

The analysis of variance showed significant differences ($P < .01$) among months. Based on these results, concentrations of Mg, Co, Mn, and Zn in the forage are sufficient to cover the animal requirement, but it is not the case of Cu during the Fall and Winter months, thus there is a need for supplementation.

KEY WORDS: Goats, arid zone, diet nutritive quality, magnesium, trace elements.

138 INFLUENCE OF ENERGY SUPPLEMENTATION THE REPRODUCTIVE PERFORMANCE OF FEMALE GOATS/GRAZING NATIVE RANGE

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A study was conducted to determine the influence of various levels of energy supplementation on the reproductive performance of female goats grazing native "Caatinga" range. The study started in November, two months before the end of the dry season. The energy supplement was whole sorghum grain. One hundred and twenty pre-puberal female Moxoto goats weighing 10 to 12 kg were randomly assigned among four levels of grain supplementation: 0, 0.6, 1.2 and 1.8% of the body weight on an as fed basis. Quantity of supplement offered was adjusted bi-weekly using the mean weight of goats from each treatment. Grain was offered individually in headlock feeders twice a day, before and after grazing (6 am and 5 pm). Goats rotationally grazed three pastures of 65 hectares each. A mineral-salt mix was offered ad libitum. Estrus was detected with eight vasectomized male goats. Each of the five Moxoto bucks used for breeding, bred six does from each treatment. Reproduction data of the does during the first year are summarized by increasing supplement level as follows. Length of estrous cycles was: 70, 67, 71, and 61 days, respectively. Apparent fertility was: 33, 85, 96, and 78%, respectively. Gestation lengths were: 142, 146, 150, and 148 days, respectively. Kidding rates were: 1.00, 1.04, 1.19, and 1.13%, respectively. Weights at first breeding were 11.5, 12.2, 17.3 and 15.7 kg, respectively. Weights at pregnancy were 14.5, 17.8, 19.9 and 19.7 kg, respectively. Grain supplementation, regardless of level, decreased the mean interval between estrus presentation and increased pregnancy rates. Long estrous cycles could be due to undetected or silent estrus. Since most of the does presented estrus at the beginning of two consecutive wet seasons, an influence of environment is apparent.

KEY WORDS: Female goats, reproduction, range, energy supplementation.