

FARMER'S PERCEPTIONS AND PRACTICES OF ANTIMICROBIAL USE AMONG FRONT RANGE COLORADO DAIRY FARMS

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The Project

Antimicrobial resistance (AMR) poses a significant threat to human and animal health. In the livestock industry, judicious use of antimicrobials is critical to combatting AMR while ensuring effective treatment of animal diseases.

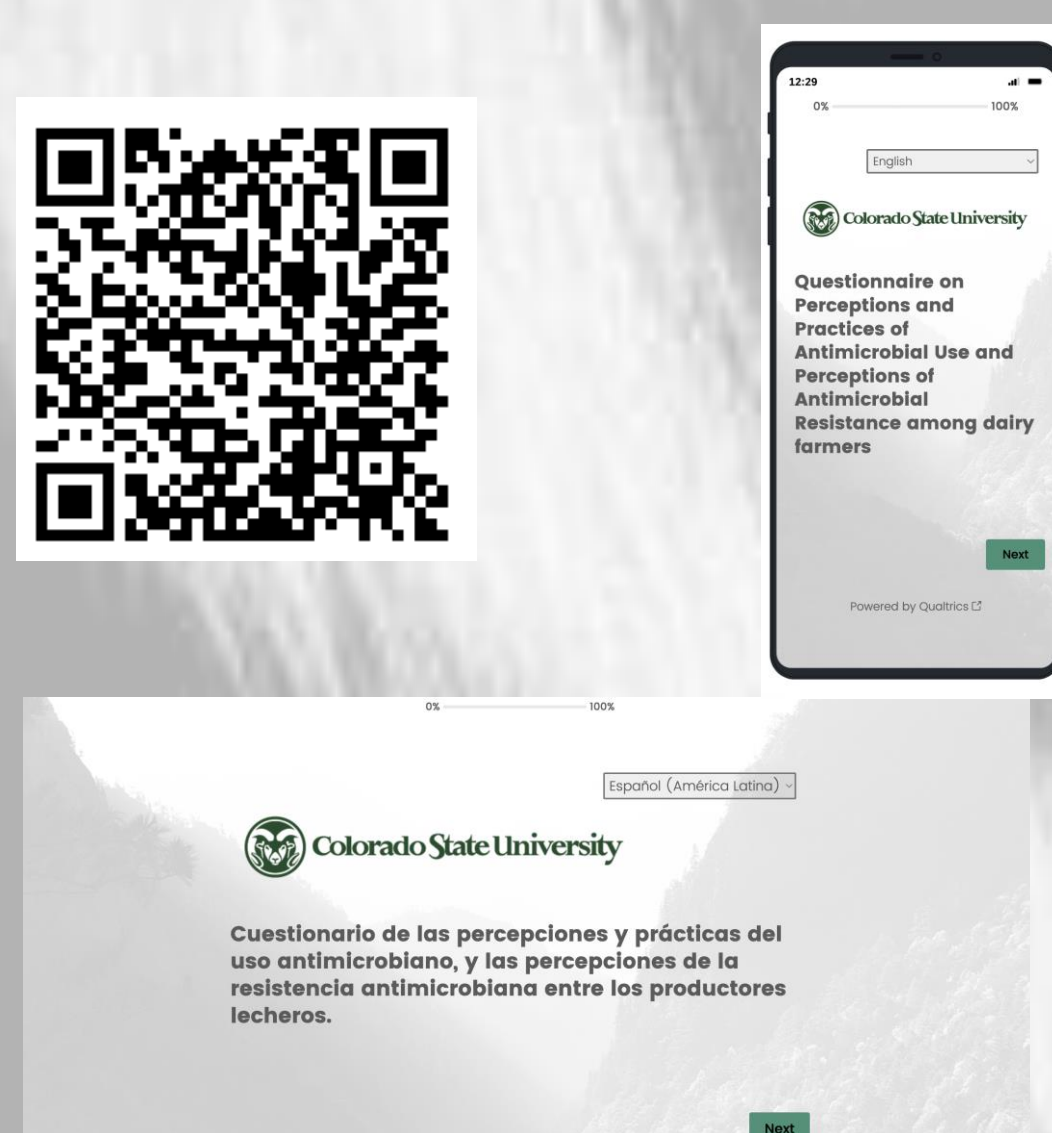
This study seeks to develop and validate a questionnaire that captures the perceptions and practices of dairy farm personnel regarding antimicrobial use (AMU) and the Veterinary Feed Directive (VFD). By identifying knowledge gaps and barriers to antimicrobial stewardship, this research will inform the design of targeted training and education programs to promote responsible antimicrobial use on dairy farms.

Ultimately, the long-term goal is to contribute to the prevention and control of AMR pathogens entering the food chain, safeguarding both animal and human health.

