

SAN JUAN NM REGIONAL SCIENCE & ENGINEERING FAIR

JUNIOR AND SENIOR DIVISION

ABSTRACT & CERTIFICATION

TITLE: Aquaponics Vs. Hydroponics

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Grade Level: 8th Grade

Type the Body of Your Abstract Here (250 Word Maximum)

Aquaponics and hydroponics are both ancient farming techniques and can still be used today to decrease water usage in a cycling system. The question is, what type of cycling system will be more beneficial for a beginning plant grower? This project looks at the differences between plant growth and water quality within a small scale aquaponics system and hydroponics system. Observation of plants (color, leaf size, stems), measurements of both plant growth, and water quality (nitrates, nitrites, ammonia, pH) were taken once a week and compared to determine which system was healthiest. My hypothesis was that if romaine lettuce was grown in an aquaponics system and a hydroponics system, then the lettuce grown in the aquaponics system would be healthiest. The experiment results did not support my hypothesis by showing that the plants grown in the aquaponics system contained small stems, they were light green in color, and 4 out of the 6 plants fell over. Also, my data disproved my hypothesis because the nitrate levels were low and inconsistent. The level of nitrates for a healthy system is 40-80 mg/, and on average the aquaponics systems average was 20 mg/L. The pH levels needed for a healthy aquaponics system is 6.4 to 7.4, and the data showed a range in pH level of 7.5-9. The data showed inconsistent measurements which says that the system has many errors that need to be controlled for it to work properly.

1. The student independently performed all procedures as outlined in this abstract Yes No
2. This project is a continuation. Yes No
3. This project is being presented at SJRSEF NMJAS Paper Competition

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Easten Gibbs

2/22/2021

Student's Signature

Date

