Cratylia argentea: a Shrub Legume having Potential for Cattle Feed During the Dry Season

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Introduction

The yield and quality of tropical pastures are very low during the dry season. In the last decade, the utilisation of shrub and tree legumes as a forage resource for supplementing cattle during this period has gained increased attention, mainly due to the difficulties of obtaining persistent tropical grass x herbaceous legume associations, particularly at the farm level. The shrub legume *Cratylia argentea* (ex. *floribunda*) occurs naturally in various regions of Brazil, and due to its characteristics such as heat tolerance, adaptation to acid and infertile soil conditions, and ability to produce high amounts of forage of high quality, it appears as a good alternative for developing sustainable agricultural systems. Having this in mind, a few studies were carried out with the legume *C. argentea* to obtain information on its forage potential in the mountainous region of Southeast Minas Gerais, Brazil.

Establishment

The initial growth rate of *C. argentea* is slow, however, results of glasshouse experiments have indicated that the application of appropriate rates of both limestone and phosphorus fertilizer should contribute to accelerate the legume establishment. The use of efficient rhizobia strains could have a similar effect. The tropical legumes varies in their compatibility to rhizobia. Thus, studies on the requirements for effective biological N_2 fixation of this legume species are needed.

Forage yield and quality

Ten months after sowing, *C. argentea* with a height of 1.90m, was harvested and produced 364 g/plant (4.90 ton/ha) of dry matter (DM). Forty two days after this harvest, the dry matter and total-N yields were 20 and 1.0 g/plant, respectively (Table 1). Then, 84 days after the first harvest, the legume yield was 297 g/plant and 2,9% of N in the aboveground parts. Maximum forage yield was reached at 189 days after the first harvest, being 1073 g of DM per plant (14.3 ton/ha) with 2.1% N (Table 1). This last harvest was performed during the dry season. The digestibility data for *C. argentea* were comparable to those of other tropical legumes, except for the crude protein digestibility which was higher (Table 2).

Recommended forage management

In tests using both cattle and sheep, it was observed that the intake of *C. argentea* was higher when the plant, after harvesting, was submitted to a pre-wilting period of 24 hours, than when it was immediately supplied to the animals. Thus, pre-wilting is recommended for green-chopping systems.

In grazing systems, it is recommended an initial period of adaptation of the animals to the legume. During the rainy season, when usually there is sufficient forage of good quality and acceptability on offer, the legume is not grazed much. However, during the dry season, the legume is grazed, which justifies its use mainly during this period. Another observation is that cattle usually prefer the older leaves. Thus, in grazing systems the legume should be maintained high,

adopting only one harvest at the beginning of the rainy season. In addition, it is recommended that *C. argentea* be used as a protein supplement, together with tropical grasses.

Table 1. Dry matter yield and total-N of *Cratylia argentea* in different ages after a first harvest (average of eight replications).

Age after a harvest (days)	Dry matter yield (g/plant)	N (%)	Total-N (g/plant)
42	20	5.3	1.0
84	297	2.9	8.6
189	1073	2.1	22.5

Source: Xavier *et al.* (1990)

Table 2. Chemical composition and digestibility of *Cratylia argentea* with two months regrowth

Analysis	Percentage	Digestibility (%)
DM	26.6	56.7
CP	21.3	75.3
NDF	67.6	54.0
ADF	39.0	34.3

Source: Aroeira & Xavier (1991)

References

Aroeira, L.J.M. and Xavier D.F. (1991) Pasturas Tropicales, 13(3):15-19.
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