Reducing Risk and Preparing for Food Safety Regulations with Improved Produce Washing Methods for Vegetable Farms

Preliminary studies conducted by the **University of Vermont** monitored the levels of E. coli and other bacteria in vegetable wash water, and raised several questions about which washing methods maximize produce safety and quality. Interest in this topic stemmed in part from passage of the Food Safety Modernization Act (FSMA), as well as from increased demand on the part of produce buyers for growers to follow GAPS, and from a growing awareness that food safety is a key consumer concern.

Reducing levels of bacteria in vegetable wash water is one way to reduce food safety risks, specifically the risk of cross-contamination, whereby one contaminated item leads to the spread of a pathogen to other items being washed in the same water. Leafy greens in particular warrant concern about cross contamination because large volumes of these crops are often washed in the same water. The crops are also low-growing and often exposed to splashing soil which can contain pathogens, and they are typically consumed raw.

On-farm studies evaluated the effect of multiple rinses, and use of an organically approved sanitizer, on the level of generic E. coli in leafy greens wash water. Water samples were collected regularly and were analyzed by the Vermont Department of Health Laboratory. The results demonstrated that the highest labeled rate of sanitizer in the first wash was most effective in reducing E. coli levels (99.8% reduction). Triple washing without sanitizer was also very effective (96.9% reduction). Double washing or using a half-rate of sanitizer reduced E. coli, but were not as effective.

Results were shared via presentations, Extension newsletters and individual consultations (100 farms). A fact sheet was developed and a YouTube video was produced. Fifty-five farms were then recruited to take their own water samples to test leafy greens wash water, using pre-paid test kits from VT Department of Health. Forty-three farms submitted 80 samples, which represented both first and final rinses. These were tested for generic E. coli levels. Several farms had very high E. coli levels in their first rinse, which were only reduced to zero after sanitizer treatment, regardless of the number of rinses used. Thirty-four of these farms also completed surveys that estimated an aggregate of 447,000 pounds of leafy greens were washed, with a market value of over $2 million.

• • •

"As a result of this practice, we saw our final rinse E.coli numbers plummet and also found that we have better shelf life for our greens." – Vermont Producer

• • •

EXTENSION RISK MANAGEMENT EDUCATION

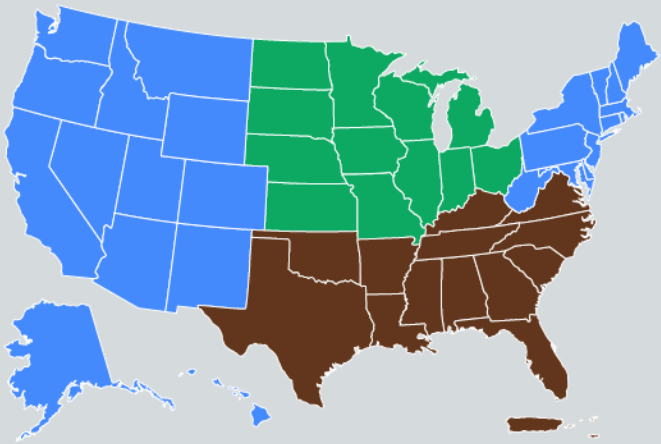
USDA United States Department of Agriculture | National Institute of Food and Agriculture

"Educating America's farmers and ranchers to manage the unique risks of producing food for the world's table."

Extension Risk Management Education (ERME) is delivered through four regional centers that provide grant funding and leadership within their regions.

Projects are producer-focused, results-based and encourage public-private partnerships. Funded projects must identify targeted results that will help producers manage risk and then describe how the project will measure those results.

Extension Risk Management Education has funded innovative programs that have generated tangible results for producers in every state. ERME is committed to funding results, providing transparent accountability, and encouraging collaboration. View the accomplishments of all funded projects on our website.
http://ExtensionRME.org



ERME Regional Centers

NORTH CENTRAL EXTENSION RISK MANAGEMENT EDUCATION

University of Nebraska
Dept. of Agricultural Economics
303 Filley Hall
Lincoln, NE
68583-0922

(402) 472-1742
NCERME.org

N EXTENSION

NORTHEAST EXTENSION RISK MANAGEMENT EDUCATION

University of Delaware
Dept. of Applied Economics and Statistics
112 Townsend Hall
Newark, DE
19716-2130

(302) 831-6540
NERME.org

University of Delaware | Cooperative Extension
College of Agriculture & Natural Resources

SOUTHERN EXTENSION RISK MANAGEMENT EDUCATION

2301 South University Ave.
Little Rock, AR
72204

(501) 671-2165
SRMEC.uark.edu

U of A Division of Agriculture Research & Extension
University of Arkansas System

WESTERN EXTENSION RISK MANAGEMENT EDUCATION

222 N. Havana St.
Spokane Valley, WA
99202

(509) 477-2168
WESTRME.wsu.edu

Washington State University Extension

EXTENSION**RME**.org