

Effect of pruning of sabiá (*mimosa caesalpinifolia* benth.) in different seasons on production and chemical composition of DM

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Introduction The Northeast Region of Brazil covers an area of 1,561,177.80 km², 75% of which are classified as semi-arid (IBGE, 1999). The predominant vegetation is Caatinga, which is characterized by xerophytic species that are usually deciduous. With a considerable production of DM, but constantly confronted with the dry season, causing severe reduction in available forage and also with the conservation of these species forage in the period of greatest availability (rainy season) is indispensable. With this, sabiá can represent up to 70% forage consumed by ruminants (Mendes, 1989). Introducing chemical composition from the aerial part into hay or green foliage of: DM 35 to 96%, CP 7 to 20%, NDF 44 to 56% and ADF 24 a 31%. Being that, the proper management can provide better utilization for breeding responding to low pruning (0.4 m), medium pruning (0.8 m) and high pruning (1.2 m above the ground). We had as objective analyze the forage production from the annual pruning of twigs with leaves from sabiá, in the months of March or June, and the effect of the chemical composition.

Material and Methods A study in Nova Olinda/CE, Olho D'Água de Santa Barbara Farm (7° 8'13"S and 39°38'42"W), between March 2005 and June 2006, in the woods sparse (187 plants ha⁻¹) of sabiá. The area is a result of germination and regrowth of a native sabiá after sowing *Andropogon gayanus* and grazing by cattle and goats. We collected data from annual production of green matter of the sabiá from the pruning of branches and leafy diameter ≤ 10 mm. Annual pruning was done in full vegetation period (March) and at the end of the vegetation period (June) in 2005 and 2006. The material collected from each tree was weighed, crushed, homogenized and sampled (250 to 1000 g). The fresh samples were dried in the sun for three days, and in oven with air circulation (65 ± 2° C) for 24 h, for later determination of DM, CP, NDF and ADF. Each tree was considered as the sampling unit and was used a randomized complete block design with two replications (trees) per treatment in each of the three blocks. Treatments (cutting times) consisted of control (T1), where the tree has not suffered the annual pruning of its branches, the annual pruning in March (T2) or June (T3). They were subdivided in time (2005 and 2006). For comparison of means we used Tukey test at 5%, when necessary.

Results and Discussion The average production of DM of sabiá hay showed interaction between mowing season x year (P<0.01), (Table 1). There was a reduction in forage production between the first and second year when the cut was made in March (P<0.01), while the regrowth tended to increase forage production in relation to the first cut when held in June (P>0.05) (Table 1). The average production of DM between the first collection in March 2005 and cut the sprouts one year after decreased (P<0.01), 76.31%, showing significant stress on plants pruned in March, while pruning in June there was a non-significative increase on the mean of 13.46% from one year to another. Probably, the nutrient reserves were exhausted in March, and they had

already recovered in June, so that the cut later in the rainy season favored regrowth (Carvalho et al. 1998). Another explanation refers to the largest expense reserves by plants pruned in March, which re grew leaves thirty days after the pruning and had no time to replenish reserves before the end of the rainy season. This regrowth faded naturally senescent and re-vegetate only in the following year after the start of the rainy season. The plants pruned in June had almost completed its cycle and reset their reserves, then went to sleep and waited for the next rainy period. Decreases in forage production between annual pruning done in April or June, were observed in jurema preta (*Mimosa tenuiflora* (Willd.) Poiret), more expressive when held in April (Bakke, 2005), and therefore, showing that jurema preta is more sensitive to cutting than sabiá. The CP contents were affected ($P<0.01$), by harvest time (Table 2). We observed that the average CP in the forage were higher in the collected of March (16.09%) and 2006 (15.68%) ($P<0.01$). Results similar to Pereira et al. (1999), working with sabiá hay (leaves and tender stems cut in the pre-flowering stage) which had CP values of 16.78, 18.23 and 19.28%, respectively. The NDF were affected ($P<0.01$) by harvest time (Table 2). Being lower in June ($P<0.01$), which was expected, given the more advanced vegetative stage. Additional studies should be conducted in the attempt to explain why forages in the vegetative stage advances content NDF. The ADF contents were affected by the interaction between mowing season x year ($P<0.05$) (Table 2) and decreased significantly ($P<0.05$), between March 2005 and March 2006 (63.20% x 58.16%) and showed anot significant inverse trend ($P>0.05$) between June 2005 and June 2006 (46.51% x 49.30%). Vasconcelos et al. (1997) studied the chemical characterization of hay forage in the Brazilian semi-arid and dry rainy season, found for the ADF (31.00 and 24.00%) respectively, lower than the values obtained in this study, since the aforementioned author worked with the material obtained from the leaf fraction, without the presence of thin branches, they confirm in part the results of this study, as the level of ADF decreased from March (rainy season) and June (dry season) in the years 2005 and 2006.

Table 1 - Production of DM (kg tree) of Sabiá Hay in Different Seasons Cut

Cut Season	2005	2006
T2 - Pruning - March	15.33A	3.63B
T3 - Pruning - June	11.08A	12.57A

Table 2 – CP, NDF and ADF of Sabiá hay in Different Seasons Cut

Cut Season	2005	2006	Average
CP			
T2 - Pruning - March	14.66	17.52	16.09 A
T3 - Pruning - June	13.07	13.85	13.46 B
NDF			
T2 - Pruning - March	77.44	76.74	77.09 A
T3 - Pruning - June	65.43	67.13	66.28 B
ADF			
T2 - Pruning - March	63.20 a	58.16 b	60.68 A
T3 - Pruning - June	46.51 a	49.30 a	47.90 B

Conclusions - The pruning of the branches of sabiá for hay production in consecutive years should be held in June to ensure greater DM production.