

DAIRY CALF MANAGEMENT A VIRTUAL REALITY (VR) EXPERIENCE COLORADO COUNTY & STATE FAIRS

Sasha Terry

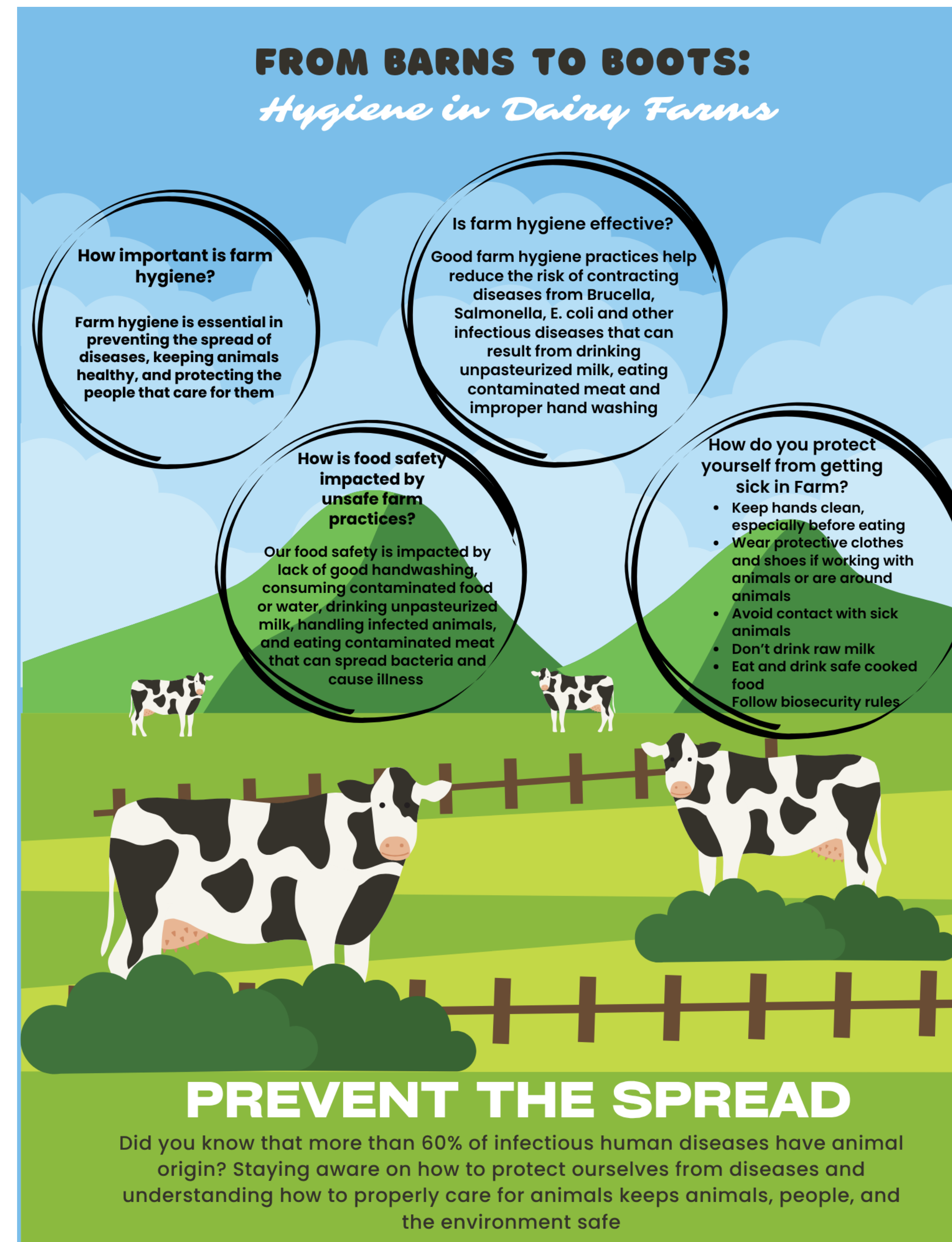
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Sci on the Fly Mobile
VR Lab

Internship Introduction

A Virtual Reality (VR)-based training program for K-12 students to teach essential hygiene and biosecurity practices in dairy calf management. In dairy farm environments, hygiene practices are often neglected, especially in calf care, which can lead to serious public health risks. Through advanced VR technology, we created an interactive and immersive environment for K-12 students to experience real-life farm scenarios. The VR headsets simulated a dairy farm where students observed and participated in various tasks, such as feeding hygienic milk to calves, interact with calves, apply proper biosecurity measures, and understanding the movement of people between dairy animals and calves in the environment. The training included high-fidelity avatars representing workers and animals, allowing students to engage with realistic simulations of daily farm operations. By using VR, we can enhance the learning experience through repetition and interaction, enabling students to visualize complex biosecurity concepts in a user-friendly format. The program incorporated module to accommodate students of varying age groups and prior knowledge, ensuring engagement and comprehension. Our goal was to develop this VR training tool as a hands-on learning resource for K-12 agricultural education, preparing students for future careers in agriculture, veterinary sciences, or public health.

Internship Product – Figure 1.



Takeaways

- Pasteurizing milk for calves is controversial and not common practice, although is important milk hygiene practice for calf feeding
- K-12 students enjoy learning through practice
- Advanced VR technology is a useful learning tool to building skills and expanding knowledge via interactive virtual reality tool

Educational Purpose

Being a Masters of Public Health student, this internship has afforded me the opportunity to understand where more education is needed in the public health field. I have gained a greater understanding of the human-animal connection that impacts our livelihood and deepened my passion of the welfare of animals



Internship Goals

This goal for the program will aim to raise awareness and build practical skills for students interested in agriculture, biology, or animal health, equipping them with knowledge and experience to prevent the spread of infectious diseases from dairy animals to humans.

Internship Product – Figure 2.

qualtrics^{XM}

Pre-Survey Responses - 101
Post-Survey Responses - 81

Internship Products

A flyer (Figure 1.) containing relevant research information on understanding why infectious diseases such as Brucellosis, Salmonella, E. coli and other infectious pathogens transmitted from livestock can have a significant impact on animals and people. The flyer was primarily presented to K-12 students to bring about awareness of hygiene and biosafety practices

A survey (Figure 2.) on K-12 students' experience with virtual reality programs and dairy calf management. This questionnaire is aimed towards K-12 students to understand the effectiveness and response of the VR program. These responses will be collected at various fairs in Colorado and later analyzed