

Spring 2020 GridEd Research Report

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Introduction

Work on the Aquaponics Solar Research Project has been limited, due in large part to the COVID-19 pandemic as well as other factors that will be discussed in further detail; the members of the project have been unable to order essential materials, meet on a consistent basis, and begin development on the large-scale version of the aquaponics project. The members of the project have worked thus far on the design, and equipment selection. Also the team have work on evaluating current model of our large-scale aquaponics system with others to obtain better efficiency. Finally, project members have been looking for funding to cover the costs of the larger scale system, which has proven to be more expensive than anticipated.

Accomplishments

The members of the Aquaponics Solar Research Project have thus far accomplished the following:

1. Obtained the following equipment, funding, and information necessary to build the large-scale aquaponics system including controller (1), solar module (1), and batteries selection.
2. Power and energy has been recorded for the aquaponics air compressors. Site shade analysis of has been performed, and site permits have been managed with campus administration.
3. The equipment obtained have been thoroughly tested to ensure their function once used in the large-scale system.

4. Theoretical power data analysis was confirmed by power data logger.

Challenges

The challenges the Aquaponics Solar Research Project has faced include but are not limited to:

1. COVID-19 has reduced the interactions between project members, research advisor, and other key university personnel.
2. Other scholarship stipend granting organizations have limited the availability of funding necessary to buy other necessary materials.
3. Project grounds have been closed off by university personnel, with very little access to project members.
4. Limited communication with the GridEd liaison has restricted the ability to use the grant funds for the large-scale project.

Further Work

The project members recognize that obtaining funds and implementing the prototype on the aquaponic site are important objectives going forward. Establishing better communication with the GridEd liaison is also a priority for the team during the coming semester, in addition to effectively gaining stipends from other proposals is the group's priority. Furthermore, meetings amongst the group members should be scheduled to continue as much work as possible before the funds are received. These meetings will be either in person or via Google Meets, depending on campus administration procedures. Finally, revisiting university grounds is essential to keep the fields prepared for solar module installation.

Expected day of completion

The research team has evaluated to complete the project by December 2020.