2005 Annual Report

Beef Section

Dickinson Research Extension Center
1089 State Avenue
Dickinson, ND 58601

Effects of sampling date on the nutrient content of stockpiled native range in south western North Dakota

B.A. Porter[1], W.W. Poland[2], L.J. Tisor[2], G. Ottmar[2] and J. Nelson[2]
[1]Department of Agriculture and Technical Studies, Dickinson State University
[2]Dickinson Research Extension Center, North Dakota State University

The usefulness of stockpiled native pastureland in southwestern North Dakota is limited by its availability and nutrient content. The objective of this study was to characterize the changes in nutrient concentration of stockpiled native range from early November to late January. In each of four years, dry beef cows were grazed on a single stockpiled native range pasture. For sampling purposes, the pasture was separated into an east half and a west half. There were five permanent sampling sites on each half, giving ten sampling sites total. Forage samples were collected from each site on 14-day intervals. In the last three years, forage samples were pooled within each site, sampling date and pasture half for nutrient analysis. Forage samples were analyzed for concentrations of crude protein (CP), acid (ADF) and neutral (NDF) detergent fibers, calcium (Ca), phosphorus (P), magnesium (Mg) and potassium (K). Total digestible nutrient (TDN) concentration was calculated using a standard procedure. Results suggest that the concentration of all reported nutrients, with the exception of P ($P > 0.35$), were affected by advancing season. Concentrations of CP ($P < 0.1$) and Ca ($P < 0.05$) increased and then decreased with advancing season. Concentrations of TDN ($P < 0.02$), Mg ($P < 0.1$) and K ($P < 0.1$) increased, and ADF ($P = 0.01$) decreased, linearly with advancing season. NDF concentration ($P < 0.1$) increased in one year and remained constant in the other two years. Average total forage available for grazing varied with year (P # = 0.03). The lowest level was in the first year and the highest occurred in year two (803, 1414, 1222 and 1027 lb/ac for years 1, 2, 3 and 4, respectively). The total amount of grass dry matter removed per animal unit grazing day was 68 lb, with forbs coming in at 9 lb, for total forage available for grazing removed per animal unit grazing day of 77 lb. Using this total number we can estimate that in this pasture there were approximately 11 animal unit grazing days per acre. Stated differently, it required approximately 2.8 acres per animal unit month assuming a 50% use. Stockpiled native range is a readily available source of grazing for use in extending the grazing season of dry beef cows into the late fall and early winter. Nutritional supplementation to offset declining forage quality and appropriate stocking rates will be essential for optimizing the use of this grazing

resource.

[Back to 2005 Annual Report Index] [Back to Beef Reports]

[DREC Home] [Contact DREC] [Top of Page]