

Project Information:

Project Title: Impacts of quality colostrum on lamb microbiome and health and lambing time field day.

Recipient Organization Name: South Dakota State University

Recipient's Project Contact

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Project Report

Annual Report Type:

Reporting Period

Start Date: October 1, 2023

End Date: October 1, 2024

Performance Narrative:

Activities Performed:

1. Lambs born at SDSU Sheep Unit received one of three treatments or control: frozen ewe colostrum sample, frozen bovine colostrum, commercial powdered colostrum replacer, or control of fresh colostrum from dam. Polypay lambs born as twins or triplets were removed from their mothers at birth and placed into of these four groups. (Completed.)
2. Lamb weights were recorded at birth, 24 hours, 1 week, 2 weeks, 3 weeks and 4 weeks. (Completed.)
3. Lamb rumen and feces samples were taken to determine microbiome. Samples were taken at birth, 24 hours and weekly until 4 weeks of age. (Samples completed, microbiome analysis in progress.)
4. Passive immunity, as measured by IgG levels will be determined by ELISA test on a) colostrum samples, b) lamb blood serum taken at birth, 24 hours and weekly until 4 weeks of age. (Samples completed, analysis of IgG in progress.)

Accomplishments

Estimate the Total Percentage (%) of work Completed on the Project.....

#	Accomplishment/Activity	Relevance to Objective
1, 2, 3 and 4	Assignment of lambs to treatment groups and collection of weight, blood, rumen and feces samples. – 100%	Necessary to determine project objectives.
3	Analysis of microbiome samples. -80%	Necessary to determine impact of different types of colostrum on gut activity and subsequent growth performance.
4	Analysis of IgG levels. 80%	Necessary to determine impact of different types of colostrum on passive immunity.

Challenges and Developments

#	Challenge or Development	Corrective Action or Project Change
4	Analysis of some samples are not responding well on ELISA tests.	Working on other potential ways to measure.

Outcome and Indicator Results to Date

#	Outcome/Indicator	Quantifiable Results
1	Lamb growth performance	Did not differ between treatments.

Upcoming Activities

#	Activities	Anticipated Completion

Project Expenditures to Date

Please see separate attached budget document. 100% of funds have been expended.

#	Cost	Amount approved	Federal Expenditures