

Alaska Agriculture Innovation Grant Proposal

Versatile Flower Chiller with Temperature Monitoring System



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Polar Peonies successfully bid on the use of a TEDsbox for the month of July before receiving notice of the Innovation Grant. We took possession of our rented box on June 27 with the intention of using it to store peonies for the next month and asking Don Harmon of Tednologies Inc. to fix any issues we might have with the box before we actually purchased it using the AAIG grant.

The first week we had trouble with the box. The Coolbot technology attached to the air conditioner worked great for the test runs inside a warehouse but once it was in our yard and exposed to the sun, it was unable to hold a steady temperature. The coils iced up and shut the whole thing down and it just was not able to cool fast enough in the heat of mid day.

We put up shade over the box and rigged up a fan inside the box to blow air over the coils. That did keep them from icing up and shutting the air conditioner down but it still was unable to hold temperature. Don came back to Fairbanks to look at our unit and determine why it was not able to hold temperatures. In the process, he damaged the air conditioner and decided the only way to fix that and the leaks around the doors would be to take the unit back to his shop.

Don gave us the use of his LD4 model to replace the Coolbot unit from July 4 to August 8, when we traded units again and were able to continue our experiment in the use of the Coolbot unit. By this time we were done with peony but as per our original plans, we drove the unit to Delta Junction and loaded it up with vegetables.

We took our first trip to Delta on Aug 14. It was a two hour drive down, we took an hour to pick and load vegetables and then two hours to drive back. Then we plugged in the unit to chill things down. We had planned to chill the unit while driving but we ran into a few issues with that right away. First, the air conditioner cannot run while we are driving as air is pushed through the unit as we drive so we devised a cover to keep the outside air from going in while driving. Second, Don replaced the old air conditioner with a much larger unit that used more amperage than the inverter was able to handle. We may have to add a small generator if we cannot find a larger inverter next season.

We took another trip to Delta Junction in September. The unit traveled well, we were able to hold the temperature all the way down to Delta without the air conditioner being hooked up. It warmed up to ambient air temperature when loaded with vegetables but once we got home and hooked back up to power, the air conditioner was turned back on, and the temperature returned to 33 degrees. The unit held temperature for the next two weeks until we turned the unit off for the year.