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Proposal for Second cycle of **Mobile Aquaponics Workshops**

Current System

Research continues in seeking to reduce the cost and increase mobility of the Mobile Aquaponics systems. In the last grant cycle funded by a grant from the Arizona Foundation, the system included a half cut 55 gal drum, a high volume pump, piping, wick material and control electronics which was about \$150 a unit. The cost for this unit was high thus limiting the number of people to six who were able to participate in our workshops held in Bowie, AZ.

Our overall mission is to primarily show proof of concept to individuals who will then be able to adapt their new found knowledge and experience to larger models as both mobile and permanent aquaponics systems.

We have concluded we can make a smaller system with a single grow tower in meeting the criteria for proof of concept thus increasing the workshop attendees from 6 to 24 for the same cost.

5 Gallon System

To lower the cost and increase the number of units in providing the aquaponics experience throughout Cochise County, a 5 gallon system is in development to serve large numbers of people. These would be considered single individual systems or perhaps for two people if their veggie consumption is moderate. Each unit would provide for growing up to 30 veggie bush plants such as lettuce, kale and spinach with 4-8 vines such as peas and beans.

The proposed system would include a 5 gallon food grade bucket with a single 3'-5' center grow pipe. The grow pipe would be stabilized in the center of the bucket with 2" of gravel around the base and a wire holder at the top of the bucket centering the pipe in the bucket.

The water, nutrient and oxygen requirement would be provided via a small aquarium air pump that would provide a two-fold effect in adding/mixing oxygen with the nutrient water solution while also lifting the solution to the top of the grow pipe to slowly drip down the fiber filled grow pipe to both water plants and provide to them nutrients. Fish can be added to the 5 gallon bucket and with sufficient fish weight, no nutrient would need to be added but only feed the fish with the liquefied poop feeding the plants while filtering the fish water.

We estimate that the smaller system can be provided to attendees for a cost of \$35 a unit plus overhead and workshop costs. With a \$1000 grant, 24 units can be prepared as a kit and offered to the public as a mobile aquaponics grow system through an instructional workshop. Four library sites in Cochise County could be chosen and served in offering 6 units for free to the public per site.