Internship Goals

- Assess:** Evaluate dairy farm personnel's understanding and practices regarding AMU, AMR, and VFD regulations.
- Inform:** Design targeted training and education programs based on study findings.
- Gain Experience:** Enhance practical skills and knowledge in animal and public health research.
- Apply Knowledge:** Expand understanding of dairy farm operations.
- Foster Collaboration:** Build relationships with dairy industry stakeholders.
- Develop Tool:** Create an effective survey to gather data for future training and policy recommendations.

Survey Development



The survey was meticulously developed based on scientific literature and translated into Spanish to ensure inclusivity. It employed diverse question formats to capture a comprehensive understanding of perceptions and practices

Figure 1 and 2. AMU and AMR survey's QR code (left) online, and mobile versions (middle and right)

Data Collection: The Qualtrics platform enabled efficient data collection, offering multiple access points (link, QR code, PDF, paper copies) to accommodate various preferences and situations. The survey was streamlined compared to previous iterations to encourage greater participation.



Figure 2 and 3. From left to right. Dairy Cow. Student delivering survey verbally to one of the dairy workers.

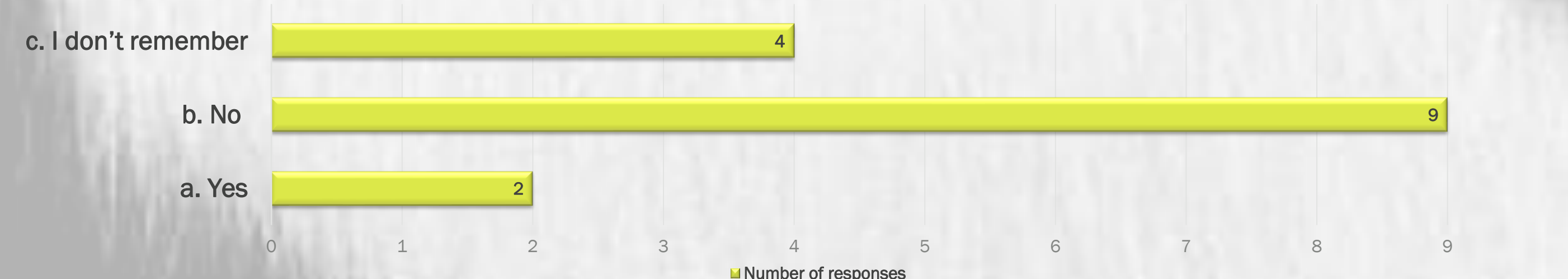
Challenges and Adaptations



The project faced challenges such as time constraints, language barriers, COVID-19 concerns, and the avian influenza outbreak. In response, the survey was shortened, and remote completion options were prioritized.

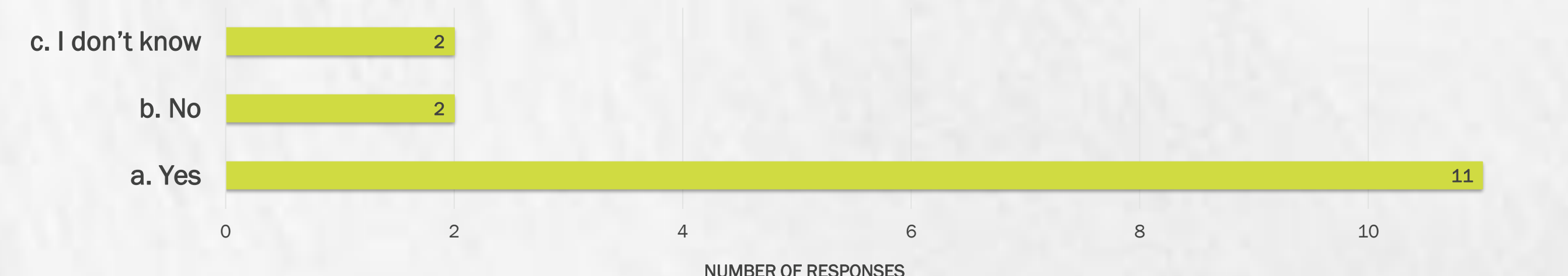
Data Collection and Preliminary Conclusions

Have you ever received any training on judicious antimicrobial use?



