

## 182 MIXED GRAZING BY GOATS AND SHEEP IN THE BRAZILIAN CAATINGA

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The research was conducted in the Fazenda Pau Preto, Taua, Ceara, Brazil, and extended from the dry season of 1983 to the end of 1985 rainy season, with the objective of evaluating the effects of stocking rate and animal combination on goat and sheep production. One area of native caatinga was divided into ten hectare paddocks that were assigned to treatments represented by four stocking rates and three animal species combinations (including cattle). Castrated weaned animals were used and were replaced each year by the beginning of each dry season (May). The weight gains of the goats (kg/head) decreased from 14.4 with 2.5 ha/head to 7.6 with 0.6 ha/head in the period 1983/1984, and from 16.8 to 14.0 for the same stocking rate order in the period 1984/1985. Sheep had weight gains decreasing from 12.5 kg/head to 7.6 kg/head when the stocking rate increased from 4.0 to 16.0 head per paddock in 1983/1984 period, and from 20.7 kg/head to 7.9 kg/head for the same stocking rates 1984/1985. The combinations did not seem to affect the performance of the two small ruminant species. The live weight production per ha increased with increasing stocking rate, independently of combination level. However the two year average seemed to indicate that better results were obtained with mixed grazing of goats and sheep (14.5 kg/ha/year for the sheep and goat combination, 12.3 kg/ha/year for goats alone and 11.4 kg/ha/year for sheep alone). The results suggest that the best stocking rate was 0.83 ha/head with a combination of eight goats to four sheep.

KEY WORDS: Combination, stocking rate, weight gain.

## 183 GOAT PRODUCTION IN MANIPULATED BRAZILIAN CAATINGA

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The experiment was conducted at Fazenda Pau Preto, Taua, Ceara, Brazil and lasted for a period of five years, beginning in the 1980 dry season. The vegetation treatments were: A-native, B-lowered (reduced height), and C-thinning. The paddocks were 10.0 ha in size for treatment A and 7.0 ha for treatments B and C. Young weaned castrated male goats formed the experimental groups that were replaced annually. The animals were weighed five times a year and the stocking rate adjusted according to the biomass production of herbaceous cover by the end of the rainy season

(April) of each year. The average stocking rate was 10.4 ha/AU for treatment A, 5.5 ha/AU for B and 6.1 ha/AU for C. The average weight gain per head was 10.4 kg for treatment A, 16.8 for B and 15.1 for C. Seasonal variation was substantial with values for the dry season and rainy season, respectively, of 3.6 kg and 6.8 kg for treatment A, 4.9 kg and 10.9 kg for B and 5.4 kg and 9.7 kg for C. The native caatinga paddocks produced 13.0 kg of live weight ha/year, the lowered 36.7 kg/ha/year and thinned paddock 30.9 kg/ha/year. The results suggest that the manipulation of trees and shrubs of the caatinga favoured goat production, and that lowering is the best method.

KEY WORDS: Lowered, thinning, seasonal variation, weight gain.

184 CATTLE AND GOAT GRAZING ON THE HERBACEOUS COVER OF A LOWERED CAATINGA

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The experiment was carried out at the Fazenda Pau-Preto Taua, Ceara, Brazil, extending for one year, beginning with the 1984 dry season. The objective was to evaluate the effects of stocking rates and the proportion between the two animal species on plant cover, biomass production and composition of the herbaceous layer. The 12 experimental treatments resulted from combinations of goats and cattle at various stocking rates. The vegetation data were collected at the end of 1984 and 1985 rainy seasons. The average percent ground cover varied from 71.5 in 1984 to 72.1 in 1985. The fluctuations of this parameter were minimum and did not seem to indicate any trend among the treatments. The total biomass production decreased from 3.5 t/ha in the first year to 1.7 t/ha in the last. However, the treatment effects were again irrelevant. The herbaceous biomass production decreased from 0.75 t/ha in 1984 to 0.57 t/ha in 1985. However, at the treatment level, biomass increased from 0.42 t/ha to 0.74 t/ha in the paddocks with goats alone, decreased from 0.72 t/ha to 0.39 t/ha when one head of cattle was added in the paddock and from 1.36 t/ha to 0.36 t/ha when two head of cattle were combined with goats in the paddock. The herbaceous biomass increased as a % of total biomass from 22.2% in 1984 to 37.5% in 1985. The paddocks with goats alone showed an increase from 11.8% to 45.7%; the pastures with goats plus one head of cattle increased from 21.5% to 29.8%, whereas when two head of cattle were added, the percentage standing biomass decreased from 34.4% to 16.1% in the period 1984. The results suggest that goats grazed less on the herbaceous species than did cattle.

KEY WORDS: Total biomass, herbaceous biomass, cover.