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An Investigation of Livestock Distribution with
Application of Nitrogen Fertilization
Eugene E. Eggleston
University of Wyoming
Project Number 96

During the summer of 1958 a study was set up by the Agronomy Department of the University of Wyoming for the investigation of the effect of nitrogen fertilization upon livestock distribution. This project is under the leadership of Dr. Dixie R. Smith and will be used as a Master's degree problem by the author.

The study area is located on the west end of Sportsmans Ridge, just east of Crystal Creek in the Gros Ventre drainage area of the Teton National Forest, Wyoming. The objectives of the program are as follows:

1. Determine effect of nitrogen fertilization on plant production.
2. Determine the effect of nitrogen fertilization on livestock utilization.
3. Determine the botanical composition of the study area.
4. Determine the total reducing sugar and protein content of the major grass species.
5. Determine the degree of use by livestock on the non-treated areas.

Three five-acre blocks and their contiguous non-treated areas were surveyed and staked in the early part of June, 1958. Randomized paired caged plots (16 square feet) were used for determining the above objectives. On June 23, 1958 an aerial application of 67 pounds of nitrogen per acre was applied to the three treated block areas. Observations and measurements made on the study areas are as follows:

1. Vegetal composition in the caged plots was obtained by use of the point transect method.
2. The caged plots and non-caged paired plots were clipped at the end of the grazing season to determine production and utilization by livestock.
3. Poa secunda Presl., the major grass species on the area, was clipped at different stages throughout the summer to obtain sugar and protein analysis.
4. Soil samples of the area will be analyzed for texture and pH.
5. Data will be analyzed by use of statistical procedures.

High Altitude Animal Physiology
Garth Kennington
Lawrence College

Initial preparations were made for high altitude physiology studies to be continued during the summer of 1959.