LIANNA VAN DER ZALM

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SUMMARY

- Ran over 7 full plant trials and 15 small plant trials in the food and beverage industry working with each department from manufacturing to packaging having to train plant employees of the new procedures
- Experienced with researching market trends, new equipment or ingredients creating reports for the development team outlining the potential new products with specification breakdowns
- Knowledgeable with HACCP and food safety protocols having worked closely with quality assurance teams in multiple positions
- Developed project management skills having been the assistant for three product developers along with running my own projects for plant optimization

RELEVANT WORK EXPERIENCE

Research and Development Technician **September 2019 to December 2019**
Greenhouse Juice – Mississauga, ON

- Aided in the development of three plant-based milks that are now released on the market
- Gained a thorough knowledge of clean-label, organic ingredients and how to utilize them to create a stable product with an over 30-day shelf-life
- Worked with a variety of plant machinery to replicate lab samples including homogenizers and UHT (ultra-high temperature) machines, and analysed a UV system to pasteurize the juice to optimize yield

Research Assistant **May 2019 to August 2019**
University of Hohenheim; Institute of Agricultural Engineering – Stuttgart, Germany

- Assisted with the "B4B Biorefinery for Baden-Württemberg" project creating an on-farm small biorefinery to produce platform chemicals
- Ran over 80 trials to compare different acid solutions, time and temperature parameters, and analyzed the data on excel to optimize two different processes
- Utilized reactors, ovens, microfilters and HPLC gaining hands on experience in laboratory methods

Product Development Technician **January 2018 to August 2018**
Chudleigh's Ltd – Milton, ON

- Aided in the development of private label products from initial formulas to first production for over 10 products
- Assumed an increased responsibility by running 7 full plant trials and over 15 smaller plant trials for new products or modifications without assistance
- Assisted the engineering and procurement departments in designing new machinery and introducing new packaging for optimization of the production lines
- Oversaw training for a new product development technician in how to properly complete tasks and assist product developers as well as trained plant employees on new manufacturing procedures

Horticulture Assistant **May 2017 to August 2017**
Ministry of Agriculture Food and Rural Affairs – Guelph, ON

- Communicated with a wide range of individuals every day explaining government regulations for agriculture goods and gathered required information for the government databases
- Followed a strict protocol requiring attention to detail for collecting samples of produce for microbial and chemical contamination testing to ensure if an issue occurred the sample could be traced accordingly
- Worked under minimal supervision having a set number of samples to be collected within a strict timeline

EDUCATION

Bachelor of Engineering Co-op; Biological Engineering **September 2015 to April 2020**
University of Guelph – Guelph, ON

- Cumulative Average: 82%
- Winner of the Dalia Fayek Memorial Scholarship in Electrical Devices
- Nominated for the 2018 University of Guelph Co-op Student of the Year Award
- Deans Honour List (Fall 2015, Winter 2016, Winter 2017, Fall 2018, Winter 2019, Winter 2020)
- Placed first at the Guelph Engineering Competition (Fall 2019), second at the Ontario Engineering Competition (Winter 2020) and competed at the Canadian Engineering Competition (Winter 2020) in consulting

EXTRA-CURRICULAR

Gryphon Racing (Formula SAE)– Co-Captain, Ergonomic Lead and Marketing Lead **September 2015 to May 2019**

- Managed a team of students to design build and compete a formula-style race car
- Ran meetings, helped finalize designs and monitored costs while organizing the team's outreach programs
- Designed and built a new cockpit each year focusing on safety, ergonomics and weight reduction
- Prepared and presented a sales pitch to executives of a corporation to convince them to invest in the design

DESIGN PROJECTS

Development of a Process to Test the Biodegradability of Products **January 2020 to April 2020**
Biological Engineering Final Design Project

- Using ISO 17088, a biodegradability testing process was developed for bioplastics designed for small lab use
- Designed a machine that uses CO2, temperature, mass flow rate, humidity and VOC sensors to ensure the air conditions were constant and pneumatic shifters and tubing to control the air flow and pressure
- Created electrical schematics, process diagrams and equipment specifications to ensure the validity of the design

Controlled Atmosphere Apple Bin **January 2019 to April 2019**
Engineering Design III

- Designed a controlled atmosphere bin for apples that would be able to monitor and alter the atmospheric conditions of an apple bin for increased longevity
- Authored multiple technical reports to convey design concepts including a proposal, technical memo, cost memo and final report

Integrated Pressure Mapping System for the Prevention of Bed Sores **September 2018 to December 2018**
Bioinstrumentation Design

- Designed and created an integrated pressure mapping system that acts to support nurses by informing them of patients position and lack of movement to prevent bed sores
- Created a working prototype using MATLAB with a functioning real-time display that was demonstrated at a tradeshow

Sonication Assisted Anaerobic Digestion for the Ontario Food Terminal **September 2018 to December 2018**
Bioreactor Design

- Created a theoretical anaerobic digestor to be implemented at the Ontario Food Terminal to increase the utilization of the waste produced from the unsold product
- Created a process flow diagram to specify the required steps for the testing and the environmental specifications at each process to ensure consistency