# Aquaponics: The Solution to Hungry High School Students

## Abstract:

There are many different sizes of aquaponics systems that produce and function differently. Can one be made to fit a high school's need? If so, how much will the system produce in food? With more and more students not eating healthy it would be in a great interest for a school to have an aquaponics system that they could grow fresh and healthy fruits and vegetables, and also fresh fish or even a new decoration.

## Introduction:

With an aquaponics system in a school setting how much food will the system generate? I believe that with an aquaponics system a school would be able to generate enough vegetables, and fish to feed an entire school. In addition, the system could be used for new biology studies in schools.

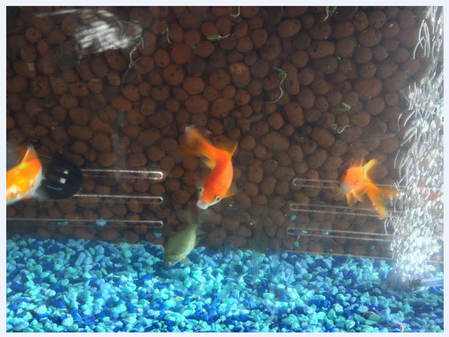
## Method:

With the results of a research article I will convert the values to a more compact design to fit a smaller school environment area that is approximately 3m by 6m. With the values of the research we will be able to convert the values using their data. Their data states that for every cubed meter it will produce about 80kg of fish and for every square foot of grow bed it will produce 56 heads of lettuce every month.

| | Previously Recorded Data | Possible Indoor School Aquaponics System |
|---|---|---|
| Fish Tank Size | 30 Meters Cubed | 2.535 Meters Cubed |
| Growing Beds | 213 Meters Squared | 18 Meters Squared |
| Water Use | 202884 Gallons Annually | 17076.1 gallons annually |
| Fish Produced Annually | 2400Kg of fish/Year | 202KG of fish/Year |
| Vegetable production (lettuce) | 8,946 heads of lettuce( average of 156g per head) every month | 756 heads of lettuce(average of 156g per head) every month |

Al-Hafedh, Yousef S., Aftab Alam, and Mohamed Salaheldin Beltagi. "Food Production And Water Conservation In A Recirculating Aquaponic System In Saudi Arabia At Different Ratios Of Fish Feed To Plants." Journal of the World Aquaculture Society 39.4 (2008): 510-20. Print.

*Potential Aquaponics Space*

## Conclusion

With the result it would be able generate about 756 heads of lettuce that is equivalent to 3870 cups of lettuce. A well formulated salad uses 2 cup of lettuce. With all this considered it would supply around 63 salads each day, which is about the amount my school would need. The production of fish could would be equal to 162 serving of food. An aquaponics system could be a great way to teach students new subjects and a great source of cheap food.

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