Successful Strides with Dairy Producers & Workers
A Report of Engagement, Partnerships and Trust

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Man dies in manure pit on Spafford dairy farm

Calif. man fatally crushed by cows at dairy farm

Father of 5 killed in farm accident

Investigations under way after man, 37, dies in farming accident

Worker Dies After Being Crushed by Cows at Ontario Dairy

Marietta man, 41, who was killed in grain truck accident worked at farm for decades

Man, 2 Sons Found Dead In Maryland Dairy Farm's Manure Pit
Milking Past & Present & Future
A Snapshot of US Dairy Industry

↓ number of dairies
↑ herd sizes
20% ↑ milk output in last 10 yrs

Only 3% of dairies 1000+ head
50% production from 1000+ cow dairies

Trend to large-herd model
Milking 2-3x/day
Dairy Workforce

• 77,000 immigrants (51%) worked on dairy farms in 2014

• Number of immigrants working on dairy farms rose by 35% in six years

• Workers from Mexico, Central and South America
  • 85%+ Hispanic

• Low education level
  • 7% no education
  • 38% primary/elementary school
  • 18% middle school
  • 30% high school
Fatal injuries involving foreign-born workers, by country or region of birth, 2012

- Mexico: 39%
- Asia: 20%
- Central America, except Mexico: 13%
- Europe: 10%
- Caribbean: 7%
- Africa: 4%
- South America: 4%
- Canada: 2%
- Australia and Oceania: <1%

Total = 824

Workers born in Mexico accounted for the largest portion (39 percent) of foreign-born workers who died from work-related injuries in the United States in 2012.

Note: Percentages may not add to 100 due to rounding.
Occupational Health Research Challenges

• Setting
  • Place of business (family legacy and home), not laboratory
    • Owner asks questions: 1) What risk am I exposing myself (business) to?
      2) How do I (or industry) benefit from this?
      3) Will this disrupt any operations?
      4) How will data be used?

• Remote locations (travel)
• Language barriers
• Distrust among workers
• Work schedules
• Farm variability
• Research equipment technical challenges
Our Approach

LISTEN to dairy stakeholders, and RESPOND to needs and concerns with sound and relevant research and outreach efforts.
Our Story: Research

Respiratory

- Occupational Lung Disease and Bioaerosol/Endotoxin Exposure
  - Improved methods for inhalable sampling, endotoxin analysis (rFC, GC/MSMS), microbiome – metagenomics and Antimicrobial Resistance
- Newer workers more susceptible to inflammatory lung disease
- Control mechanisms for dust (washing milking parlor, bedding materials) evaluated
Our Story: Research

Musculoskeletal Symptoms Among Dairy Parlor Workers

• Symptom Survey
  • 4 year study
  • 32 dairies in 5 states
  • N=452

• 89% male
• 97% Hispanic
• 85% kicked by cow

• Job related pain:
  • 47% feet
  • 42% upper back
  • 40% shoulder
  • 36% wrist
  • 29% low back
  • 25% neck
  • 24% knee
  • 19% elbow
  • 19% hip
Our Story: Research

Ergonomics

• Exposure Assessment and Intervention Analysis in Large-Herd Dairy Parlors
  • Full shift (8-12 hrs) direct measurement of physical exposures (muscle forces, posture, repetition, physiological load)
• Comparison of parlor configurations
• Intervention analysis
  • Milking equipment and tools
Our Story: Engagement & Outreach

Research and Outreach US Footprint
- Colorado
- Idaho (upcoming)
- Iowa
- Kansas (upcoming)
- Minnesota
- New Mexico
- New York (upcoming)
- North Dakota
- South Dakota
- Texas
- Utah
- Wisconsin
- Wyoming
Our Story: Engagement & Outreach

Worker Training

OSHA Susan Harwood Targeted Topic Training (Year 2 funded)

_Dairy Worker Safety Training Using Mobile Technologies_

• 357 workers trained in 10 months
• Levels I, II and III Effectiveness Evaluations
  • Level II: 72% Pre-test; 90% Post-test
Our Story: Engagement & Outreach

Dairy Industry and Farmworker Conferences

- U.S. Dairy Education & Training Consortium
- World Dairy Expo
- Western Dairy Management Conference
- National Center for Farmworker Health, Inc.
- Dairy Calf & Heifer Association

Western States Dairy Producers Trade Association
Our Story: Engagement & Outreach

Monthly Safety Articles
Nearly 94,000 reader subscriptions
24 articles to date
Our Story: Partnerships

Producers
Our Story: Partnerships

Key Advocates

• Robert Hagevoort, PhD, New Mexico State University
• Bill Wailes, Colorado State University
• Wyatt Smith, PhD, DeLaval
• Juan Valez, DVM, Aurora Organic Dairy
Recipe of Success: Partnerships

NIOSH Ag Centers
Recipe of Success: Partnerships

State Extension
Recipe of Success: Partnerships

Industry Service Providers

- DeLaval
- FutureCow
- Pinnacol Assurance
- Vita Plus
- Land O'Lakes
Recipe of Success: Partnerships

International Dairy Research Consortium (IDRC)

Australia          Italy
Canada             Netherlands
Denmark            New Zealand
Finland            Sweden
Germany            United States
Ireland

A Global Perspective on Modern Dairy: Occupational Health and Safety Challenges and Opportunities

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(Volume 18, Issue 3, 2013)
Recipe of Success: New Partnerships, New Opportunities

China
Ethiopia
Pakistan
Peru
Recipe of Success: Building & Maintaining Trust
Questions?