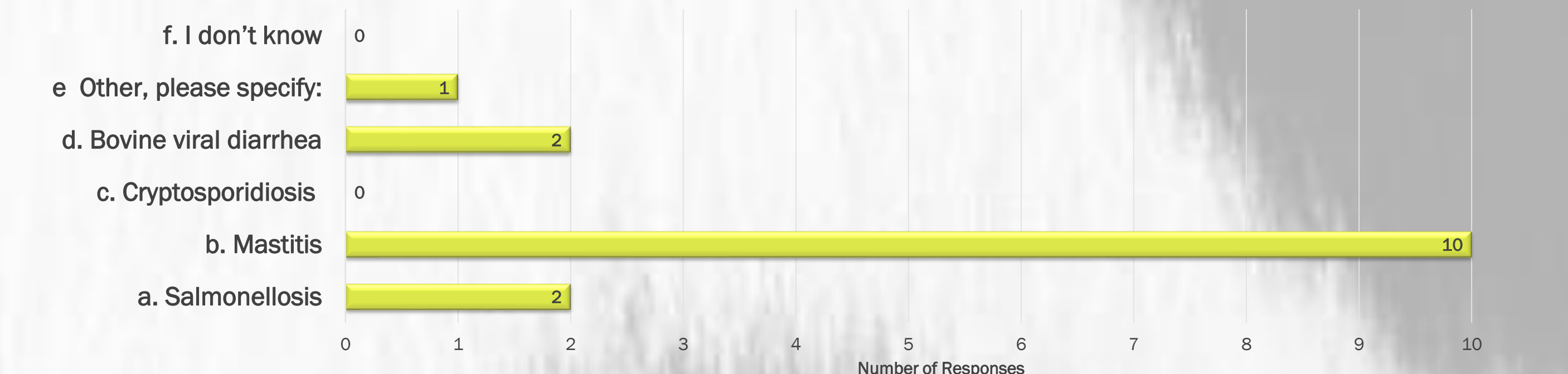
The majority (60%) of respondents indicated they have not received any training on judicious antimicrobial use. A notable portion (27%) of respondents were unsure if they had received training. Only 13% of respondents confirmed having received training. This suggests a significant knowledge gap and highlights the need for increased educational efforts on judicious antimicrobial use.

Do you think there should be more initiatives to promote responsible use of antimicrobials in the dairy industry?



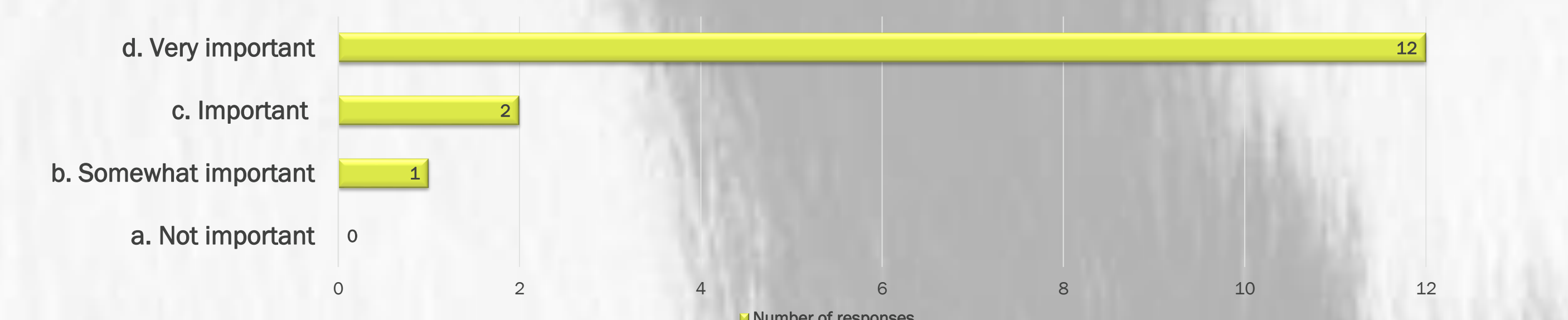
An overwhelming majority (73%) believe that more initiatives are needed to promote responsible antimicrobial use in the dairy industry. This demonstrates a clear desire for increased support, resources, and guidance to address antimicrobial resistance

What disease do you think is the most common in the dairy farm industry?



An overwhelming 80% of respondents identified mastitis as the most common disease, highlighting its perceived prevalence and significant impact on dairy farm management and animal health.

How important do you think it is to know the indications of antimicrobials before you use them to treat animals?



The vast majority (80%) consider it "very important" to understand antimicrobial indications before use, demonstrating a strong sense of responsibility towards proper drug administration and a potential willingness to engage in stewardship programs. Further solidifying this findings, all the remaining respondents also deemed it "important".

Charts 1-4. Bar charts with data from survey questions based on 15 participants from different farms and roles.

Overall, the charts paint a picture of a dairy industry that recognizes the importance of responsible antimicrobial use but faces challenges in terms of training, knowledge gaps, and the need for increased support. These insights can inform targeted interventions to promote antimicrobial stewardship and combat the growing threat of antimicrobial resistance. **The limited number of respondents (15) may not fully represent the entire dairy industry. Further research with a larger and more diverse sample is necessary to generalize these findings.**

Next Steps

- Continue data collection and analysis, adapting to current challenges.
- Develop targeted training programs based on survey findings.
- Incorporate producer feedback into future surveys and training.

Acknowledgements

- Development of the survey: Aracely Diaz, Dr. Mo Salman, Dr. Kelly Sill-Brooks, Ana Velasquez, Pablo Munoz Boettcher, Constanza Hernandez.
- Farm personnel who participated in the survey
- CSU extension internship