

Developing Role Models for Antibiotic Stewardship and Biosecurity on Dairy Farms

Project Overview, February 2007

Background: The dairy industry depends on antibiotics to treat infections and maintain healthy herds. However, the current armament of antibiotics is threatened by the emergence and spread of drug-resistant bacteria. Dairy producers, like other agricultural producers, veterinarians, and medical providers, have a serious responsibility to act as guardians of these precious drugs. Research has shown that many of the 580 dairy producers in Washington are concerned about antibiotic resistance and are interested in taking steps to preserve the power of antibiotics, and that they need guidance and tools for accomplishing this goal.

Judicious use of antibiotics and biosecurity contribute to the long-term economic viability of the industry by:

- ◆ Enhancing dairy producers' ability to produce safe products,
- ◆ Reducing the potential for antibiotic residue violations and associated penalties,
- ◆ Decreasing the potential for resistant bacteria and antibiotic residues to enter the environment,
- ◆ Improving treatment efficacy and therefore decreasing treatment costs,
- ◆ Lowering threat of resistant infections to farm workers and families, and
- ◆ Reducing the threat of introduction of disease into dairy herds.

Goal: To preserve the power of antibiotics by promoting a group of dairy producers to become role models for antibiotic stewardship and biosecurity in Washington State.

Objectives:

- ◆ Engage eight dairy producers and their veterinarians in creating, implementing, and evaluating individualized Antibiotic Stewardship and Biosecurity Plans, aimed at ensuring appropriate antibiotic use and infection control procedures on the dairy farm.
- ◆ Develop an Antibiotic Stewardship and Biosecurity Assessment Tool and Model Plan for distribution to dairy producers in the Northwest.
- ◆ Promote the diffusion of antibiotic stewardship and biosecurity concepts from the participating farms to the wider industry.

Methods:

- ◆ Create a tool for assessing antibiotic use & biosecurity/infection control on dairy farms.
- ◆ Using this assessment tool, collect data on antibiotic use and biosecurity practices on eight dairy farms during on-farm visits.
- ◆ Work with each participating producer and his/her herd veterinarian to develop an individualized Antibiotic Stewardship and Biosecurity Plan for each participating dairy operation, based on the assessment.
- ◆ Educate the participating producers about using antibiotics judiciously and controlling pathogens on the farm, and assist them in implementing the plans.

- ◆ Frequently interact with the participating producers and veterinarians by phone and email to continue the educational process and to assist with and evaluate implementation of the plans, and modify plans as needed.
- ◆ Using information gained during this time, begin creating a Model Antibiotic Stewardship and Biosecurity Plan.
- ◆ Carry out an in-depth evaluation of each plan during on-farm visits and interviews with the herd veterinarians to assess the usefulness, cost, practicality, and impact of the plan.
- ◆ Encourage the participating producers to act as role models for other producers with whom they interact, including family members, neighbors, and others. Provide them with opportunities (both formal and informal) to educate other producers, such as writing newsletter articles on their experiences with the Stewardship Plans and speaking at industry conferences.
- ◆ Using project findings, create (1) a Model Antibiotic Stewardship and Biosecurity Plan that producers can implement in collaboration with their veterinarians and (2) a self-administered tool for producers to use to assess their own antibiotic use and biosecurity practices.
- ◆ Distribute the assessment tool and model plan to all dairy producers in Washington and to northwest region dairy industry partners.

Project oversight and funding: This project is funded by generous grants from Western Sustainable Agriculture Research and Education and the Centers for Disease Control and Prevention. The Advisory Board includes agricultural and veterinary experts from the Washington State Dairy Federation, Washington State University, Washington State Department of Agriculture, Michigan State University, University of Nebraska, as well as dairy veterinarians. Project staff includes two veterinarians and an epidemiologist. The project is administered by Tacoma-Pierce County (WA) Health Department in collaboration with Washington State Dairy Federation. The project period will be approximately three years beginning in January 2006.

Project Accomplishments as of February 2007:

- ◆ Recruited eight dairy producers, all of whom are respected industry leaders in Washington State, to participate in the project
- ◆ Completed on-farm assessments of antibiotic use and infection control / biosecurity on all eight participating farms.
- ◆ Developed individualized Antibiotic Stewardship and Biosecurity Plans for the participating dairy producers, in collaboration with the producers and their herd veterinarians.
- ◆ Introduced the Project to dairy producers around the state via presentations at Washington State Department of Agriculture-sponsored dairy workshops and the 2006 Washington State Dairy Industry Annual meeting.
- ◆ Initiated on-farm mastitis culturing on three participating farms.

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