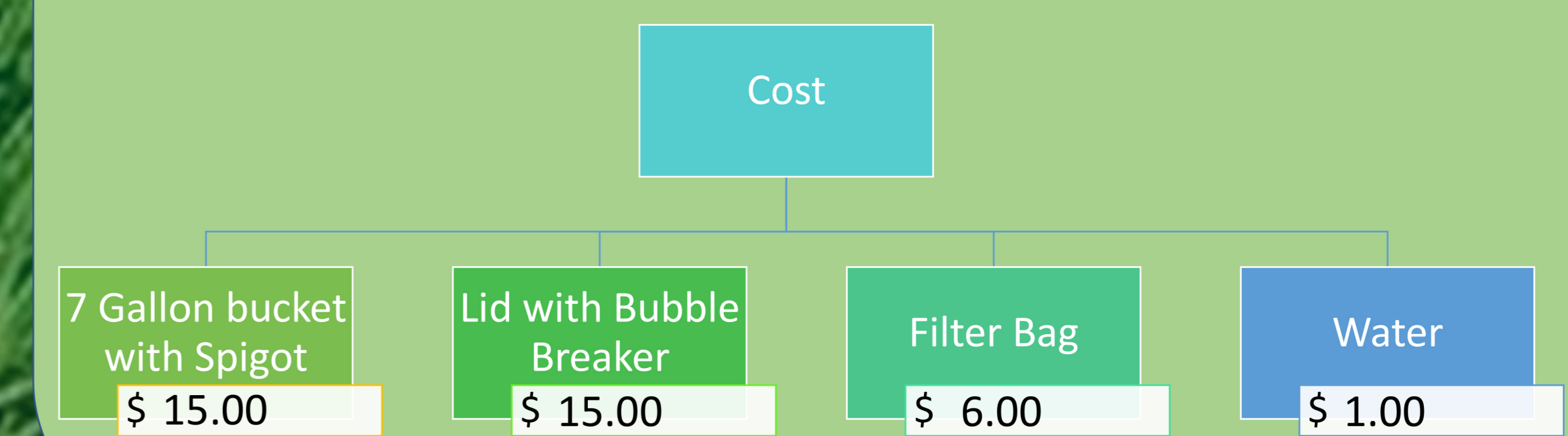


Monitor the rates of food waste created

Estimated Cost per unit: **\$37**

For each 7 Gallon System

Cost of food waste not included



References

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