PRE-HARVEST WATER TREATMENTS TO MITIGATE E-COLI CONTAMINATION IN CHILEAN RASPBERRIES

DWFI-Supported Student Research

Each year DWFI leverages Robert B. Daugherty Foundation funds and additional donor funds to support graduate and undergraduate student research and creative activity. Funds are matched one-to-one by their DWFI Faculty Fellow advisors. This year we had to cancel our annual research forum, scheduled for April 2, and missed seeing the students present their work in person.

To celebrate the incredible research being done, students have shared a brief summary of their work and its impact. We're excited to share their work with you here. View more research from DWFI's supported students » **http://dwfi.us/Gx3150ze6F5**

Water for Food
DAUGHERTY GLOBAL INSTITUTE
at the University of Nebraska

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Advisor: Bing Wang, Assistant Professor, Food Science & Technology, University of Nebraska–Lincoln

WHAT?

Chile is one of the major countries of raspberry production and exportation. E. coli is a contamination indicator commonly verified by importing countries for compliance with their food standards. In our preliminary study, the water for pesticide application on raspberry farms was identified as the top contamination source. There is an urgent need to identify effective treatments to mitigate E. coli in water.

SO WHAT?

The Food Safety Risk Assessment Lab at UNL (https://fsra.unl.edu) started from improving the knowledge on current water usage by raspberry farmers in Chile, by consulting documents published by government agencies and private sectors, as well as personal communication with food safety authority officers in Chile. As a result, the distribution of water sources and amount of water used for pesticide application on Chilean raspberry farms are well summarized.

Improving water quality through various treatments has long been a hot research focus. Therefore, to inform effective water treatments, we employed a structured search protocol aiming to make the best usage of currently available scientific findings pertinent to fresh water treatments implementable on farms of fresh produce. A huge collection of relevant studies was identified: over 10,000 publications were identified and approximately 3,000 of them were preliminarily selected as relevant. Data reported in selected literature will be used to identify the most effective treatments that can be used to reduce E. coli contamination in water.

NOW WHAT?

Chile is dedicated and making great efforts to become a food power in international trade. We anticipate results from our study will assist in science-based decision making for Chilean government agencies and private raspberry farmers to enhance the microbial quality of raspberries for both domestic consumption and exportation, ultimately reduce public health risks related to fresh produce consumption in Chile and worldwide.