APPENDIX C DETERMINING ANIMAL UNIT EQUIVALENT BASED ON LIVESTOCK WEIGHT

Livestock body size affects the quantity of dry matter consumed. Not all livestock are the same size or weight, and weight variations require adjustments in animal unit equivalents. The University of Nebraska defines an animal unit equivalent as *a 1,000-pound cow of above average milking ability with a calf less than 3 to 4 months postpartum*. The Society for Range Management defines an animal unit as *one mature cow approximately 1,000 pounds, either dry or with a calf up to 6 months of age.* In either case, the animal unit equivalent is equal to 1 animal unit, which has a daily dry matter allocation of 26 pounds of forage.

Following are several methods to determine animal unit equivalents based on livestock weight:

1. Holecheck et al. 1989, uses a rough guideline by using 2 percent of the body weight to determine daily dry matter intake per day when values for different seasons are averaged across the year.
2. University of Nebraska, *A Guide For Planning And Analyzing A Year-Round Forage Program*, Nebraska Cooperative Extension EC 86-113, suggests animal weight variations require adjustments in animal unit equivalent values equal to 0.1 animal units for every 100 pounds of liveweight that the animal differs from the standard 1,000 pound animal unit equivalent of 1. Thus, a cow with calf less than 3 to 4 months postpartum that weighs 1,200 pounds would have an animal unit equivalent of 1.2.
3. North Dakota State University, *Animal Unit Equivalent for Beef Cattle*, DREC 98-1020, suggests using the metabolic weight to estimate the daily or monthly forage demand. Metabolic weight is the liveweight to the 0.75 power. Beef cattle animal unit equivalents can be determined for animals of different sizes by calculating their metabolic weight as a percentage of the metabolic weight of a 1,000 pound cow. The following formula would be used:

$$\frac{(\text{Live animal weight})^{0.75}}{1000^{0.75}} = \text{Animal Unit Equivalent}$$