*USU Extension Grant - Final Report*

Project Leader - David J. Wilson

Project Title: Intramammary Casein Hydrolysate as a Supplement with or Possible Replacement for Current Treatments when Drying Off Dairy Cows

Beginning Date and End Date: April 1, 2017 to December 31, 2017

Total Requested: $29,088.00

Project Summary: Antibiotic use in food animals is of great concern to consumers; pressure for prudent use of antibiotics or non-antibiotic alternatives has risen within the dairy industry. This project investigated a non-antibiotic compound, casein hydrolysate, as a possible adjunct or alternative treatment to standard antibiotic dry cow therapy when drying off dairy cows at the end of lactation.

Project Results:

a) Increased collaboration between on- and off-campus faculty:

Worked with Clark Israelsen, Cache County dairy extension agent.

b) Outcomes, outputs, and impacts:

Outcomes: Data collection is complete and data analysis is ongoing. Comparisons between three traditional industry treatments and casein hydrolysate alone or in combination with the other treatments were studied. Preliminary results show that all 32 cows studied were successfully dried off, all 16 cows that calved again did so without clinical signs of mastitis or cow discomfort, and all mammary gland quarters resumed milk production following the next calving. Bacteriological cure rates, somatic cell count response, and other outcome measures will be calculated. From 16 cull cows studied at various stages following dryoff, mammary gland involution quantitative measurements and biological and tissue indicators of involution are being analyzed.

Outputs: The U.S. Food and Drug Administration has expressed support for the possibility of casein hydrolysate being further investigated as a possible new non-antibiotic treatment to be used when drying off cows at the end of lactation. See below regarding outputs regarding presentation and dissemination of results.

Impacts: It is too early to assess farm/industry impacts because this is treatment is not approved for use in dairy cattle in any form. Nevertheless, it has become apparent that producers participating in the study are interested in using casein hydrolysate in the future when drying off cows. If this product does progress to approval as a labeled non-antibiotic intramammary infusion treatment with efficacy, its adoption will likely be widespread.

c) Efforts/plans to produce, publish, and disseminate scholarly materials:

There will be at least one refereed journal paper, multiple presentations including at dairy producer, veterinarian, and allied industry conferences, and at least one Utah State University Dairy Veterinary Newsletter article.

d) Efforts/plans to secure extramural funds:

We plan to submit to USDA for further funding, and possibly to industry as well.

USU Extension System outreach:

Results will be presented at the 2018 annual extension conference, and Clark Israelsen will present the results at the Summer Conference for USU Agricultural Extension Agents in June 2018.