



UNIVERSITY
of Prince Edward
ISLAND

School of
SUSTAINABLE DESIGN
ENGINEERING



ISLAND ABBEY
FOODS®

Project Status Update

Island Abbey Foods
Gummy Weight Control

March 13, 2020

ENGN 3720

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Presented by: Sara Badr, Connor MacEwen, Stirling MacPherson and Cory Ramsay



Outline

- Status Update
- Design Development
- Test Results
- Verified Requirements
- Next Steps



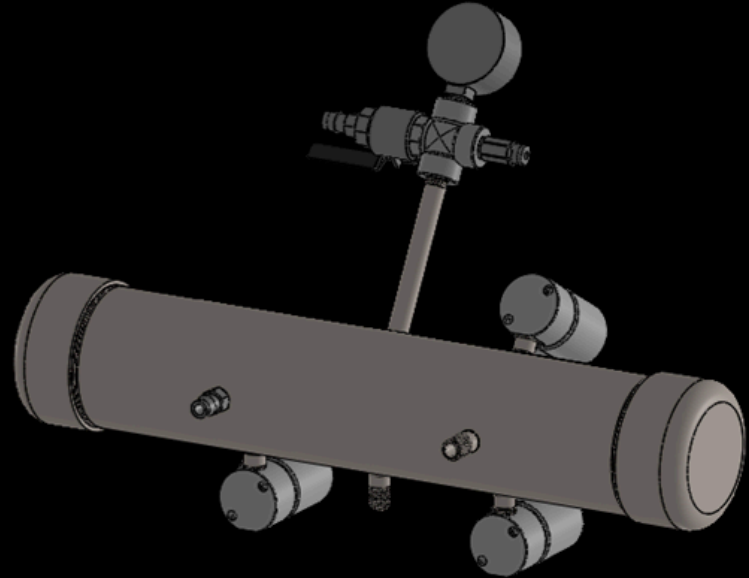
Status Update

- o Design changes
- o Ordered materials
- o Budget: \$2488.52
- o Built prototype
- o Testing



Design Development

- o Pressurized Dispensing
 - o Solenoid valves
 - o Pressure gauge
 - o Pressure release valve
 - o Slurry inlet
 - o Thermocouple
 - o Pressure sensor
- o PLC Valve Control
- o PID Pressure/
Temperature Control





Test Results

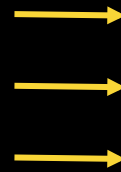
- o Flow Rate
- o Non-continuous Flow
- o Continuous Flow
- o Pressure Required





Verified Requirements

- o Food Safety
- o Consistency
- o Temperature



Inspection
Testing
Testing

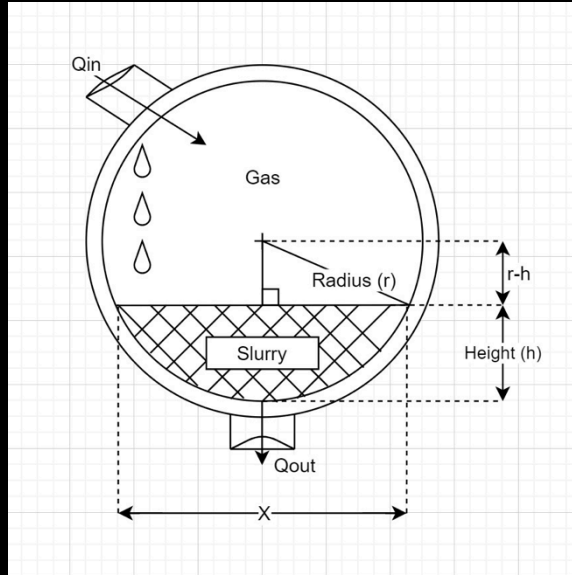


Requirements to be Tested

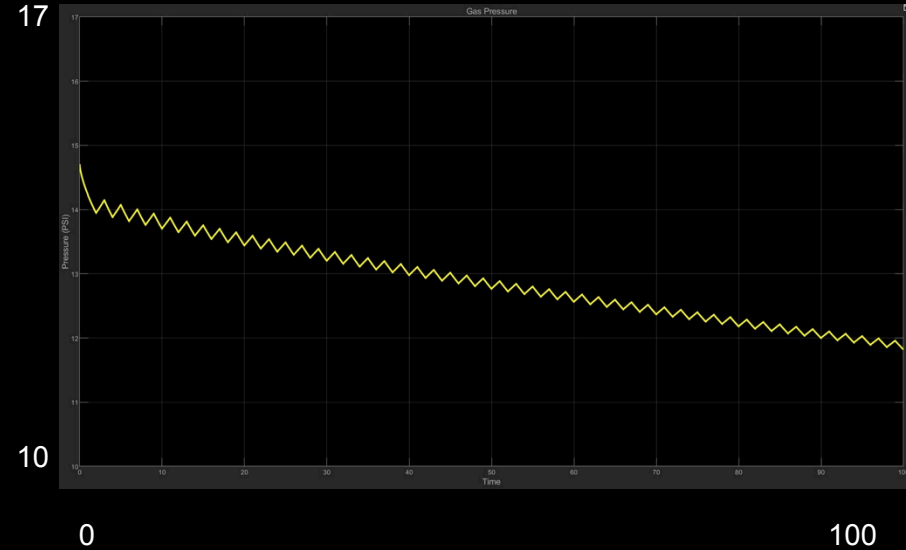
- o Washable → Demonstration
- o Accuracy and precision → Demonstration
- o Variability in formulae → Demonstration
- o Reliability → Demonstration
- o Fit in size constraint → Recommendations
- o *Feedback loop → Recommendations



Recommendations



Gas Pressure (PSI) vs. Time (s)



Fluid Dynamic Scaling - Cost of Scaling - Saving Result - Economic Analysis