

Title:

Establishing the roles of local and systemic inflammation in reproductive failure in dairy cows

Investigators:

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Study description:

Infertility is a serious economic and physiological problem of the dairy industry. Inflammation appears to play a role in both infection mediated and anatomically mediated infertility problems that have been studied in other species. In these studies, we will attempt to correlate systemic inflammatory activation and its related inflammation in the reproductive tract with the lack of pregnancy success in dairy cows. We will monitor the level of inflammatory activation in the reproductive tract prior to the initial attempt at breeding, and will also measure the level of inflammation in cows that fail to achieve a successful pregnancy after more three of more service attempts. In these studies, we will also examine the levels of systemic and reproductive system inflammation induced by respiratory and mammary infections in dairy cows. Finally, we will assess the impact of these infections on the rate of successful pregnancy in dairy cows.

The study involves collecting reproductive tract flushings and blood samples from 75 cows during bi-weekly farm visits to a previously identified dairy herd. These samples will be evaluated for uterine and systemic inflammatory markers.

Duration of study:

The study is ongoing and is expected to be completed in 3-4 years.

Potential benefits to veterinary medicine:

These studies should provide the basis for development of a model system to test interventions designed to reduce inflammatory activation and the loss of regulation of the inflammatory processes that interfere with pregnancy success.