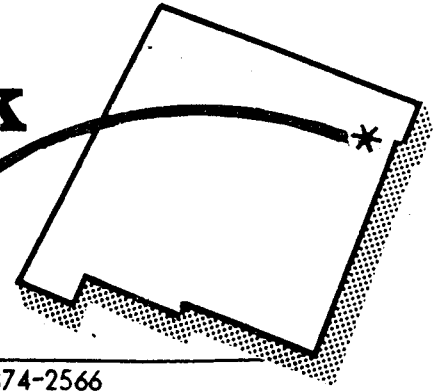




# Clayton Livestock Research Center

## PROGRESS REPORT



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### BLOOD CHEMISTRY OF NEWLY RECEIVED CALVES

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The majority of the research conducted at the Clayton Livestock Center deals with the performance and health of newly-received calves. A portion of our effort, however, is concerned with a more basic study of the physiology of such calves. The development of nutritional and medicinal programs designed to improve performance of these calves might be enhanced by a greater knowledge of the physiological changes occurring during marketing and transit stress. This report is concerned with blood chemistry (metabolic profile) of calves as a possible index of physiological response to stress.

#### Procedures

During the spring of 1979, a total of 327 calves were used in an experiment to determine the relationship of blood chemistry to subsequent health and performance. Calves were purchased in Florida and shipped to the CLRC in three separate loads of approximately 120-130 calves per load. Load 1 arrived on January 27, 1979; load 2 arrived on March 4, 1979, and load 3 arrived on March 25, 1979. Blood samples were obtained from 72, 125, and 130 calves "off-truck" from loads 1, 2 and 3, respectively. All loads averaged about 39 hours in transit.

Jugular blood samples were withdrawn from individual calves after weighing, tagging, immunization, castration and dehorning had

been completed. Calves were then randomly allotted to a completely randomized design with a 6 x 2 factorial arrangement of treatments. Treatments consisted of diets of alfalfa hay alone, 75% concentrate alone (composition given in CLRC Progress Report #1), 75% concentrate + free choice alfalfa hay, 75% concentrate + free choice millet hay and 75% concentrate + free choice alfalfa hay for 2 weeks. In addition, calves were either dipped with GX 118 or received a Warbex pour on. Average daily gain, number of times receiving medical treatment, rectal temperature, processing order and pen feed intake were recorded for all animals. Calves in load 1 were bled again at 2 and 4 weeks after arrival, calves in load 2 were bled at 2, 4 and 8 weeks after arrival and calves in load 3 were bled only on arrival. Blood samples were centrifuged after withdrawal and frozen serum was shipped to Vet Path Laboratories, Teterboro, New Jersey, for analysis.

Performance of these and other calves receiving the same dietary treatments has been previously reported in CLRC Progress Reports 8 and 9.

#### Preliminary results

Approximately 15,000 data points were collected, as 24 analyses were done on each serum sample. Analyses included serum glucose



