

# Ocean Pollution and Our Solution



By: Timmy Harris, Ben Drogin, and Ashok Sundararaman

# Ocean Pollution

- Oil Spills
- Dumping
- Sewage
- Lack of Recycling
  - 2013= 269,000 tons of plastic
  - Over 4.5 trillion cigarette butts littered in world



# Animals Affected

- Oil spill causes oil to get into gills and feathers
- Oil spill blocks sunlight from coming into ocean
- Depletes oxygen in ocean



Our form of ocean  
pollution is...

# Fertilizer Runoff

- Nitrogen and harmful pollutants
  - Harmful for marine animals

But we are focusing on...



# Algae Blooms

- Nitrogen fertilizer runs off into the ocean
- Eutrophication, depletes the water's oxygen, suffocating other sea life
- Consuming shellfish containing toxins made by these algae, causes breathing problems and asthma



## How are we planning on fixing this?

- We are planning on adding hydrated lime into fertilizer to prevent algae blooms. It is a colorless crystal that is made when calcium oxide is mixed.

# What is hydrated lime?

- Calcium hydroxide is an inorganic compound. It is a colorless crystal or white powder and is obtained when calcium oxide (called *lime* or *quicklime*) is mixed, or slaked with water. Calcium hydroxide is used in many applications, including food preparation.



# How the fertilizer works

- Since hydrated lime is proven to kill algae, (<http://forums.pondboss.com/ubbthreads.php?ubb=showflat&Number=35414>) we can add this into pre-made bottles of fertilizer
- The nitrogen will still help the plants grow, and hydrated lime will counteract the growth from the nitrogen
- The hydrated lime raises the PH level quickly too high for the algae
- We will add 18 ml to each 36 ml bottle

# Our Product



# How much will this cost?

- Hydrated lime costs \$9.49 per 50 lb bag
- 1 Pound = 473.17 ml
- One of our 50 lb bags can fill about 1,314 bottles for less than \$10

**WARNING: USE SMALL PORTIONS BECAUSE LARGE PORTIONS WILL KILL FISH**

Fertilizer:

<https://www.amazon.com/KL-Design-Bottles-Bamboo-Fertilizer/dp/B0030FETG8>

Hydrated Lime:

<https://www.amazon.com/KL-Design-Bottles-Bamboo-Fertilizer/dp/B0030FETG8>



## Benefits to the world

Kills algae blooms which produce negative impacts to other organisms by making natural toxins, and mechanical damage to other organisms. They can kill marine animals and have been associated with various shellfish poisoning.

# Detriments



# JH Biotech Inc *(Innovation for a Greener Earth)*

Special thanks to our mentor who has helped us through this project by providing us with very useful help!

JH Biotech Inc:

- One of the world's leaders in crop nutrition, agricultural research and product development



# How are we going to spread our idea?

- We already have support from JH Biotech Inc
- Word of mouth (advertising)
- Go on Shark Tank!







# Bibliography

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