Post-partum anestrus and fall pregnancy in two year old range cows supplemented with protein and fat. D.M. Gambill, M.K. Petersen, D.E. Hawkins, I. Tovar Luna, J.S. Serrato Corona, D. Dunlap and K.M. Havstad. New Mexico State University and USDA Jornada Experimental Range, Las Cruces 88003-0003.

The objectives of this study were to determine the effect of supplements containing 50% bypass protein with and without 10% fat on rebreeding performance of two year old range cows. Sixty-three black Angus x Hereford cows with nursing calves at the USDA Jornada Experimental Range were divided by calving date and sex of calf into one of three pastures. Cows received either a 20% crude protein supplement (20%S), 48 % crude protein supplement (which was 50% bypass protein) (48%S) or 48%S with 10% added fat (in the form of Alifet) (48%S+F) from calving until breeding (February to May). Cattle were weighed before calving, before exposure to bulls and again at weaning. Serum samples were collected twice before (10 d intervals) breeding to determine percentage of cows that had cycled prior initiating the breeding season. Pregnancy was determined by rectal palpation at weaning in October. Pasture conditions were poor since precipitation was less than average. Data were analyzed by analysis of variance using the General Linear Model procedure of SAS (1995). From calving to breeding, weight change was -7, +14 and +6 $\pm$ 3.0 kg for 20%S, 48%S and 48%S+F ($P<.01$). Calf weaning weights were similar for all treatments (183, 186, 185 $\pm$ 4.1 kg for 20%S, 48%S and 48%S+F respectively). The number of cows that had cycled prior to the breeding season was influenced by supplement fed. Twelve out of 21 cows fed 48%S+F while only 7 and 3 out of 21 fed 20%S or 48%S had cycled prior to the beginning of the breeding season ($P<.01$). In the fall 19 out of 21 of the cows fed 48%S+F and only 10 and 11 out of 21 of the cows fed 20%S and 48%S were pregnant ($P<.05$). This study showed that the 48%S improved body weight whereas the 48%S+F improved the important reproductive measurements.

Key Words: Supplementation, Reproduction, Beef Cows