

the pastures. They regained the lost weight during alternate 2 wk periods in corrals while fed alfalfa and grass hay. During each period (June, July, August, September) goats consumed mesquite bark but little or no leaves from mesquite bushes. Seasonal and annual rainfall were above average (10 and 16 inches, respectively) during 1992. Mesquite dominance has not been changed after four years of goat grazing. Changes in mesquite and in associated plant cover and vegetational composition will continue to be monitored.

RANGE FERTILIZATION

G. B. Donart and E. E. Parker

(Key Words: Fertilizer, Forage Production)

Past research at the Fort Stanton Experimental Ranch indicated positive results from range fertilization. Responses for the new ranch at Corona, representing different soils and vegetation patterns are unknown. Replaced fertilizer response plots were established on shallow calcareous and deep sandy soils at the Corona Range and Livestock Research Center in 1991. Application rates were 0, 30, 60 and 90 lb/ac of actual N in the form of urea. Initial response indicated shallow soils favored a heavier application rate (60 lb/ac) than did sandy soils (30 lb/ac). Grass production was increased from 1146 to 1676 lb/ac on the shallow soils with the 60 lb rate. Grass production was increased from 1146 to 1676 lb/ac on the shallow soils with the 60 lb rate. Grass increases were less on the sandy soils (1100 versus 1181 lb/ac for the control and 30 lb rate, respectively). Fertilization resulted in increased forb production on both soils. Increases were greatest on the sandy soils (over 400%) with the application of 60 lb of N, indicating downward translocation of N in the soil. A substantial amount of high intensity summer rainfall may have effected production results through leaching. Future work will involve soil chemical analysis and fertilizer application treatments on old abandoned fields to determine if altering nutrient status can expedite recovery.

COMPARISON OF METHODS FOR DETERMINING CATTLE DIETS

A. Mohammad, R. D. Pieper, J. D. Wallace, J. L. Holechek and L. W. Murray

(Key Words: Diet Evaluation, Fecal Analysis)

Fecal samples, evacuated rumen samples, and non-evacuated rumen samples were compared at different seasons as techniques to determine diet composition of cattle. The study was conducted at the New Mexico State University College Ranch, near Las Cruces. Six rumen fistulated steers were used during May 28 to June 7 (spring), July 19 to August 8 (summer), October 1 to 17 (fall), 1989, January 8 to 28 (winter) 1990, and only 4 rumen fistulated steers were used during July 24 to August 4 (summer) 1990. Sampling techniques differed ($P < 0.05$) for the proportion of some plant species in steer diets at certain seasons. These differences were